

Research Agenda for Initial Teacher Education in Australia

October 2015

Developing the Research Agenda

AITSL would like to acknowledge the assistance of those who have worked with us to develop this Research Agenda.

Emeritus Professor William Loudon was commissioned to conduct stakeholder consultations and develop a set of research priorities. The structure of this Research Agenda and a large part of its content directly reflect Professor Loudon's work. We also thank those stakeholders who gave their time to participate in these consultations.

This Research Agenda has also benefitted greatly from the input of a Research Advisory Group, which met on two occasions to discuss drafts and directions for this work. The Research Advisory Group was chaired by AITSL Director Ms Melanie Saba.

Other members were:

- Professor John Hattie, Melbourne Graduate School of Education, AITSL Board Chair
- Dr Jenny Donovan, New South Wales Department of Education and Training
- Professor Helen Wildy, University of Western Australia
- Professor Tania Fitzgerald, LaTrobe University
- Professor Jenny Gore, University of Newcastle
- Professor David Lynch, Southern Cross University
- Professor Stephen Dobson, University of South Australia
- Professor Diane Mayer, University of Sydney

Commentary on the Research Agenda was also provided by three international experts:

- Professor Dan Goldhaber, University of Washington
- Professor Ian Menter, Oxford University
- Professor Tan Oon Seng, National Institute of Education, Singapore

The Research Agenda is stronger for the contributions of all these experts. However, AITSL takes responsibility for the final version of the Research Agenda, and acknowledges it may not completely reflect the views of those who have contributed to its development.

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Purpose

This Research Agenda describes research priorities for initial teacher education in Australia, and the actions the Australian Institute for Teaching and School Leadership (AITSL) will take to achieve them. The Research Agenda aims to:

- Create a clear direction for initial teacher education research
- Stimulate collaboration and research activity to meet the identified priorities
- Articulate a clear role for AITSL as a catalyst to promote research in these areas.

Why a Research Agenda for initial teacher education?

The report of the Teacher Education Ministerial Advisory Group, *Action Now: Classroom Ready Teachers*, identified an urgent need for an improved evidence base on initial teacher education in Australia. Among its recommendations for improvement, the Advisory Group recommended that AITSL develop a national focus on research in initial teacher education. This recommendation was accepted in the Australian Government's response to the *Action Now* report.

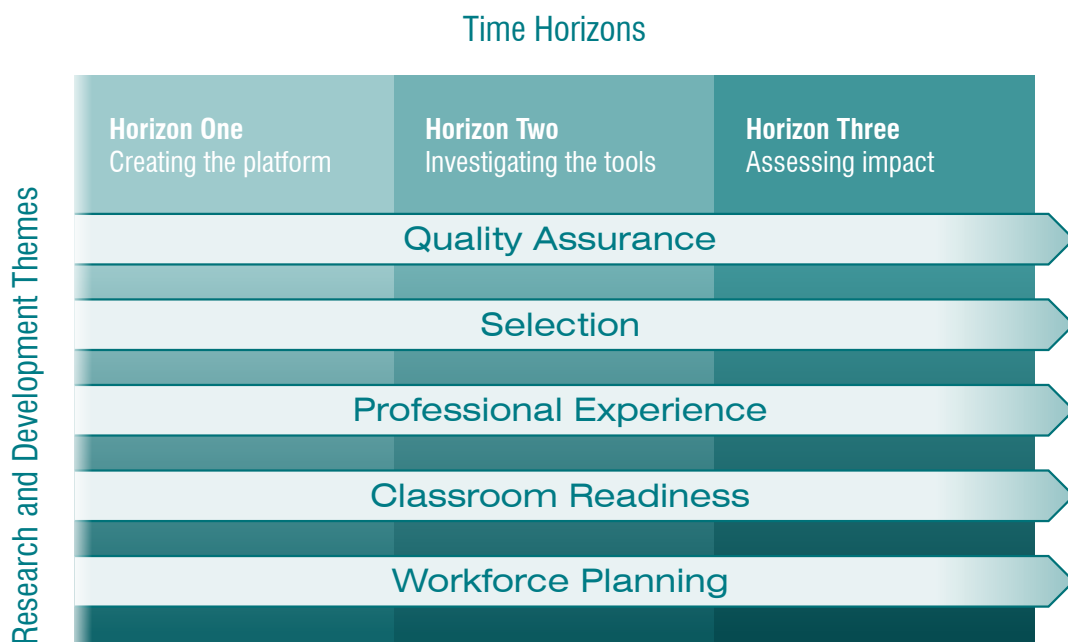
In addition to the specific recommendation about an improved evidence base, the whole approach to initial teacher education being implemented in response to *Action Now* demands a focus on research, data and evidence. The new approach will result in initial teacher education programs being accredited based on their impact on their graduates, and those graduates' impact on student learning. This will both require and enable a much sharper focus on what elements of initial teacher education produce this impact. To be effective, such an approach must be underpinned by a national program of research that illuminates these issues.

