

Understanding current initial teacher education delivery and identifying opportunities

Project 3

February 2023

This project conducted a review of Australian Initial Teacher Education (ITE) delivery to understand the extent to which ITE programs integrate foundational core content as identified in project 1. This report includes a summary of existing research since 2012 looking at the presence of evidence-based practices in ITE program content. It also includes an analysis of 162 core units from 6 ITE programs to understand the extent to which evidence-based practices are embedded in current ITE in Australia.

The project found that the suggested foundational core content is not being delivered systematically (or at all) in ITE programs. This is consistent both in the existing literature and AERO's content analysis. The literature summary and content analysis also suggest that delivery of foundational core content in ITE has not increased over time despite increased policy/regulatory attention.

Background

The Teacher Education Expert Panel has been established to provide advice on key issues raised in the Report of the Quality Initial Teacher Education Review (QITE) and the National Teacher Workforce Action Plan.

This report has been produced for Project 3 of the Teacher Education Expert Panel, which focuses on whether existing ITE program delivery aligns with what the evidence tells us is the necessary foundational content to deliver confident, effective, classroom-ready graduates (Recommendation 7 from QITE report).

Scope for this report

Project 3 Understanding current ITE delivery and identifying opportunities

Key questions that should be considered when conducting the research:

- What evidence-based practices are currently delivered in Australian ITE
- What are the biggest opportunities to strengthen Australian ITE to deliver effective classroom-ready graduates
- Are new mechanisms required to increase visibility of ITE content? How do other systems monitor ITE content?

The final report should:

- Provide a summary of existing research on ITE course provision of evidence-based teaching practices
- Provide an analysis of current ITE course provision of evidence-based teaching practices, mapped against evidence-based teaching practices and a description of the methodology used
- Provide a summary of findings and identify opportunities for Australian ITE

Purpose

The purpose of this report is to gain insight into the extent to which Australian ITE programs align with what evidence tells us should be included in the core content of ITE. This project draws on the work completed in projects 1 and 2.

Methodology

Two methods were used for this report: a desktop review of the literature and a word content analysis.

Literature summary

A desktop review of existing literature which analyses the delivery of ITE content in Australia was undertaken. This project conducted a literature search to identify published research analysing the content of ITE programs in Australia in the last eleven years. It identified 7 relevant papers.

Content analysis

To supplement the available literature, this project used 'content analysis' on a sample of 6 ITE providers to identify the extent to which foundational core content, as identified in project 1, is currently found in Australian ITE programs.

'Content analysis' is a research method designed to identify and interpret meaning in recorded forms of communication by isolating small pieces of the data (i.e. key words and phrases) that represent broader concepts and then applying a framework to organize this data in a way that can be used to describe a phenomenon. In this project, content analysis of unit overviews was used as an indicator of the presence and extent of foundational core content in existing ITE programs. This method was chosen as it was both do-able in the timeframe and is a similar research method used by other researchers trying to ascertain similar information.

For the content analysis, this report analysed 162 Bachelor of Primary Education core units of 6 Initial Teacher Education providers across Australia. The project identified core units as units which were compulsory for all students enrolled in the ITE program as identified by the providers. Elective units and specialisations were not included in the analysis. The ITE providers were selected based on the following criteria:

1. Website included detailed unit overview
2. Mix of representation of ITE providers across Australia, both in geography, provider size and type
3. Number of students enrolled with the ITE provider
4. Proportion of students in ITE program enrolled as external students

This analysis focused on Bachelor of Education Primary as these programs have the highest proportional enrolments and cover all subject areas, unlike Bachelor of Education Secondary programs.

Table 1: Characteristics of selected ITE providers

ITE Provider	Number of core units	Location	Proportion of external students ¹
Provider 1	30	National university with campuses across Australia	21%
Provider 2	28	WA	51%
Provider 3	28	Vic, G8 university	10%
Provider 4	30	Qld	36%
Provider 5	29	Vic	92%
Provider 6	18	NSW	95%

The findings of the analysis have been de-identified for the purposes of this report to support a focus on the findings as indicative of the provision of ITE across Australia, rather than a focus on individual ITE providers.

