



Guidance Note: *Research and Research Training*

This guidance note provides advice on requirements for any research or research training conducted under the auspices of a higher education provider.

A separate guidance note on 'Academic Integrity' addresses matters concerning integrity in academic activities, including research and research training. Some key points are mentioned below.

What is research?

For the purposes of the *Higher Education Standards Framework (Threshold Standards) 2015* (HES Framework), TEQSA defines research as '*academic activities of a higher education provider that contribute to new knowledge through original investigation*'. This definition points to the fact that research is systematic, planned and purposive. Research can be carried out in all academic disciplines and may involve a range of tools and media.

Another reference point is that: research is '*the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings*' (HERDC, 2016) and new applications of knowledge.

A further definition is contained in the Australian Qualifications Framework (AQF, 2013): '*Research comprises systematic experimental and theoretical work, application and/or development that results in an increase in the dimensions of knowledge*'.

What is research training?

For the purposes of the HES Framework, 'research training' is defined as a formal course of postgraduate study that leads to the acquisition of advanced skills, techniques and knowledge in the conduct of research, and requires the production of a substantial original research output, such as a thesis.

In Australia, the term 'research training' usually refers to studies for Research Masters and Research Doctorate degrees (AQF Levels 9 and 10). The phrase 'higher degree(s) by research' (HDR) has the same scope.

Research training can be contrasted with 'coursework', which is defined as: '*a method of teaching and learning that leads to the acquisition of skills and knowledge that does not include a major research component*' (AQF, 2013). While HDR may contain some coursework subjects designed to build skills and knowledge in research methods, research should constitute at least two thirds of the course if they are to be classified as HDR.

Bachelor Honours degrees (AQF Level 8) may include a significant research component and be a pathway to further research training; however, TEQSA will not assess coursework degrees (including Bachelor Honours Degrees) against the research Standards.

Research training may include coursework elements, focusing on research skills or more general skills that graduates will need for research related careers. Research training is the most important pathway to careers in research and research related roles in Australia (Australian Government, 2011a, p. 3). However, many graduates from research training courses '*go into roles beyond research and education, in the public, charitable and private sectors, where deep rigorous analysis is required*' (LERU, 2016, p. 6). For this reason, graduates from HDR may '*need not only academic skills, but a wide range of generic competencies to operate effectively in these diverse contexts*' (Australian Government, 2011a, p. 22).

Relevant Standards in the HES Framework

Not all higher education providers are required to have staff engage in research or provide research training among their courses, but if one or both are undertaken under the auspices of the provider, including within the context of providing HDR, the relevant Standards in the HES Framework must be met.

Section 2.1 requires research facilities to be fit for purpose and accommodate the numbers and research activities of the students and staff who use them.

Section 5.2 on Academic and Research Integrity states further requirements to safeguard integrity in all aspects of research, including research training and research undertaken with partners.

Part B of the Framework, on provider categories, sets out requirements for use of the title 'university'. Any provider seeking to use the title 'university' must meet the requirements for breadth and depth of research activity and research training applicable to the specific category.

Research

The principal Standards concerned with research are in Part A, Section 4.1, 'Research', which sets out three broad requirements for:

- 4 a research policy framework
- 4 qualified staff, and
- 4 the recording of research outputs.

Section 4.1 applies to all research carried out by a provider, regardless of whether the research is carried out within the context of research training or not.

Projects carried out by students within coursework degrees are not considered to be research, however.

Where a provider is offering HDR, Standard 4.2.2 requires them to be provided '*in a supervisory and study environment of research activity or other creative endeavour, inquiry and scholarship*'.

Research Training

Section 4.2 sets out detailed requirements in respect of:

- 4 an institutional research training policy framework
- 4 the necessary supervisory and study environment of research activity

- 4 supervisory arrangements
- 4 induction of research students, including relevant policies, and
- 4 coursework components.

Standard 4.2.1 on an institutional research training policy framework lists specific matters that institutions need to achieve in relation to:

- 4 the rights and responsibilities of research students and supervisors
- 4 monitoring the progress of research students
- 4 communication of research outputs by students, and
- 4 the resolution of disputes.

The structure, content and components of research training qualifications need to meet the academic governance and quality assurance requirements required of other coursework offered by the higher education provider.