Research Priorities

The Research Agenda outlines a set of research priorities for initial teacher education in Australia. These are based on the themes of the *Action Now* report, and reflect national reform priorities. The priorities are also organised into three time horizons, recognising that an evidence base that allows an assessment of the impact of initial teacher education will need to develop over time. The three horizons are:

- **Horizon 1 – Creating the Platform** focuses on developing data collection protocols and assessment tools. This work will be undertaken in the early years of implementation of the Research Agenda, in 2015 and 2016.
- **Horizon 2 – Investigating the Tools** focuses on exploring the application of these data collection protocols and assessment tools in ITE, with the goal of developing the capacity for collaborative and longitudinal research on processes and outcomes. Work on Horizon 2 opportunities will be undertaken as the new tools and assessments become available, from 2016 onwards.
- **Horizon 3 – Assessing Impact** focuses on bringing together the body of research and development activity to demonstrate the impact of ITE on candidates' development and their subsequent impact on school students' achievement. Work on Horizon 3 opportunities will be possible when the data collection protocols and assessment tools are well established.

This approach is summarised in the diagram below:



Research Themes

Quality Assurance

In order to support the long-term goal of demonstrating the impact of a strengthened accreditation system on the quality of ITE, it will first be necessary to build a common set of data collection protocols and assessment instruments. These need not be adopted universally, but should provide for some underlying comparability among programs in different institutions and jurisdictions. Tools and assessments developed to serve the quality assurance research theme will complement tools and assessments developed to serve the 'selection', 'professional experience', 'classroom readiness' and 'workforce planning' themes.

There will be both national and local opportunities for research on the impact of strengthened accreditation. Nationally, teacher regulatory authorities and universities will be interested in research exploring the impact of the new accreditation requirements on selection, professional experience and classroom readiness of graduates. Locally, individual ITE providers may wish to undertake, share and publish accounts of the impact of changes they make in preparation for accreditation stage two. This might include surveys of students or employers, advisory committee feedback, external review panels, focus groups or interview studies. The adoption of common questions and research designs in student and employer perception surveys will increase opportunities for data pooling across providers and jurisdictions, and future opportunities for benchmarking and analysis of particularly successful programs (Mayer, 2015).

In Horizon 1, the first research priority concerns consistent data collection on ITE students' and employers' perceptions of program impact.

Quality Assurance, Horizon 1

Key question	Research and development opportunities
How can changes in ITE graduates' and employers' perceptions be tracked over time?	Development of a common national follow-up survey, to track graduates' and employers' perceptions of program impact through course completion, initial registration, employment and full registration.
	Reliability and validity studies of the follow-up survey.

In Horizon 2, programs will have opportunities to use the new national follow-up survey, as well as their own local feedback, to track program improvement. In addition, there will be opportunities to explore the evidence base behind decisions they make about coursework teaching in particular subjects and phases of schooling.

Quality Assurance, Horizon 2

Key question	Research and development opportunities
What evidence is there of improvements in perceptions of the quality of particular ITE programs?	How effective is the national follow-up survey in tracking evidence of improvements in quality in ITE?
	What evidence is there of program improvement, using other available data such as advisory committee feedback, external review panels, focus groups or interview studies?
	To what extent do ITE programs consider evidence of impact on school students' learning in their coursework teaching on specific subjects and phases of schooling?

As the professional experience and classroom readiness assessments developed in Horizon 1 are implemented in Horizon 2, there will be improved national capacity to explore the impact of more outcome-focused accreditation procedures on program improvement in Horizon 3.