AERO conducted the content analysis in 2 stages:

Stage 1: The unit overviews from each ITE provider (as provided on their websites) were analysed by a Microsoft word macro to provide a summary of the most frequent words used across all unit overviews for each ITE program. This analysis provided an overall indication of key word frequency as well as providing insight into any commonly used synonyms that should be incorporated in the stage 2 analysis. This analysis only reported overall word frequency in unit overviews and did not include information on the distribution of these key words across core units.

Stage 2: Individual core unit overviews were analysed in excel to count the number of core units which referenced key words and phrases (Table 2) to provide insight into the distribution of foundational core content (including enabling factors) throughout the programs as identified in project 1. An analysis was also undertaken of some key phrases known to be associated with practices lacking a strong evidence-base² and neuromyths.

¹ Based on 2020 Higher Education Statistics published by the Department of Education: <https://www.education.gov.au/higher-education-statistics/resources/student-enrolments-pivot-table>

² These practices lack a strong evidence-base when assessed against [AERO's Standards of Evidence](#).

Table 2: Key words and phrases searched

Brain and Learning	Effective pedagogical practice	Classroom management	Enabling factors	Practices lacking a strong evidence-base
'cognitive load'	'explicit'	'classroom management'	'Aboriginal and Torres Strait Islander'	'learning styles'
'neuroscience'	'phonics'	'behaviour management'	'cultural responsiveness'	'inquiry learning'
'retrieval'	'phonemic'	'routines'	'family engagement'	'inquiry-based'
'memory'	'formative assessment'	'high expectations'	'diverse learners'	
'cognition'	'response to intervention'		'disability'	

Limitations

There is limited research reviewing the content of Australian ITE programs. Most published available research analyses primary teaching preparation and is reliant on publicly available information only. Publicly available data on ITE provider websites does not always reflect all content covered within ITE programs.

These limitations also apply to the content analysis conducted for this project which relied on information published on ITE provider websites and focused on primary teaching programs only, and only looked at unit overviews. Given the time constraints to undertake this analysis, supplementary information was not sought from ITE providers or Teacher Registration Authorities.

Only a few key phrases from each foundational core content area (as identified in project 1) were selected and searched for within the publicly available unit overviews. An assumption was made that these were representative of the phrases that should appear if foundational core content is being taught.

While efforts were made to collect data from a diverse range of ITE providers, the content analysis should not be considered a comprehensive audit and findings should not be seen as necessarily representative of all ITE programs.

Findings

Literature summary

Key findings from Australian research on ITE content

1. ITE programs do not include sufficient content focussed on the key evidence-based practices required for pre-service teachers to become effective in the classroom.
2. ITE programs often include teaching practices that research suggests are less effective.
3. There is significant variability in the content across ITE programs, with some (but not enough) including content that aligns with evidence-based practices

Research reviewing Australian ITE program content found that ITE programs in Australia do not adequately cover key concepts and pedagogical practices required to prepare pre-service teachers for the classrooms (more detail available at **Appendix A**). For example:

1. Analysis of mathematics units in undergraduate primary education programs found only 2 mentions of explicit instruction across 90 mathematics unit outlines (Fahey et al 2021).
2. Analysis of Early Childhood Education and Care Education ITE programs found that they rarely include content regarding the structure of language and code-related skills or on evidence-based strategies to foster children's oral language and emergent literacy development (Weadman et al 2021).
3. Research into preparation to teach reading, found that only 4% of ITE literacy units had a specific focus on early literacy and nearly 70% of literacy units did not refer to any of key concepts required for the most effective reading instruction like phonemic awareness or phonics (Buckingham and Meeks 2019).
4. Research into the prevalence of classroom and behaviour management (CBM) in Australian undergraduate primary teacher education programs found that evidence-based CBM practices were not commonly included in either models of CBM covered, or in the prescribed texts used to support units (O'Neil and Stephenson 2014).