There are additional specific requirements in the HES Framework regarding the assessment of progress in research training (Standard 1.3.3). Requirements for research students to demonstrate the achievement of specific and generic learning outcomes related to research are listed in Standard 1.4.5, while Standard 1.4.7 requires that the outputs of research training constitute an original contribution to the field.

Section 5.4, on Delivery with Other Parties, sets out requirements in respect of quality assurance and provider accountability in collaborative research training, while Standard 7.3.1j requires the provision of public information on arrangements with other parties to conduct research training. Section 6.3, on Academic Governance, clarifies that academic oversight to assure quality includes oversight of the quality of research training.

Intent of the Standards

Research

The overall intent of the relevant Standards in Part A of the HES Framework is to ensure that research carried out by staff, students, visitors, partners or contractors (or generally under the auspices of the provider) is well-managed and meets legislative, professional and community standards of conduct and quality.

Section 4.1 on research intends, in the first place, that the provider establish an appropriate and adequate set of policies for the internal management of research activities. In so doing, the provider will need to demonstrate an understanding of the issues involved in the conduct of research and of external requirements that guide this conduct.

TEQSA recognises that providers who are receiving funding from national Australian funding bodies, such as the Australian Research Council (ARC), the National Health and Medical Research Council (NHMRC), or other major agencies, must meet stringent requirements attached to their funding that are more detailed than the requirements of the HES Framework. These requirements include various codes of conduct, such as the NHMRC's *Australian Code for the Responsible Conduct of Research*.

These requirements should not discourage the conduct of research that is controversial, keeping in mind the academic freedom of an individual to push against the boundaries of current knowledge. However, the moral and ethical dimensions of conducting a specific research project never should be overlooked. For this reason, review and clearance of a project (prior to its commencement) by a research ethics committee is required for many investigations. Such a review will also consider whether the research is worth conducting, given the costs and risks it imposes for participants. Academic governance arrangements need to ensure that there are controls for any risks that reasonably can be foreseen in the conduct of a research project.

Section 4.1 also encompasses specific requirements for people who conduct or oversee research to be appropriately:

- 4 qualified, i.e. to have a research qualification or equivalent
- 4 skilled, and
- 4 experienced.

Sections 4.1 together with 5.2 are intended to ensure that research is carried out with integrity and honesty. This involves correct acknowledgement of all contributions, no fabrication or falsification of data or evidence, appropriate storage of original data, no plagiarism, transparency around funding sources, and treatment of potential conflicts of interest.

Research Training

The main intent of Section 4.2 is to safeguard the quality of research training, maximising the likelihood that research training students successfully complete their course of study, and in the process produce original outputs that contribute to the relevant field.

Many of the practices of research training differ somewhat from other forms of higher education, depending on the discipline. Students are expected to:

- 4 work semi-independently
- 4 select an appropriate methodology
- 4 appreciate the ethical implications of their project
- 4 relate their project to the body of existing research literature and outputs
- 4 conduct research or develop new creative work
- 4 establish networks in their field, and
- 4 generally become well-socialised to international norms for and approaches to research.

The student is expected also to develop a more or less fully-fledged identity as a researcher, so their research activities often generate deep personal reflection and emotional significance.

The Standards aim to ensure that the provider is able to control for risks associated with the conduct of a project by a necessarily inexperienced researcher who is an enrolled student of the provider.

Given the immersive experience that is research training, the Standards aim also to ensure that students undertaking research training do not do so in isolation but rather in a 'research-rich environment' (LERU, 2016, p.8), with research-active colleagues. For this reason the Standards

require providers to have considered the quality of the research environment into which students will enter (including compliance with the requirements of Section 4.1), as well as the adequacy and safety of resourcing for a student's research project, which may include fieldwork in remote or overseas locations or with particular communities (such as Aboriginal and Torres Strait Islander peoples). Funding for dissemination of research outputs, e.g. through conference presentations, is expected to be provided. TEQSA may test the adequacy of the research environment partly through assessing evidence of staff publications, especially in the case of supervisors and in fields where a provider is offering HDR.

Providers must ensure appropriate management of the interpersonal relationships involved in research training, including management of supervision and collaborative partnerships.

