

Sample Initial Teacher Education Program Outlines: Reading Instruction

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Introduction to Sample Initial Teacher Education Program Outlines

The suite of three sample Initial Teacher Education (ITE) program outlines clearly indicate and incorporate the mandatory content requirements for English/literacy and early reading instruction for undergraduate and postgraduate primary initial teacher education programs.

These requirements are detailed in the national policy, [*Accreditation of initial teacher education programs in Australia – Standards and Procedures*](#) (Standards and Procedures), Schedule 1 for Program Standard 4.2.

These outlines aim to provide examples of how ITE providers could meet the new requirements in the Standards and Procedures to strengthen graduate teachers' capacity to teach reading instruction, by addressing evidence-based practice across the following elements: phonemic awareness, phonics, fluency, vocabulary, comprehension and oral language.

The sample program outlines and the modules comprising them are not limited to phonemic awareness, phonics, fluency, vocabulary, comprehension and oral language, but also cover other topics typically covered in English/literacy programs and in the Australian Curriculum: English. In considering the additional topics, the same standard of evidence-based practice was applied while acknowledging that not all decisions in English/literacy education can be evidence-based.

Rapid reviews of evidence were performed in each topic following a protocol adapted from systematic reviews. These rapid reviews were performed in three databases – ERIC, EBSCOHost, and PsycInfo – and were initially limited to peer-reviewed publications since 2000. In many topics, the initially identified papers lead to identifying other materials that were deemed relevant to include. The main goal of the rapid reviews was to find the best available evidence for different educational practices that could be used to design sample ITE programs. The main evidence being sought was that pertaining to classroom studies with measurable student outcomes. In other words, studies that examined practices implemented by teachers and that measured oral language, reading, or writing development in primary school were prioritised. Further, not all evidence was treated as equal. When a sufficient amount of high-quality evidence on measurable student outcomes is available, it is frequently summarised either in meta-analyses or in systematic reviews that both aim to capture all evidence pertinent to the questions they examine, and explicitly explain how the evidence was located and selected for inclusion. As such, they are the most transparent evidence summaries available for many areas of reading and writing research. Meta-analyses and systematic reviews were given a priority over individual studies in the rapid reviews. When sufficient meta-analyses or systematic reviews existed on the effectiveness of educational practices, individual studies were not considered for those practices.

For some practices (for example, the effect of wide reading on reading fluency), it was not possible to locate meta-analyses or systematic reviews and, subsequently, individual studies were examined. Because priority was given to measurable student outcomes, randomised controlled trials and other

experimental studies that produce numerical estimates of effectiveness of the tested practices were prioritised over qualitative studies that produce verbal descriptions. In all instances, at least two demonstrations of effectiveness produced by independent research groups were sought to avoid inclusion of results that it may not be possible to replicate; a common problem in education research. The attached modules also include as resources many qualitative studies that provide detailed descriptions of effective practices as implemented by teachers in their classrooms.

Not all educational choices are evidence-based, and some evidence-based choices may be open to various implementations. In those instances, the social justice principles espoused in the Australian Curriculum: English served as guidance. Given the reported high levels of inequality in the Australian primary education system, it is critical for the intellectual and economic viability of Australia to promote evidence-based practices that reduce the differences in student outcomes attributable to wealth, location of the school, or to children's home language, disability status, or cultural background. It should be noted, however, that at no point in preparing the modules included in this document was there a requirement to make a choice between evidence-based effective practice and a socially just practice – educational practices with the most evidence to support them also seem to be, by and large, the socially just practices that can reduce educational inequality.

The evidence used comes exclusively from countries where children learn to read and write English. This choice is based on three observations: (1) among alphabetic orthographies, English is an outlier in many aspects, and therefore it is not always easy to generalise findings from other alphabetic orthographies to children learning to read and write English; (2) there is a vast amount of reading and writing research in English speaking countries with a long history, and that reduces the need to rely on studies in different orthographies; and (3) the evidence is clear that all children, irrespective of their background, diverse ability or home country, learn to read and write English the same way. There are no different “learning styles” or routes to competent early reading and writing skills. While some of the contexts and strengths children bring to the task of learning to read and write English differ, to succeed in school all children will need to learn to understand the alphabetic principle, grapheme-phoneme correspondences and grammar, among other components covered in the attached modules. The rate at which they make progress, the supports they need to excel and literature they are exposed to can vary, but the basic learning tasks remain the same. For these reasons, the weight of evidence has been privileged over the location where it was collected in most modules attached to this document.