Reports completed by the then NSW Board of Studies, Teaching and Education Standards (BOSTES) on pre-service teacher preparation in early literacy instruction and primary mathematics in NSW broadly align with this research. BOSTES found that:

1. There is significant variation in the content and time spent teaching early literacy and mathematics skills to preservice teachers across ITE providers (BOSTES 2014 and 2016).
2. The extent to which ITE providers teach the integrated, explicit and systematic approach to the teaching of reading as recommended by international and national research evidence was unclear (BOSTES 2014).

3. In many cases it was unclear if pre-service teachers were equipped with the necessary skills to teach literacy (BOSTES 2014).
4. A number of ITE providers failed to sufficiently identify pedagogical approaches for the delivery of mathematical content and did not reference the relevant mathematics syllabus (BOSTES 2016).

The BOSTES reports were based on accreditation material and supplementary interviews with key personnel from ITE providers which provide a more robust basis for insight into the content and preparation of pre-service teachers in NSW than the other research analysed, which is based only on publicly available information such as unit outlines, learning outcomes and prescribed texts.

Taken together this research highlights a persistent underrepresentation of core foundational content required to prepare pre-service teachers to be effective in the classroom.

Content analysis

Across the 6 ITE providers analysed, there was no evidence that any provider was consistently teaching the foundational core content as articulated in project 1³ (i.e. brain and learning, effective pedagogical practice, classroom management), with only 14 of 162 units including key phrases relating to the suggested foundational core content (refer table 3 below):

1. No providers referred to any of the key phrases searched in relation to 'Brain and Learning' foundational content in their core unit overviews.
2. Five providers had between 1 and 4 core units apiece that referred to specific 'Effective pedagogical practice' foundational content. One provider did not include any reference to these practices.
 - a. For 'explicit instruction', 1 provider included key phrases in 2 core units and 2 providers included key phrases in 1 unit. Three providers did not include any phrases related to 'explicit instruction'.
 - b. For 'formative assessment', 2 providers included the key phrase in 1 unit each. Four providers did not include any phrases related to 'formative assessment'.
 - c. For 'phonics' and 'phonemic awareness', 1 provider included key phrases in 2 units, 2 providers included key phrases in 1 unit. Three providers did not include any key phrases related to 'phonics' or 'phonemic awareness'.⁴

³ It should be noted that this project is not suggesting that where ITE programs do not include key phrases relating to mandatory content in their unit overviews that these programs do not adhere to the ITE program accreditation standards or jurisdictional requirements.

⁴ In 2020, AITSL updated the Accreditation of initial teacher education programs in Australia: Standards and Procedures to include requirements for key evidence-based practices in early reading like phonics. Only 2 of the programs analysed in this project were accredited after 1 January 2020. One of these providers referred to 'phonics' and 'phonemic' in 1 unit overview. The other provider did not refer to these phrases in any of their core unit overviews however, this is not suggesting that the program does not adhere to the Australian standards, just that phonics/phonemic awareness did not appear in any core unit overviews.

- d. For ‘response to intervention’, 1 provider included the key phrase in 1 unit. Five providers did not include any key phrases related to ‘response to intervention’.
- 3. Two providers had 1 core unit each which referred to key phrases searched in relation to ‘Classroom Management’ foundational content. No other providers referred to any of the key phrases searched related to Classroom Management in their core units.

Key phrases associated with the ‘Enabling factors’ were significantly more prominent, with every provider (except for 1) referring to both diverse learners and Aboriginal and Torres Strait Islander students. Key phrases that related to ‘Enabling factors’ were referred to almost twice as often as other foundational core content, although it is worth noting that family engagement was not referred to by any of the 6 ITE providers.

Table 3: The number of core units that referred to key phrases related to foundational core content

ITE provider	Brain and Learning	Effective pedagogical practice	Classroom Management	Enabling factors
Provider 1	0	4	0	10
Provider 2	0	0	0	3
Provider 3	0	1	0	3
Provider 4	0	1	1	7
Provider 5	0	2	0	1
Provider 6	0	2	1	0
Total	0	12	2	24

This project also searched for key phrases related to practices lacking a strong evidence-base, as a comparison⁵ (refer table 4):

- 1. Two providers did not refer to any of the key phrases searched in relation to practices lacking a strong evidence base.
- 2. Three providers referred to key phrases searched in relation to ‘inquiry-based learning’ in at least 1 core unit, with 1 provider referring to key phrases in 3 core units.