HDR normally take between two and four years to complete full-time. In the process, the relationships between individual students and their supervisors are crucial (Denholm and Evans, 2006; Mainhard et al., 2009; OLT, 2013). These relationships have the potential to make or break a successful educational outcome. In particular, continuity of supervision needs to be maintained even when unexpected events occur, such as the departure of a supervisor to a different institution, which is not unusual. For this reason, the Standards mandate at least two supervisors for a student. The provider needs to provide professional development for academics and associate supervisors to support effective supervision.

Recognising that disputes over the direction of the research, the amount of progress, intellectual property, authorship or other matters will arise for some students and supervisors during research training, the Standards aim to ensure that the provider has an effective process to handle disputes or grievances, including those that may arise where students are working collaboratively with academics from other institutions or contacts in industry.

As in the conduct of academic life generally and research specifically, the Standards emphasise the need for integrity in all aspects of research training, including the avoidance of conflicts of interest.

Risks to Quality

Research

The concern of the Standards on Research, and of TEQSA, is for providers to maintain an appropriate balance between the quest for new knowledge, which will involve some risks, and the application of internal management controls for:

- 4 safety
- 4 integrity
- 4 quality, and
- 4 consistency.

Research may involve risks to people or animals (NHMRC, 2013) who are the subject of the research, to their communities, to the persons conducting the research and to the environment. There are significant reputational risks if research fails to meet ethical standards that reasonably could be expected to be held by the Australian public.

Internal management controls also need to accord with external requirements, laws and norms, so that providers do not find themselves in breach of Australia's laws on intellectual property protection, for example, or the *Australian Code for Responsible Conduct of Research*. Particular requirements exist for research involving Aboriginal and Torres Strait Islander communities (NHMRC, 2003; IATSIS, 2012; The Australia Council for the Arts, n.d.). Individual research funding bodies or sponsors may have additional requirements (e.g. NHMRC, 2015b).

Any breaches of law or of national codes for research pose a reputational risk to the provider, as do allegations of research misconduct or of breaches of research integrity.

Ownership of, or effective control over, new knowledge and discoveries (intellectual property) is a fraught area that can generate much confusion and disputation, leading in some situations to financial and/or reputational damage to a provider. Experience has shown, and the Standards require that, internal policies, systems and processes must be in place to clarify at the outset the matters relating to the ownership and use of intellectual property generated by:

- 4 staff
- 4 students
- 4 visitors
- 4 partners, or
- 4 contractors.

Finally, providers are expected to be accountable to their governing bodies, to any sponsors and to the public for ensuring appropriate and useful outputs are provided in return for the funds committed to the research. Certain providers, including universities, will need to be capable of meeting the requirements of future national research assessment exercises similar to the completed Excellence for Research in Australia (ERA) rounds and the annual Higher Education Research Data Collection on research income (HERDC, 2016).

Research Training

Many of the risks involved in research training are the same as those for the conduct of any research under the auspices of the provider, including collaborative research that involves issues of intellectual property ownership. It should be noted that research training must include training in academic and research integrity.

However, there are additional risks specific to research training, given the nature of the student experience as an extended practical training in the conduct of research. The student's major research project involves a considerable investment of time by the student and resources by the student and other funders. While the research has to generate new knowledge, there are severe consequences (where applicable) for the student if the research fails to be completed or does not produce new knowledge, as the student may not then qualify for the award. These potential consequences present a higher degree of risk for a research student than for an established researcher, who may simply be able to abandon a failed project.

There is debate in the literature over the extent to which research students should be encouraged to tackle highly risky original projects or, instead, be steered towards projects that are judged to be more manageable and more likely to produce an adequate output for assessment (McWilliam et al., 2006). Of course, selection of the project and method are not

wholly under the provider's control, but need to be negotiated with the student. Similarly, the degree of independence granted to a research student also means that a student may choose to assert their right to have their thesis examined, even against the strong advice of their supervisors.

The extent of time it takes to complete a doctoral qualification may of itself be a risk factor, as much can change in a research student's life over several years. Providers need to pay particular attention to ensuring adequate progress is maintained by research students. Any lack of progress should be identified at an early stage by supervisors and fresh targets established with the student. Providers need closely to monitor:

- 4 attrition rates
- 4 times to completion, and
- 4 the incidence of "unsatisfactory progress" reports.