Quality Assurance, Horizon 3

Key question	Research and development opportunities
What evidence is there of improvements in the quality of ITE in Australia?	Have graduates' and employers' perceptions of the impact of ITE changed over time?
	Have ITE students' abilities to meet the Graduate Standards changed, including in the areas identified in <i>Action Now</i> : <ul style="list-style-type: none"> • Meeting the needs of a diverse student population • Analysing and responding to student assessment data • Literacy and numeracy teaching • Ability to engage with parents about the progress of their children • Primary teachers' subject specialisation, especially in science, mathematics and languages?
	Has the selection and training of supervising teachers improved, and to what extent has this contributed to improvement in the quality of ITE?
	Has the development of common assessments of classroom readiness improved the quality of feedback available to ITE students as they develop?
	To what extent do personal characteristics of ITE candidates and their prior academic achievement contribute to their success in ITE programs and their later success as teachers?
	What impact are ITE graduates having on school student learning and is the new approach to accreditation improving this?

Selection

Education Ministers have agreed to national Selection Guidelines that focus on both academic and non-academic capabilities required to succeed in initial teacher education and in teaching itself.

Action Now recommended that providers select candidates using 'sophisticated approaches' including assessment of the personal characteristics required to become a successful teacher. Some universities are already using such tools, and there are opportunities to develop new selection tools and processes that pay more attention to personal suitability for teaching. The ability to use such tools to predict later success in teaching might also be explored through predictive validity studies linking scores on selection tools with later measures of retention, academic and classroom performance, initial or full registration, or teaching effectiveness. There may also be some benefit in exploring the perceptions about teaching and teacher education of students who do not choose ITE, or who initially enrol and later transfer to other degree programs.

The social science literature commonly distinguishes between selection and treatment effects (Goldhaber, 2013). Selection effects depend on who enters ITE programs and the skills and dispositions they bring; treatment effects depend on the academic emphases of programs, the timing and distribution of professional experience, and the assessment tools used to provide formative feedback and support summative judgements about teaching quality. As the proposed research agenda progresses, it will be useful to attempt to separate selection and treatment effects in program evaluation and accreditation. In the longer term, it will also be useful to explore the rate of decay of any selection and treatment effects observed in the early years of teachers' careers.

Much of the work in the 'professional experience' and 'classroom readiness' themes will explore treatment effects, such as the impact of improved selection and support for supervising teachers on development of ITE students. But alongside such treatment effects, it would be useful to develop better understanding of the impact of academic and non-academic capabilities at entry on the outcomes of ITE. Data on the academic background of ITE candidates should be collected as part of the nationally consistent data profiles proposed (below) in the 'workforce planning' theme. The key Horizon 1 selection priority concerns the development of selection tools.

Selection, Horizon 1

Key question	Research and development opportunities
What are the personal qualities required to become a successful teacher?	Development of ITE selection tools that identify the personal characteristics that candidates bring to teacher education.
	Reliability and validity studies of selection tools.

In Horizon 2, ITE providers may wish to use data from selection tools to understand the characteristics of those who do and do not enter teacher education; to explore the impact of literacy and numeracy assessments on selection, enrolment and retention; and to document the success of support programs for those who enter with less well developed academic skills or lower literacy and numeracy assessment scores.

Selection, Horizon 2

Key question	Research and development opportunities
What are the personal and academic characteristics of ITE students?	What are the academic and personal characteristics of students who choose to enter ITE?
	What are the academic and personal characteristics of students who do not choose to enter ITE, or who transfer to other courses after beginning ITE?
	What is the impact of literacy and numeracy testing on patterns of selection, enrolment and retention?
	What is the impact of support programs on the literacy and numeracy scores of ITE students?
	What differences are there among institutions in the distribution of literacy and numeracy assessment scores?

The assessments developed in the 'classroom readiness' theme, combined with data protocols proposed in the 'workforce planning' theme could be used to underpin research on selection in Horizon 3. How much influence, for example, do academic and personal selection characteristics have on performance on classroom readiness assessment during ITE, on later employment outcomes, or on later school student achievement?

Selection, Horizon 3

Key question	Research and development opportunities
How influential are selection effects on the outcomes of ITE?	To what extent do academic and personal characteristics of ITE students predict performance on classroom readiness assessments?
	To what extent do academic and personal characteristics of ITE students predict attrition, retention and employment?
	To what extent do academic and personal characteristics of ITE students predict school students' achievement?
	To what extent do selection effects decay in the years beyond initial registration?

Professional experience

There is a substantial research literature on professional experience and a long history of case study reports of innovative practices by ITE providers. Further research, however, will be required to ensure “rigorous, iterative and agreed assessment” of ITE students (*Action Now*, 2015, p. 33).

Education authorities in several jurisdictions have been working on common professional experience assessments and investigating strategies for strengthening mentors’ capacity to make evidence-based decisions about ITE students’ progress and achievement. Reliability and validity studies of these and other assessments may be useful, and consideration may be given to the development of a national assessment instrument.