⁵ Note, the project reviewed the context in which these key phrases were referred to and found that in all instances these practices were mentioned as potential or preferable teaching strategies (rather than strategies to be avoided or not used).

3. One provider included key phrases searched on ‘learning styles’ in 1 core unit.

Table 4: The number of units that referred to practices lacking a strong evidence-base

ITE providers	Inquiry-based learning	Learning styles
Provider 1	1	0
Provider 2	0	1
Provider 3	3	0
Provider 4	2	0
Provider 5	0	0
Provider 6	0	0
Total	6	1

A detailed breakdown of number of units referring to the key phrases is available at **Appendix B**.

Discussion

Based on the literature summary and content analysis, this project found that foundational core content is not being delivered systematically (or at all) in ITE programs. These findings reaffirm the Quality Initial Teacher Education (QITE) Review's findings that certain key areas in the preparation of teachers are not based on the latest evidence (QITE 2022).

AERO notes that its content analysis of 6 ITE programs is brief and is not a comprehensive reflection of all ITE programs or providers. However, the consistency in findings with previous research, including research by BOSTES which accessed a far broader range of materials than this study (including confidential accreditation materials) provides greater confidence in this project's findings.

AERO also notes the potential criticism that the content analysis only looks at unit overviews, and that these unit overviews may not provide enough detail to accurately assess whether foundational core content is being taught. This may in fact be the case, but this also raises the question as to why foundational core content is not more explicitly stated or brought to the fore in publicly available core unit overviews. As stated by BOSTES's Learning to Teach Primary Mathematics report (2016): "programs that teach the necessity of competent lesson planning but rely on vague unit outlines themselves are inadequate."

In addition to the above findings and potential limitations, it's also worth noting that this project found that even when foundational core content is included in ITE programs, it is at times being taught alongside practices lacking a strong evidence base. For example, O'Neil and Stephenson (2014) found that ITE programs present classroom and behaviour management practices both with and without research support as equivalent. AERO's content analysis also found a lack of program coherence, for example, 1 ITE program emphasised practices like explicit instruction within 1 core unit, but referred to inquiry-based learning in 3 other core units.

Beyond the need to increase the inclusion of foundational core content, ITE students also need to be given the opportunity to apply and practice these skills (as outlined in Project 2). The Teacher Performance Assessment (TPA) could be an opportunity to encourage the integration and implementation of foundational core content into ITE programs. If TPAs were required to assess foundational core content this would support the inclusion of this content into ITE programs and ensure that ITE students were required to demonstrate that they could apply them in a classroom setting.

Finally, it is worth considering the review cycle in which the foundational core content could or should be subject to. That is, how often should this foundation core content be reviewed and by whom? While this was not a core consideration of this particular project, it is a relevant question to ask and one to consider. High performing international systems such as Singapore have processes in place to ensure that new research findings are regularly embedded back into the system. For example, Singapore spends almost \$10 million a year (a substantial portion of the education

budget) on education research, conducted mostly at the National Institute of Education (NIE). The NIE is the sole provider of ITE in Singapore and is consistently recognised as one of the highest-performing ITE providers in the world (Invargson et al 2014). One option for Australia could be the formation of a national expert panel to focus on assessing foundational core content areas on a rotating basis to ensure each foundation core content area incorporates the latest and most up-to-date research. The makeup of this national expert panel would change annually based on the focus of the core content for that year. Using this system each foundational core content area (i.e. brain and learning, effective pedagogical practice, classroom management and enabling factors for learning) would be reviewed once every 4 years.

Why does this matter?

More deliberate and systematic inclusion of essentials skills and knowledge can increase teacher confidence, increase teacher use of effective practices and ultimately student outcomes.

Research suggests that Australian teachers are less confident in the core skills required to be an effective teacher. According to TALIS, Australian teachers appeared less confident in their teaching in each of the core areas: subject content, pedagogy and classroom practice, with their confidence in classroom and behaviour management particularly low (Thomas and Hillman 2019).