Inadequate supervision is a major risk in research training, as it may lead to students embarking on poorly planned and executed projects, or research that exposes a student to uncontrolled risks due to a lack of knowledge, e.g., a lack of awareness of safety protocols for laboratories or of the dangers in particular environments. Robust consideration of proposals by relevant ethics committees can help to control these risks, but a student's primary guides are their supervisors. As noted above, a change of supervisor(s) is often a high risk for research training, especially if a new supervisor has less interest in the student's research project than the original supervisor.

Inadequate supervision may also result in a poor choice of examiners or the dispatch of a thesis for examination that is under-prepared. In regard to examination of the thesis or other research output, higher education providers need to give clear advice to examiners. They also need to provide guidance on the amount of external editing that is acceptable in a thesis without compromising the originality of the work.

Unsupportive or insensitive supervision can also lead to a breakdown in the relationship between a research student and supervisor, as the student seeks to forge and assert an identity as an independent researcher. To control this risk, providers need to have systems, respectful of the views of all parties, to manage and resolve disputes between students and supervisors.

Inadequate resourcing for research students' projects, including inadequate on-campus facilities and a less than stimulating intellectual environment, are common concerns of research students (Australian Government, 2011b). Providers need to ensure that research students are clear about their entitlements and that what is promised is delivered.

What TEQSA will look for

This part of the guidance note covers the full extent of the Standards, and corresponding evidence that TEQSA may require, in relation to research and research training.

For new applicants seeking initial registration and course accreditation, TEQSA will require evidence to be provided in relation to all relevant Standards.

For existing providers, the scope of Standards to be assessed and the evidence required may vary. This is consistent with the regulatory principles in the TEQSA Act, under which TEQSA has discretion to vary the scope of its assessments and the related evidence required. In exercising this discretion, TEQSA will be guided by the provider's regulatory history, its risk profile and its track record in delivering high quality higher education.

TEQSA's case managers will discuss with providers the scope of assessments and evidence required well ahead of the due date for submitting an application.

The evidence required for particular types of application is available from the Application Guides on the TEQSA website.

Research

Standard 4.1.1 on research requires, in the first place, that the provider establishes a policy framework for the conduct of research under the provider's auspices. In this context, a policy framework would be a coherent and consistent set of policies, and associated procedures, to address:

- 4 research ethics
- 4 ownership and management of intellectual property
- 4 research partnerships
- 4 requirements for publication and authorship, and
- 4 allegations of misconduct in research.

TEQSA does not mandate a particular structure for policies. For example, the last of these requirements could be addressed in an overarching policy and procedures for academic integrity.

TEQSA will consider not only the presence of policies and procedures but also whether or not they are:

- 4 accessible
- 4 relevant to the scale and scope of research being carried out
- 4 known by staff and students
- 4 implemented, and

- 4 demonstrated to be effective in practice.

The provider will need to be able to reference these policies to external requirements, particularly in regard to research ethics. In relation to Standard 4.1.1.a, TEQSA would look for the provider's mechanisms for ethics clearance for research involving humans, animals and/or biohazards, and evidence that these mechanisms are consistent with the *Australian Code for Responsible Conduct of Research* and other relevant codes.

In regard to 4.1.1.c, TEQSA may consider also the adequacy of the provider's agreements for research partnerships and the extent to which the provider is aware of issues in partnership agreements more generally. As an example, many bodies that fund medical research will not support providers that accept tobacco company sponsorship, which could lead to compromised relationships. Such issues go to the broader ethical matters that a higher education provider needs to be aware of and to manage.

On 4.1.1.e and 5.2, TEQSA may consider how any cases involving allegations of research misconduct have been addressed and resolved, and whether any improvements were made to policies or procedures to prevent recurrence of breaches.

For 4.1.2 and 4.1.3, TEQSA may look for a framework or system for maintaining records of research output that is appropriately classified and includes peer-reviewed and non peer-reviewed outputs, such as:

- 4 publications
- 4 papers
- 4 reports
- 4 performances and artefacts, and
- 4 articles.