Finally, the sample ITE program outlines in this document are divided into smaller units called modules to maximise the flexibility of their use. The outlines include an example of a separate course in early reading instruction now required for accreditation, and they include several examples of how the same requirement can be met by embedding the relevant modules into different courses. Further, the modules were designed for either online or face-to-face delivery, and they do not include information on how to teach the suggested content or assess ITE students' learning of the content. Instead, the modules describe what evidence-based content could be covered for each topic, what the tutorials could focus on, and what evidence was used to decide on the content. Most modules also include some additional resources for course instructors, some of which could be used with students. It should be noted that these sample programs were designed as reference materials for ITE providers and are not mandated for use. As the sample program outlines show, the modules can be offered as stand-alone units, or they can be selectively combined into larger courses. As the length of courses and the way credits are counted vary widely across the country, a ten-point system where 10 is equal to 1/8th of Equivalent Full-Time Student Load (EFTSL) was used. In this point system, an undergraduate entry program is required to include 40 points (equal to one half a year of EFTSL), 10 of which focus on early reading instruction, whereas a graduate entry program is required to include 30 points (with the same requirement for early reading instruction). It is assumed that all existing ITE programs have components that they want to keep offering as is, and hoped that this point system

allows the program planners to decide how much and what additional content they may want to adapt to meet the new accreditation requirements. To further assist decision making, the content of the modules (the tutorials and learning content) has been mapped against the Australian Professional Standards for Teachers (APST) on the next page. Please note that once ITE providers include assessment tasks, this may result in additional APST focus areas being identified, particularly for Standards 3, 4 and 5, where professional knowledge is put into practice.

Mapping Australian Professional Standards for Teachers across the modules

Module	1.1.1	1.2.1	1.3.1	1.4.1	1.5.1	1.6.1	2.1.1	2.2.1	2.3.1	2.4.1	2.5.1	2.6.1	3.1.1	3.2.1	3.3.1	3.4.1	3.5.1	3.6.1	3.7.1	4.1.1	4.2.1	4.3.1	4.4.1	4.5.1	5.1.1	5.2.1	5.3.1	5.4.1	5.5.1
1	X	X	X		X	X	X				X														X				
2	X	X	X	X	X					X	X										X								
3	X	X	X				X	X			X																		
4	X	X			X		X	X			X			X	X	X					X								
5	X	X					X				X																		
6	X	X					X				X																		
7	X	X					X				X																		
8	X	X	X		X	X	X				X																		
9	X	X	X		X		X	X	X		X		X	X	X	X					X							X	
10	X	X					X	X	X		X	X	X	X	X	X					X				X			X	
11	X	X			X		X	X	X		X		X	X	X	X					X				X			X	
12	X	X	X		X		X	X	X		X		X	X	X	X					X				X			X	
13	X	X			X		X	X			X	X	X	X	X	X					X				X			X	
14	X	X			X		X	X	X		X		X	X	X	X					X				X			X	
15	X	X	X		X	X	X	X	X		X		X	X	X	X					X				X			X	
16	X	X			X		X	X			X				X						X								
17	X	X					X	X			X		X	X	X						X								
18	X	X					X		X		X						X				X				X	X	X	X	
19	X	X					X	X			X			X	X	X					X								
20	X	X					X	X			X				X	X	X				X								
21	X	X					X	X			X				X	X	X				X								
22	X	X					X	X	X		X	X				X	X				X								
23	X	X	X		X		X	X			X		X	X	X	X				X	X								
24	X	X	X	X	X	X	X	X			X		X	X	X	X					X								
25	X	X					X				X			X	X	X					X								
26	X	X					X				X			X	X	X					X								
27	X	X					X	X			X			X	X						X								
28	X	X					X	X			X			X	X	X					X								
29	X	X					X	X			X			X	X	X					X								
30	X	X			X		X	X			X			X	X	X					X								
31	X	X	X		X		X	X			X			X	X	X					X								
32									X			X						X							X		X	X	X

