Executive summary

Today's researchers require skills beyond their core competencies

The formation and careers of researchers are important policy issues and training for transferable skills – skills that apply in a broad variety of work situations – is a challenge that attracts increasing policy interest. These skills are receiving more attention, particularly in higher education programmes, and training opportunities are expanding as research careers diversify and researchers' skills needs evolve. Researchers today need skills relating to communication, problem-solving, team-working and networking, and business and management know-how. These give them workplace competencies that are relevant for a broad job market, although the skills they need may vary in different sectors.

Formal transferable skills training is one way to achieve these competencies…

The literature identifies several benefits of formal transferable skills training. PhD candidates, for example, benefit from acquiring transferable skills during their studies. These help them succeed in carrying out their projects and in their later employment. While researchers naturally acquire some of these skills in the course of their studies and at work, others may require more systematic and quality-consistent training. Such training may also be especially valuable to female and international students and can create positive attitudes to ongoing learning. Researchers already in the workplace also benefit from ongoing acquisition of transferable skills in order to update and build on existing competencies or to "fill in gaps" so that they can work more effectively and benefit from a variety of opportunities. Learning by doing on the job is of course an important channel; however, formal skills training can add value, as can learning through work placements and secondments.

*...but there are questions about how and
whether they develop them successfully*

Nevertheless, the literature leaves several important questions unanswered. Some studies have pointed to shortcomings in researchers' competencies in transferable skills, while others have raised issues relating to the provision and relevance of training. Formal approaches to transferable skills training for PhD students are not uniformly welcomed, with some concerns about implications for core research, degree lengths and costs if more training is incorporated into PhD studies. There is also debate over the skills to be taught at different stages and the best way to learn them – interaction with supervisors and peers, formal courses, or workplace-based learning (*e.g.* during an internship). There are also questions about the amount and method of training for transferable skills and the roles of various stakeholders, such as governments and research institutions. For researchers in the workplace, there are also questions about the mix of skills required and learning methods, and there is some evidence of unmet demand for formal "workplace experience" channels. Together, these observations raise the question of the adequacy of current training approaches.

*To address this issue, this report presents
detailed information on relevant policies and
practices in a number of OECD countries*

By examining country-specific information on types of training, target audiences and skills, and stakeholder roles, this report begins to analyse transferable skills training for researchers in OECD countries. It focuses on countries' policies and practices at governmental and institutional level as they relate to formal training in transferable skills for researchers, from PhD students through to experienced research managers. It thus provides details on a key input to researchers' transferable skill competencies. It also shows that because researchers' employment differs across sectors and countries, as do their mobility and level of qualifications, the precise challenges countries face differ as well, with consequences for policy approaches. The appropriate role for government in transferable skills training is the central question behind this study.

Most training is driven by individual institutions

In an attempt to shed light on these issues, a policy questionnaire was distributed by country delegates to the OECD's Working Party on Research Institutions and Human Resources. The questionnaire responses indicate that institutions are the main actors in terms of transferable skills training for researchers, with the role of government secondary to that of universities, research institutions and other organisations. Around a third of responding governments have a strategy in this area, compared to almost two-thirds of universities, three-quarters of research institutions and three-fifths of other organisations. Around a third of responding governments also provide programmes for training, compared to practically all responding universities, half of research institutions and all of the other organisations. Summary information separately received from seven countries reinforces this picture; it generally indicates that government is not the key player in transferable skills training for researchers.

Training mostly targets PhD students, post-docs and early-stage researchers, with practical work experience an important complement to training programmes

Many programmes are for researchers at all levels; however, universities had a significant number of programmes specifically for PhD candidates and research institutions often had programmes for research personnel (particularly in leadership roles). At present, PhD students, post-docs and early-stage researchers appear to be the main focus of transferable skills training. Training at the Master's level is much more limited. Few governments, universities, research institutions or other organisations have explicit strategies or programmes for Master's students; those that exist are often part of broader activities for researcher training. However, a third of universities were planning changes to providing this type of training to Master's students. In terms of workplace experience, industrial PhDs, internships and exchanges are the most common approach, and governments noted their importance for building industry knowledge and supporting knowledge transfer. Almost a third of universities plan to expand workplace experience programmes or to make this a more systematic part of their educational approach. Respondents also noted the importance of researcher mobility and collaborative research projects in building valuable skills.

There is little evidence of an overall strategy and the various actors' strategies are general rather than focused on transferable skills

Overall, the questionnaire responses reveal a significant amount of transferable skills training activity, undertaken predominantly by individual institutions, for the most part without any overall national strategy or direction from governments or other entities. Strategies across all groups tend to be broad (not specific to transferable skills) and recently introduced. As well as enhancing the employability of researchers in academia, preparing researchers for a wider labour market, and improving research, the groups identified a number of additional strategic goals, which sometimes overlapped (*e.g.* teaching quality, commercialisation and knowledge transfer, international co-operation, and a quality research environment).