Providers that are starting to build their research profile may include a wider range of outputs, including non peer-reviewed outputs, than those that would normally form part of a submission for a national research evaluation such as ERA. Research student completions and external research income should also be included as outputs. Research outputs should be able to be matched to their authors, with those persons that are employed by the provider clearly identified.

Research Training

Standard 4.2.1 on research requires, in the first place, that the provider establish an institutional research training policy framework, addressing a series of important elements for the management and quality assurance of research training. TEQSA does not mandate a particular structure for policies, but the framework should support the management and resolution of the types of issues discussed in this guidance note.

TEQSA will look at the adequacy of the policy framework for research training and the clarity of institutional responsibilities, seeking evidence that policies and procedures are:

- 4 accessible

- 4 relevant to the scale and scope of research being carried out
- 4 known by research students and supervisors
- 4 implemented, and
- 4 demonstrated to be effective in practice.

In this regard, TEQSA will look at the higher education provider's history of supporting academics to develop the skills for effective supervision and the provider's record, if any, in assessing research students' progress (Standard 1.3.3).

TEQSA will seek evidence that the provider has considered whether it can offer adequate supervision, resources and intellectual climate before it admits students for research training. In regard to Section 2.1, TEQSA will examine evidence that research training facilities are fit for purpose and adequate in scale and scope.

As part of this process, TEQSA will seek any information on aggregated attrition and completion rates for HDR, and time to complete, as well as the institutional systems for monitoring, reporting and improving these rates. If information is available, TEQSA will consider the provider's results from the Postgraduate Research Experience Questionnaire (PREQ), formerly managed by Graduate Careers Australia (GCA, 2016).

TEQSA may examine the detailed program specifications and requirements for HDR, including whether they meet the requirements in the Standards for research students to demonstrate the achievement of specific and generic learning outcomes related to research (Standard 1.4.5) and for their output to constitute an original contribution to the field (Standard 1.4.7). TEQSA may seek information on feedback received from examiners on the quality of theses or other research outputs.

In regard to Standard 4.2.1, TEQSA will seek information on how well the provider manages or plans to manage:

- 4 issues concerning continuity of supervision
- 4 any disputes that arise
- 4 conflicts of interest, and
- 4 other matters, for example, when examiners' recommendations disagree.

Standard 4.2.2 requires that students undertake research training within 'an environment of research activity'. TEQSA may investigate where it appears that a provider is offering HDR in a field where there is no or minimal research publication by academic staff members.

On Section 5.2, TEQSA may seek information on the handling of questions of integrity in research training and how research students acquire understanding of academic integrity.

In regard to Section 5.4 on delivery with third parties, TEQSA may seek information on the extent to which the provider has considered how it has or will manage partnerships and collaborative research in which research students are involved, and the responsibilities of the

respective parties for the examination process, selection of examiners and appointment of supervisors.

The provider's awareness of external reference points may be explored, including guidance available from the Australian Council of Graduate Research. TEQSA may ask providers how policies and procedures have been revised in the light of experience with research training.

In assessing whether a provider meets the Standards in regard to research training, TEQSA will also consider the extent to which the Standards relating to research are met by the provider, given that research training by definition includes the conduct of research. TEQSA will also consider the extent to which any relevant requirements for providers in regard to students are met for the specific category of research students, for example, in regard to public information for students (Standard 7.3.1j).

TEQSA will check whether any Part B requirements in the HES Framework relating to research training have been met.

Scope of assessments

If, as a result of considering the conduct of research activities under the provider's auspices TEQSA is satisfied that the management of research is as required by the HES Framework and that the provider demonstrates knowledge and capabilities in the management of research, TEQSA's confidence in the ability of the provider to offer research training may increase. Conversely, if there is little evidence of research outputs in a field where higher degrees by research are being offered, TEQSA's confidence will be lower and further investigation may be required.

TEQSA accepts that there will be isolated instances of concern or controversy over research and research training activities and research management practices, and that the provider and/or other authorities are responsible for addressing individual cases. However, if concerns are raised in relation to the provider's capabilities to manage or to internally quality assure its research or research training activities, TEQSA may need to explore the extent to which these concerns reflect any systemic difficulties of the provider, including research training activities and matters relating to academic integrity generally. In determining the need or otherwise to explore further, TEQSA will take account of the scale and scope of the provider's research and research training activities, noting that providers in any of the 'university' categories in Part B of the HES Framework will have a very substantial volume of research and research training activity.