The length, timing, supervision and assessment of professional experience constitute some of the most important sources of treatment effects in ITE. These issues should be taken up in development of nationally consistent data profiles as part of the ‘workforce planning’ theme. Two other Horizon 1 opportunities for improving the evidence base on professional experience are selection and training of school practical supervisors, and assessment of professional experience.

Professional experience, Horizon 1

Key question	Research and development opportunities
How should ITE students’ professional experience be supported and assessed?	Development of professional experience assessment instruments, including the possibility of a common national assessment.
	Reliability and validity studies of professional experience assessment instruments.

Building on a classification of professional experience characteristics such as length, timing and assessment, ITE providers will have opportunities in Horizon 2 to document the impact of changes to selection or training of supervisors and students’ professional experience assessments.

Professional experience, Horizon 2

Key question	Research and development opportunities
<p>What is the impact of professional experience on ITE students' development?</p>	<p>What patterns and structures of professional experience have the most impact on ITE students' development, and their scores on professional experience assessments?</p>
	<p>In what ways, and to what extent, do well-trained and selected supervising teachers enhance ITE students' learning?</p>

In Horizon 3 it may be possible to explore empirical links between professional experience and school student achievement in the years beyond ITE students' graduation. In school phases and subjects where annual achievement data are readily available, such as early literacy and numeracy, this could be accomplished through value-added studies of a sample of ITE graduates.

Professional experience, Horizon 3

Key question	Research and development opportunities
<p>Does ITE students' performance on assessments of professional experience predict their later impact on school students' academic achievement?</p>	<p>To what extent do scores on professional experience assessments during ITE predict growth in school students' achievement in the years after ITE students' graduation?</p>
	<p>To what extent do various patterns and structures of professional experience during ITE predict growth in school students' achievement in the years after ITE students' graduation?</p>
	<p>To what extent do treatment effects, such as patterns of professional experience, decay in the years beyond initial registration?</p>

Classroom readiness

The theme that offers the broadest scope for evidence-based research is what *Action Now* calls classroom readiness: student assessment against the Graduate Standards. In papers commissioned by AITSL to explore evidence of the impact of teacher education (Dinham 2015; Gore, 2015; Mayer, 2015), classroom observations, school student surveys, authentic teaching performance assessments and measures of the impact on student learning were all identified as appropriate sources of evidence.

Classroom observations using standardised observation instruments are among the most rigorous sources of evidence of teachers' impact on student learning (CAEP, 2015, p. 39). Such observations can provide consistent, specific, timely, relevant and transparent data for feedback (Goldring *et al* in Gore, 2015). Although many classroom observation measures have been developed, only a few are adequately validated (CAEP, 2015, p. 39) and, as Gore (2015, p. 9) notes, few reflect the particular circumstances and aspirations of Australian schools. Consequently, it may be useful to conduct Australian validation studies of published measures, or develop and validate new Australian classroom observation measures.

Surveys of school students' perceptions have also been recommended as measures of teaching effectiveness. The Gates Foundation *Measures of Effective Teaching* study (2013) found that, in combination with other measures, students' perceptions of teaching effectiveness could predict value-added measures of teacher effectiveness. Student surveys have rarely been used for this purpose in Australia, so it may be useful for researchers to conduct Australian trials of published instruments, or to develop and validate their own student survey instruments.

The potential of capstone teaching performance assessments is identified in all three of the AITSL evidence of impact papers. Teaching performance assessments require students in the final phase of their teacher education to develop structured portfolios that follow a class through a cycle of planning, teaching and assessment. Common components include an unedited classroom teaching video, lesson plans, assessments, evidence of feedback, and reflections on learning. Such capstone teaching performance assessments¹ are now required in many United States jurisdictions. The similar Authentic Teacher Assessment developed at Deakin University has been used since 2010 (Allard, Mayer & Moss, 2013). The Deakin ATA is marked and moderated as part of the final practicum assessment; in the United States, the *edTPA* teaching performance assessments are submitted as digital files and marked on-line, in a national pool. The research opportunities include Australian trials of international teaching performance assessments, development of new assessments and reliability and validity studies of existing assessments.

¹ PACT: the Performance Assessment for California Teachers; *edTPA*, the national version of PACT; and ETS's *Praxis Performance Assessment for Teachers*. See Louden (2015) for a description of these assessments.