The available information does not allow for comparing transferable skills training across countries…

Unfortunately, it is not possible to compare transferable skills training across countries. Only 13 countries submitted information related to governments' and other institutions' transferable skills training; even for these the questionnaire results give only a sample of activity and numerous gaps remain. Not all relevant institutions were included, and for those that did respond, not all activity is captured. Importantly, some main actors in the transferable skills training arena did not participate. More generally, employers outside of universities and public research institutions were not in the sample of respondents.

…but it does indicate some differences among countries

With this in mind, the information submitted shows some dimensions along which countries appear to differ, although explaining these differences would requires more country-specific contextual information. In some countries, emphasis on transferable skills is relatively new (*e.g.* Luxembourg), while in others organised activity in this area has taken place for some time (*e.g.* United Kingdom). The level of government involvement and direction is relatively high in some countries (*e.g.* Korea) but not in others (*e.g.* Germany). At the institutional level, too, the approach depends on the context; for example, a technical university may be more concerned with academic skills than with transferable skills because its co-operation with industry may be considered to provide sufficient learning opportunities for the latter group of skills.

It is difficult at this point to know whether
market or system failures suggest the need for
government intervention

While institutions play the primary role in transferable skills training, governments potentially have roles ranging from strategic oversight to funding to delivery. For policy-making purposes, the key question is whether there are market or system failures that government intervention might alleviate. To argue that governments ought to change their current policy stances requires establishing that there is scope for governments to improve on current outcomes. However, while the questionnaire responses indicated a variety of training possibilities for researchers at different stages of their careers, the picture of the supply of training is incomplete and there is little information about demand for training. In addition, provision of training is often "unpriced" for training recipients; as most do not pay explicitly for their training courses there is no signal about the cost or perceived benefits of the training. Moreover, the questionnaire did not include some important players in the transferable skills arena; it is therefore not possible to assess systems as a whole. Finally, as most initiatives are fairly recent and the vast majority of programmes for transferable skills training have not (yet) been evaluated at programme level, it is difficult to comment on their impact, *e.g.* the change in skill levels due to the programmes, the subsequent effects on researchers and their research activities, the wider effects on desired goals, any unintended consequences, changes in behaviour, etc. All these factors make it difficult to identify potential failures that might be addressed by governments.

However, there is some evidence of the need
for reconsideration of some policy settings and
approaches

While the information gathered for this initial study can only give a partial view of transferable skills training, it is possible to identify some areas which policy makers may wish to review. To date, aside from ongoing improvements to courses and some expansion of programmes by institutions, changes are infrequently envisaged. However, there is some interest in taking a more systematic approach to training and to embedding training more thoroughly in existing education and research structures. Funding conditional on transferable skills training is another possibility, notably for funding for doctoral studies.

Relevant targets include monitoring and evaluation, dialogue between academia and industry, industrial PhDs, and leveraging research collaboration policies to support transferable skills training

Given these constraints, the policy suggestions offered on the basis of an initial and necessarily far from complete study are deliberately limited. They highlight areas in which policy makers may wish to review their policy approaches, having regard to the features of their researcher population and the institutional arrangements in place. They concern issues valued by a spectrum of stakeholders. They aim not to crowd out existing or potential training activity by universities, research institutions and other organisations with an interest in researcher development, but to facilitate their evolution.

First, policy makers could investigate options for boosting the monitoring and evaluation of transferable skills training. The relatively little that is currently known about the outputs and outcomes of transferable skills training hampers robust policy making. A better evidence base is essential if governments and institutions are to make good decisions on training provision.

Second, governments could explore ways to facilitate dialogue between academia and industry on training needs and opportunities. As well as potentially helping to shape training provision, this could reinforce the value of transferable skills and raise awareness within institutions about the training opportunities already on offer.

Third, they could consider ways to encourage provision of industrial PhD options as a complement to formal training courses in universities, as well as opportunities for mobility (both within and between sectors) as a development tool for more experienced researchers. Many stakeholders stress the benefits of a balance of formal and informal learning, and questionnaire responses indicated that workplace experience training is currently relatively less common.

Fourth, governments could consider how their general policies on collaborative research can be leveraged to support transferable skills training opportunities for researchers at all stages of their careers. This could yield benefits for researchers across all sectors and is consistent with the observation that research structures are increasingly collaborative, networked and multidisciplinary.