Resources and references

Australian Council of Graduate Research website, <<http://www.ddogs.edu.au/>>.

Australian Government (2011a), *Research skills for an innovative future: A research workforce strategy to cover the decade to 2020 and beyond*, <<http://www.industry.gov.au/research/ResearchWorkforceIssues/Pages/Library%20Card/researchskillsforaninnovativefuture.aspx>>.

Australian Government (2011b), *Defining quality for research training in Australia: A consultation paper*, <https://docs.education.gov.au/system/files/doc/other/defining_quality_for_research_training_in_australia.docx>.

Australian Qualifications Framework Council (2013), *Australian Qualifications Framework Second Edition January 2013*, <<http://www.aqf.edu.au/>>.

Australian Institute of Aboriginal and Torres Strait Islander Studies (2012), *Guidelines for Ethical Research in Australian Indigenous Studies*, <<http://aiatsis.gov.au/research/ethical-research/guidelines-ethical-research-australian-indigenous-studies>>.

Denholm, C. and Evans, T. E. (eds) (2012), *Doctorates Downunder: Keys to Successful Doctoral Study in Australia and Aotearoa New Zealand, 2nd edition*, Melbourne: ACER Press.

Graduate Careers Australia [GCA] (2016), *Postgraduate Research Experience Questionnaire overview*, <<http://www.graduatecareers.com.au/research/start/agsoverview/ctags/preqo/>>.

Higher Education Research Data Collection (2016), *Draft Higher Education Research Data Collection Specifications for the collection of 2015 data*, <<https://www.education.gov.au/higher-education-research-data-collection>>.

League of European Research Universities [LERU] (2016), *Maintaining a quality culture in doctoral education at research-intensive universities*, <http://www.leru.org/files/publications/LERU_AP19_maintaining_a_quality_culture_in_doctoral_education.pdf>.

McWilliam, E., Sanderson, D., Evans, T., Lawson, A. and Taylor, P. G. (2006), *The risky business of doctoral management*, *Asia Pacific Journal of Education*, vol. 26, no. 2, pp. 209–224.

Mainhard, T., van der Rijst, R. & van Tartwijk, J. (2009), *A model for the supervisor-doctoral student relationship*, *Higher Education*, 58 (3), pp. 359–373.

National Health and Medical Research Council (2003), *NHMRC Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research*, <<https://www.nhmrc.gov.au/guidelines-publications/e52>>.

National Health and Medical Research Council (2007, under review), *Australian Code for the Responsible Conduct of Research*, <<https://www.nhmrc.gov.au/guidelines-publications/r39>>.

National Health and Medical Research Council (2013), *Australian Code for the Care and Use of Animals for Scientific Purposes 8th edition*, <<http://www.nhmrc.gov.au/guidelines-publications/ea28>>.

National Health and Medical Research Council (2007, updated May 2015), *National Statement on Ethical Conduct in Human Research*, <<https://www.nhmrc.gov.au/guidelines-publications/e72>>.

National Health and Medical Research Council (2015), *National Principles of Intellectual Property Management for Publicly Funded Research*, <<https://www.nhmrc.gov.au/grants-funding/policy/intellectual-property-management/national-principles-intellectual-property-man>>.

Office of Learning and Teaching (2013), *Higher Degree Research Training Excellence: A Good Practice Framework*, prepared by Joe Luca and Trish Wolski (Edith Cowan University), <<http://www.olt.gov.au/resource-higher-degree-research-training-excellence-good-practice-framework-2013>>.

The Australia Council for the Arts (n.d.), *Protocols for working with Indigenous artists*, <<http://www.australiacouncil.gov.au/about/protocols-for-working-with-indigenous-artists/>>.

TEQSA (2016), *Explanations of terms in Part A of the HES Framework 2015*, <<http://www.teqsa.gov.au/explanations-hes-framework-terms>>.

Version #	Date	Key changes
1.0	21 October 2016	Made available as beta version for consultation.

Consultation
Draft