Previous research found a significant positive correlation between measures of educator's content knowledge and knowledge for practice with classroom practice as well as a positive correlation between classroom practice and children's phonological awareness learning (Piasata et al 2019).

According to an analysis of TALIS data, for most countries, teachers who indicated that their ITE included training in student behaviour and classroom management reported higher levels of self-efficacy in classroom management compared to teachers whose ITE did not include this content (Thomas and Hillman 2019).

Considerations for the panel

The expert panel should consider the extent to which existing accreditation and regulatory processes are sufficient to ensure the integration of foundational core content into ITE programs. Specifically, the panel could consider:

Are there ways in which existing ITE regulatory and reporting mechanisms could be leveraged to increase the coverage of foundational core content?

This could include:

- National consistency in Teacher Regulatory Authorities (TRA) measurement of ITE program content based on tighter regulation of non-negotiable foundational core content identified in project 1.
- A new national expert committee or expanded Expert Advisory Group to advise the TRAs and ITE providers on the inclusion of core practices.
- Enhance data collection and public reporting of key evidence-based content delivery. For example, an annual rotating focus by an expert national panel (as above) on 1 key core content area, producing a comparative report based on ITE providers' existing reporting requirements.
- Explore benchmarks for ITE providers on integrating evidence-based practices within programs, which must at least minimally be applied for regulatory purposes

How can ITE providers be required to be more transparent regarding program design and coverage of foundational core content?

This could include:

- Self-reporting on core content coverage within ITE programs against the accreditation standards or measures of program effectiveness
- Releasing findings from TRA accreditation processes, particularly where programs exceed minimum standards

Can the TPA be used to provide confidence to schools and systems that graduate teachers can apply foundational core content in classrooms?

This could include greater standardisation of TPAs:

- with the introduction of a single high quality TPA across all ITE providers
- leveraging existing QITE recommendations to encourage cross institutional moderation

References

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Appendix A: Summary of research investigating ITE provision in Australia

Report	Author(s)	Findings
Preparation to teach primary mathematics		
<p>Failing to teach the teacher: An analysis of mathematics Initial Teacher Education (2021)</p>	<p>Glenn Fahey, Jordan O'Sullivan, and Jared Bussell</p>	<p>The study analysed 90 mathematics units from the Bachelor of Education (Primary) programs of 31 Australian universities to assess the extent to which ITE prepared primary teachers to teach using evidence-based teaching practices. The study analysed publicly available unit information and prescribed texts using key word searches that relate to different teaching models (inquiry-based learning, explicit instruction) to assess the relative emphasis placed on the models.</p> <p>The study found that:</p> <ol style="list-style-type: none"> 1. ITE courses do not provide maths teachers the tools to employ explicit instruction when teaching mathematics. Of those universities studied, 27 emphasised constructivist approaches, while 4 were either ambiguous or emphasised a range of teaching approaches. No mathematics units from any of the universities in the analysis appeared to have a clear emphasis on explicit instruction. 2. The study also found that explicit instruction is not sufficiently practiced in Australian mathematics with Australian teachers more likely to employ constructivist-inspired teaching practices than teachers in high performing Asian countries. <p>The authors state that:</p> <ol style="list-style-type: none"> 3. Greater practice of explicit instruction would lift student achievement in mathematics.