Perhaps the most fundamental requirement of teacher education is that it prepares teachers who have an impact on school students' learning. Researchers have often used student growth on standardised assessments of achievement as the measure of impact on students' learning. These analyses, typically called value-added analyses, have been used in other jurisdictions as an indicator of the effectiveness of ITE programs. The CAEP accreditation process in the United States, for example, requires disclosure and analysis of value-added measures of teaching effectiveness provided by state education authorities (2015, p. 33-34). Such data are not routinely available in Australia, partly because the two-year intervals between NAPLAN assessments do not allow attributions of student growth to any particular teacher, and partly because of scepticism about the technical limitations of value-added calculations. Notwithstanding legitimate concerns about high-stakes attribution of NAPLAN score improvements to individual teachers, there may be scope for value-added research on the impact of ITE graduates on student learning outcomes. Small-scale predictive validity studies could be undertaken, for example, in cases where graduates teach in schools that use standardised assessments at the beginning and end of a school year in some grades and learning areas.

The first research horizon in the classroom readiness theme will involve development of a suite of new assessments of teaching quality. These may be new Australian instruments or be based on Australian validation of assessments developed elsewhere.

Classroom readiness, Horizon 1

Key question	Research and development opportunities
<p>How can the ITE students' progress towards meeting the Graduate Standards be assessed?</p>	<p>Development or trials of surveys to measure school students' perceptions of teaching quality.</p>
	<p>Development or trials of observation instruments that can guide feedback to developing ITE candidates and support summative judgements about their classroom readiness.</p>
	<p>Development or trials of authentic teaching performance assessments that can be used to make summative judgements about classroom readiness towards the completion of ITE students' final school practical experience.</p>
	<p>Reliability and validity studies of school student surveys, classroom observation instruments and authentic teaching performance assessments.</p>

All ITE programs have current processes and practices to support their judgements about ITE students' achievement of the Graduate Standards. The development of the three kinds of classroom readiness assessments in Horizon 1 — school student perceptions surveys, classroom observation surveys and authentic teaching performance assessments — would provide opportunities for local and collaborative research into assessment of classroom readiness. It is not proposed that all providers be expected to use all these tools; what they choose to do should reflect local judgements about strengths and weaknesses in ITE programs.

Classroom readiness, Horizon 2

Key question	Research and development opportunities
<p>What is the impact of classroom readiness assessments on ITE students' development?</p>	<p>Are surveys of school students' judgements about teaching quality useful in providing feedback to ITE students as they develop, or in supporting summative assessments of achievement of the Graduate Standards?</p>
	<p>Are classroom observation instruments useful in providing feedback to ITE students as they develop, or in supporting summative assessments of achievement of the Graduate Standards?</p>
	<p>Are authentic teaching performance assessments useful in providing feedback to ITE students as they develop, or in supporting summative assessments of achievement of the Graduate Standards?</p>

If the assessments of teaching quality proposed for development in Horizon 1 are widely used and judged to be useful in by ITE providers in supporting students' development and making judgements about achievement of the Graduate Standards, they will provide a research platform for exploring graduates' subsequent impact on school students' achievement. As was the case in the 'professional experience' theme, where school student outcome data are available providers may wish to undertake value-added studies of a sample of former ITE graduates.

Classroom readiness, Horizon 3

Key question	Research and development opportunities
<p>Does ITE students' performance on assessments of classroom readiness predict their later impact on school students' academic achievement?</p>	<p>To what extent do scores on school student surveys of perception of teaching quality during ITE predict growth in school students' achievement in the years after ITE students' graduation?</p>
	<p>To what extent do scores on classroom observation instruments during ITE predict growth in school students' achievement in the years after ITE students' graduation?</p>
	<p>To what extent do scores on authentic teaching performance assessments during ITE predict growth in school students' achievement in the years after ITE students' graduation?</p>

Workforce planning

Action Now draws attention to weaknesses in national workforce data collection. Although some information on graduate satisfaction, employer satisfaction and employment outcomes will be available from the Australian Government's *Quality in Learning and Teaching* surveys, it would be useful to supplement these surveys with expanded national workforce data collection. With such nationally comparable data collection, more substantial studies of ITE students' post-graduation attrition, retention and employment would be possible.

Concern about supply and demand for specialist teachers suggests a second strand of workforce planning analysis. *Action Now* identified shortages among science, mathematics and languages teachers, but reported that such data is not routinely collected from ITE providers or shared with potential employers. Further development of data protocols and data sharing would be necessary to support research on this issue.