Report	Author(s)	Findings
		<p>Effective teaching doesn't employ explicit instruction alone, but a great deal of explicit instruction is often necessary before students have sufficient expertise for constructivist approaches to be introduced.</p> <p>4. Ineffective ITE places excess demand on costly and limited professional development. Teachers who are underprepared for the classroom during ITE later require professional development to meet their needs.</p> <p>And they recommend that:</p> <p>5. Policymakers must ensure that evidence-based practices are included in ITE for prospective mathematics teachers. An effective Primary ITE programme would provide a graduate teacher with at least 1 unit dedicated to explicit instruction in the context of mathematics, and provide the tools to design and deliver curriculum and explicit instruction lessons that manage cognitive load and embed knowledge in students' long-term memories using strategies that are aligned with current evidence.</p>
<p>Learning to teach primary mathematics (2016)</p>	<p>BOSTES</p>	<p>As part of NSW's Great Teaching, Inspired Learning strategy, BOSTES reviewed the accreditation materials of all NSW primary ITE programs. This included 36 individual undergraduate ITE programs, 10 postgraduate programs and a total of 65 units of study focussed on primary mathematics teaching preparation. The aim of the report was to understand how pre-service teachers were being prepared to teach numeracy and mathematics.</p> <p>BOSTES found that:</p> <ol style="list-style-type: none"> 1. Some ITE programs lack clarity in their approach to pedagogy and assessment in primary mathematics teaching, or where it is present at a program level, it is not consistent with the pedagogical practices and assessments used in individual units. 2. ITE providers do not identify the pedagogical approach taken to the delivery of the mathematical content. The details included in unit summaries falls short of desirable professional practice of putting forward a clearly developed design for the preparation of competent graduates.

Report	Author(s)	Findings
		<p>3. There is evidence in the unit summaries of some programs, of excessive reliance on assessment tasks which appeared to be content exams, with little detail about the focus or purpose of such exams and minimal connection evident with pedagogical practice.</p> <p>BOSTES recommended that minimum requirements and expectations for primary mathematics and numeracy be clarified. This should include:</p> <ol style="list-style-type: none"> 1. Increased emphasis on the key role of ‘working mathematically’ (5 interrelated components – communication, problem-solving, reasoning, fluency and understanding) in underpinning the core content of the mathematics units. 2. A developmental approach be taken through and across the stages of the 3 content strands of the syllabus (Number and Algebra, Measurement and Geometry, Statistics and Probability).

Preparation to teach early literacy

<p>Australian Early Childhood Teachers’ Training in Language and Literacy: A Nation-Wide Review of Pre-Service Course Content (2021)</p>	<p>Tessa Weadman, Tanya Serry and Pamela Snow</p>	<p>This study aimed to understand the extent to which key evidence-based practices and content related to oral language and emergent literacy skills is included in Early Childhood Education and Care (ECEC) ITE programs. The study conducted a qualitative content analysis to assess the presence of oral language and emergent literacy content across 84 Australian ECEC ITE programs. The authors analysed online unit information including subject descriptions, learning outcomes and expected professional skills for students.</p> <p>The authors provided a summary of previous research including:</p> <ol style="list-style-type: none"> 1. Pre-schoolers display enhanced emergent literacy learning when taught by Early Childhood Teachers (ECT) with higher content knowledge (Piastra et al 2020). However, evidence suggests that ECTs’ knowledge in these domains is low. 2. Carson and Bayetto (2018) found that ECTs overestimated their phonological awareness knowledge with just over three-quarters of ECTs rating their knowledge as adequate to high, despite the mean score on a test of phonological awareness being 49%. <p>The study found:</p> <ol style="list-style-type: none"> 1. ECEC ITE programs do not prominently feature core content on oral language and emergent literacy skills. This includes the structure of language and code-related skills
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Report	Author(s)	Findings
		<p>including phonological awareness and concepts of print, or evidence-based strategies to foster children’s oral language, such as dialogic book reading, and intentional adult-child interactions.</p> <p>2. More than half of the programs reviewed by the study did not refer to key emergent literacy content.</p>
<p>Shortchanged: Preparation to teach reading in Initial Teacher Education (2019)</p>	<p>Jennifer Buckingham and Linda Meeks</p>	<p>This report aimed to understand the extent to which evidence-based early literacy instruction was included in Australian ITE. The authors analysed unit outlines, summaries and/or learning outcomes, prescribed and recommended texts, and the unit coordinator’s expertise in early literacy for 116 different core literacy units within 66 undergraduate primary ITE programs.</p> <p>The study found that</p> <ol style="list-style-type: none"> 1. Only 5 (4%) of the 116 literacy units reviewed had a specific focus on early reading instruction or early literacy. In a further 30 (26%) of the unit outlines, early reading or early literacy was mentioned in some form but was included with other literacy content. 2. In 81 (70%) of the 116 literacy units reviewed, none of the 5 essential elements of effective evidence-based reading instruction were mentioned in the unit outlines. All 5 essential elements were referred to in only 6% of literacy unit outlines. 3. Thirteen (15%) of the lecturers and unit coordinators that could be identified had specific expertise in early reading instruction or literacy, most with a particular interest in early literacy development among Indigenous and other children from non-English speaking backgrounds. Forty-seven (55%) had research interests and expertise in other aspects of literacy, most often digital and multi-modal literacies. Twenty-five (30%) of the literacy lecturers or unit coordinators had research interests and expertise in areas other than literacy, such as maths or music. 4. A review of the content of the 6 most prescribed textbooks found that none contained sufficiently accurate and detailed content that would allow graduate teachers to use effective, evidence-based instruction, and many contained information that was inadequate and/or misleading
<p>Literacy Learning in the Early Years (2014)</p>	<p>BOSTES</p>	<p>As part of NSW’s Great Teaching, Inspired Learning strategy, BOSTES reviewed all NSW primary ITE programs. This included 68 individual ITE Masters and undergraduate courses programs from 14 providers to understand how teaching early literacy is incorporated into ITE programs.</p>