Action Now made several comments about the teacher education workforce, noting the importance of qualification and skill levels of academic staff and the importance of staff involved in the practicum maintaining the currency of their knowledge of school operations. Recent growth in enrolments, combined with the concentration of older age groups in the academic workforce (Bexley, James & Arkoudis, 2011), will provide challenges for the renewal of teacher education in the coming years. Another teacher education workforce issue concerns the demands that may be made on ITE staff as they prepare their students to teach in the schools of the future.

In Horizon 1, the focus of workforce planning projects is to develop nationally consistent data profiles. This is a substantial practical task, requiring collaboration among employers nationally, ITE providers and teacher registration authorities.

Workforce planning, Horizon 1

Key question	Research and development opportunities
What data collection protocols are needed to underpin national teacher workforce planning?	What data should routinely be collected and held on ITE candidates, the ITE programs they have undertaken, and their career progress through graduation, initial registration, employment, full registration and subsequent career stages?

In Horizon 2 there will be opportunities to explore issues concerning the future teacher education workforce such as recruitment, and the skills and experience required to prepare the next generation of teachers.

Workforce planning, Horizon 2

Key question	Research and development opportunities
Who will be added to the ITE workforce and what skills and experiences will they need?	How will the next generation of ITE staff be prepared and recruited?
	What skills and experience are required for effective supervision of ITE students' professional experience?
	What skills and experience are required to prepare ITE students for schools of the future?

In Horizon 3, when the results of the Horizon 1 work on data protocols has flowed through to new nationally comparable data sets, the focus of research on workforce planning can turn to long-term relationships between ITE and the teaching workforce, including considerations of supply and demand, and the relationship between ITE selection and program characteristics and workforce participation.

Workforce planning, Horizon 3

Key question	Research and development opportunities
What is the impact of ITE on recruitment, retention and employment?	What changes are expected in workforce supply and demand over time?
	What are the supply and demand constraints in areas of teaching specialisation and phases of schooling?
	How do characteristics of ITE programs affect employment and retention of graduates over time?

Actions

This Research Agenda is intended as an agenda for initial teacher education in Australia as a whole, and can only be implemented through strong partnerships. AITSL will lead the following actions to implement the agenda.

Encourage Collaboration

Most of this work will have much more impact if it is conducted across initial teacher education providers, at the jurisdiction or national levels. AITSL has an important role to play in brokering and encouraging this collaboration, and ensuring the results are shared widely. To achieve this, AITSL will:

- Lead a project to develop an Australian teacher performance assessment that will allow valid and reliable assessment of teaching performance across initial teacher education providers.
- Identify examples of evidence-based processes for selecting entrants into initial teacher education, and use data generated by the accreditation process to evaluate these.
- Use information generated by the accreditation process to identify effective practices and encourage their dissemination and take up.

Provide access to quality research

It is important that initial teacher education providers in Australia have access to the best available research, both Australian and international. AITSL will take the lead in disseminating research findings. To achieve this, AITSL will:

- Continue to commission and disseminate summaries of the evidence on important issues, and their implications for initial teacher education in Australia.
- Regularly scan and disseminate the major Australian and international research findings on important and emerging issues.
- Use social media and other communications channels to invite engagement with and discussion of research findings.

Advocate for quality initial teacher education research

Initial teacher education research in Australia is funded from a variety of sources, but with little coordination, and often at too small a scale to provide strong evidence on the questions raised in this Research Agenda. Now that we have clear priorities for investigation, AITSL will be in a position to advocate for a more coordinated research effort. To achieve this, AITSL will:

- Work with existing research networks to coordinate research effort and funding applications.
- Advocate to funding bodies for a greater focus on initial teacher education research, to address the priorities identified in this Research Agenda.

Develop data collection protocols and instruments

Much of this Research Agenda depends on establishing more consistent and comprehensive data collections. These may be national or jurisdictional collections, or instruments made available for use on a voluntary basis. To achieve this, AITSL will:

- Develop a blueprint for initial teacher education and teaching workforce data that will include proposals for new data collection.
- Continue to publish the annual *Initial Teacher Education: Data Report*, which will be revised to reflect the data framework outlined in the blueprint.
- Investigate the need for and options to develop nationally available data collection instruments.

Taken together, these actions will form a significant step towards addressing the important research questions identified in this Research Agenda. AITSL calls on all those with an interest in improving initial teacher education to join with us in a more coordinated and targeted national research effort.

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