Report	Author(s)	Findings
		<p>The material analysed included accreditation documentation and supplementary information from ITE providers websites and consultations with key personnel.</p> <p>BOSTES found that</p> <ol style="list-style-type: none"> 1. ITE providers accreditation information lacked clarity about ITE providers approaches to the teaching of reading. Following consultation with ITE providers, BOSTES was still unable to clearly assess the extent to which ITE programs take the integrated, explicit and systematic approach to the teaching of reading as recommended by international and national research evidence. 2. There is considerable variation across providers in the amount of program time spent on literacy components and in the emphasis on reading assessment and remediation strategies. The balance between theory and practice is also unclear. 3. Assessment of primary initial teacher education students' knowledge, understanding and skills for teaching literacy, and for teaching reading, varies considerably between providers. In many cases, it would be difficult to make a confident judgement about students' readiness to teach literacy/reading 4. BOSTES had significant concerns regarding the knowledge, understanding and skills for the explicit and systematic teaching of literacy/reading in the early years of current primary teachers. <p>BOSTES recommended that core essential content for all literacy programs should be identified in course approval requirements. Given the critical importance of developing effective reading skills, essential content should include the explicit and systematic teaching of phonemic awareness, systematic phonics instruction, how to assess reading, the analysis of reading assessment/ data and monitoring student progress in reading.</p>

Classroom and Behaviour Management preparation

Evidence-Based Classroom and Behaviour Management Content	Sue O'Neill and Jennifer Stephenson	The authors aimed to provide insights on pre-service teacher preparation in classroom and behaviour management (CBM), based on the first national survey of Australian primary pre-service teacher educators coordinating units and programmes with CBM content. This study analysed the prevalence of evidence-based classroom management practices in undergraduate primary ITE programs. It reviewed prescribed texts and common classroom and behaviour management (CBM) models reported by CBM unit coordinators.
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Report	Author(s)	Findings
<p>in Australian Pre-service Primary Teachers' Coursework (2014)</p>		<p>The study outlined previous research which found:</p> <ol style="list-style-type: none"> 1. Beginning teachers feel that they require more training and development in CBM. (Department of Education, Science and Training, 2006) 2. In Australia, problems in managing student behaviour have been linked to beginning teacher burnout, attrition, and intention to leave among teachers. (Goddard and Goddard, 2006; Meister and Jenks, 2000; Rollin et al, 2008) 3. Effective classroom management practices can have a major impact on the academic achievement of students. (Hattie, 2009) <p>The study found:</p> <ol style="list-style-type: none"> 1. Only 18 out of 55 common CBM practices used by Australian beginning primary teachers were found to be effective in research. 2. ITE programs present practices both with and without research support as equivalent, suggesting that unit instructors may not provide additional information to trainee teachers about which practices are more likely to be effective. 3. Both unit content and prescribed texts may not provide clear guidance to trainee teachers about which practices and models have substantial research support for their effectiveness. 4. CBM models presented in units and prescribed texts contain many practices, and some models lack evidence for their effectiveness, with only 1 model (PBIS) taught in an ITE program containing all 18 practices identified as having research support
<p>Classroom behaviour management (CBM) content in Australian undergraduate primary teaching programmes (2012)</p>	<p>Sue O'Neill and Jennifer Stephenson</p>	<p>The authors aimed to understand the extent to which CBM content is included in Australian ITE. This study conducted a survey of Australian primary pre-service teacher educators coordinating units and programmes with CBM content, with participation from 25 primary ITE providers, providing information on 102 of the 118 units with CBM content. 87 of the CBM units were core content and 15 were elective units.</p> <p>The study found:</p> <ol style="list-style-type: none"> 1. Units on CBM were offered in 68% of ITE programs and embedded in 96% of programs. 2. Only 26 of the 102 units were standalone units on CMB while 76 embedded CBM content in other units.

Report	Author(s)	Findings
		<ol style="list-style-type: none"> 3. CBM content included in unit courses varied significantly with a range of different CBM models taught, this could number between 1 to 23 different CBM models taught in a single unit. 4. More than half (57.9%) of the stand-alone units and only 20% of embedded units were coordinated by an academic with stated CBM research interests. Units coordinated by an academic with CBM research interests contained more hours and included research-based models more often than those without CBM research interests, although they still included non-research-based models.

Appendix B: Detailed breakdown of content analysis and the number of core units referencing key phrases

Table a: Number of units referring to 'Brain and learning' key phrases

	'cognitive load'	'neuroscience'	'retrieval'	'memory'	'cognition'
ITE Provider 1	0	0	0	0	0
ITE Provider 2	0	0	0	0	0
ITE Provider 3	0	0	0	0	0
ITE Provider 4	0	0	0	0	0
ITE Provider 5	0	0	0	0	0
ITE Provider 6	0	0	0	0	0
Total	0	0	0	0	0

Table b: Number of units referring to ‘Effective pedagogical practices’ key phrases

	‘explicit’	‘formative assessment’	‘phonics’	‘phonemic’	‘response to intervention’
ITE Provider 1	2	0	1	1	1
ITE Provider 2	0	0	0	0	0
ITE Provider 3	1	1	0	0	0
ITE Provider 4	1	1	0	0	0
ITE Provider 5	0	0	1	2	0
ITE Provider 6	1	0	1	0	0
Total	5	2	3	3 ⁶	1

Table c: Number of units referring to ‘Classroom management’ key phrases

	‘classroom management’	‘behaviour management’	‘routines’	‘high expectations’
ITE Provider 1	0	0	0	0
ITE Provider 2	0	0	0	0
ITE Provider 3	0	0	0	0
ITE Provider 4	1	0	0	0
ITE Provider 5	0	0	0	0
ITE Provider 6	0	1	0	0
Total	1	1	0	0

⁶ Two of the units that reference the phrase ‘phonemic’ overlap with units that refer to the phrase ‘phonics’. Only 1 of these 3 units is an additional unique unit that refers to the key phrase ‘phonemic’. Hence, there are 12 unique units overall that refer to these effective pedagogical practices.

Table d: Number of units referring to the ‘Enabling factors’

	‘Aboriginal and Torres Strait Islander’	‘cultural responsiveness’	‘family engagement’	‘diverse learners’	‘disability’
ITE Provider 1	5	0	0	3	2
ITE Provider 2	1	0	0	1	1
ITE Provider 3	1	0	0	1	1
ITE Provider 4	2	0	0	4	1
ITE Provider 5	1	0	0	0	0
ITE Provider 6	0	0	0	0	0
Total	10	0	0	9	5

Table e: Number of units referring to practices lacking a strong evidence-base

	‘learning styles’	‘inquiry learning’	‘inquiry-based’
ITE Provider 1	0	1	0
ITE Provider 2	1	0	0
ITE Provider 3	0	0	3
ITE Provider 4	0	0	1
ITE Provider 5	0	0	0
ITE Provider 6	0	1	0
Total	1	2	4