Summary Table of Modules

Module	Literacy modules	Year	Prerequisites	Weight
3.	Oral Language and Vocabulary	any		1 to 2
4.	Introduction to Phonemic Awareness	any	M3	.5 to 1
5.	Introduction to Phonics	any	M4	.5 to 1
6.	Introduction to Fluency	any	M5	.5 to 1
7.	Introduction to Comprehension	any	M6	.5 to 1
8.	Introduction to Spelling	any	M5	.5 to 1
9.	Oral Language: Teaching and Assessment	2, 3	M3	1 to 2
10.	Vocabulary: Teaching and Assessment	2, 3	M3	1 to 2
11.	Phonemic Awareness: Teaching and Assessment	2, 3	M4	1 to 2
12.	Phonics: Teaching and Assessment	2, 3	M5	2 to 3
13.	Fluency: Teaching and Assessment	2, 3	M6	1 to 2
14.	Comprehension: Teaching and Assessment	2, 3	M7	2 to 3
15.	Spelling: Teaching and Assessment	2, 3	M8	1 to 2
16.	Learning to Write	any	M3	1 to 2
17.	Writing to Express Learning and Ideas	any	M16	2 to 3
18.	Writing Feedback and Assessment	2, 3	M17	1 to 2
19.	Knowledge about Grammar and Text	any	M3	3 to 4
20.	Visual Literacy	2, 3, 4	M3-M14	1 to 2
21.	Multimodal Literacy	2, 3, 4	M3-M14	1 to 2
23.	Language and Literacy Development for EAL/D Learners	2, 3, 4	M3-M14	1 to 2
25.	Children's Literature F-2	2, 3, 4		2 to 3
26.	Children's Literature 3-6	2, 3, 4		2 to 3
27.	Handwriting and Keyboarding	any		.5 to 1
			Total	27-47

Summary Table continued

Module	Flexible Modules	Year	Prerequisites	Weight	Example courses for Flexible modules
1.	Language Development	any		1 to 2	Learning and Development
2.	Aboriginal English and Torres Strait Dialects and Indigenous Languages	any	M3	1 to 2	Indigenous Education
22.	Digital Literacy	2, 3, 4	M3-M14	1 to 2	ICT
24.	Supporting All Readers	2, 3	M3-M14	1 to 2	Inclusive Education
28.	Science Literacy	2, 3, 4	M3-M14	1 to 2	Science/STEM
29.	Historical Literacy	2, 3, 4	M3-M14	1 to 2	History/Geography etc.
30.	Health and Physical Literacy	2, 3, 4	M3-M14	1 to 2	Health/Phys. Ed
31.	Mathematical Literacy	2, 3, 4	M3-M14	1 to 2	Maths
32.	Literacy Assessment	2, 3, 4	M3-M23	1 to 2	Assessment
			Total	9 - 18	

Sample Program Outlines

Program 1

The first program outline assumes four English/literacy courses that are each worth 1/8 EFTSL. In the weighting system below, 1/8 EFTSL is equal to 10.

Course 1		
Oral Language for Teachers	Modules	Weights
1. Language Development	M1	1
2. Oral Language and Vocabulary	M3	3
3. Introduction to Phonemic Awareness	M4	1
4. Knowledge about Grammar and Text (1)	Select content from M19	1.5
5. Australian Aboriginal English and Torres Strait Dialects and Languages	M2	1
6. Oral Language: Teaching and Assessment	M9	1.5
7. Vocabulary: Teaching and Assessment	M10	1

Course 2		
Early Reading and Writing Instruction	Modules	Weights
1. Phonemic Awareness: Teaching and Assessment	M11	0.5
2. Phonics (introduction, teaching, and assessment)	M5 and M12 combined	2.5
3. Fluency (introduction, teaching, and assessment)	M6 and M13 combined	2
4. Comprehension (introduction, teaching, and assessment)	M7 and M14 combined	2
5. Spelling (introduction, teaching, and assessment)	M8 and M15 combined	2
6. Language and Literacy Development for EAL/D Learners	M23	1

Course 3		
Writing	Modules	Weights
1. Handwriting and Keyboarding	M27	0.5
2. Learning to Write	M16	1.5
3. Writing to Express Learning and Ideas	M17	3
4. Writing Feedback and Assessment	M18	1
5. Knowledge about Grammar and Text (2)	Select content from M19	2
6. Visual and Multimodal Literacy	M20 and M21 combined	2

Course 4		
Engaging All Readers with All Texts	Modules	Weights
1. Children' Literature F-2	M25	3
2. Children's Literature 3-6	M26	3
3. Reading Content Area Texts	Select content from M22, M28, M29, 30, and M31	2
4. Supporting All Readers	M24	2

Program 2

The second program outline assumes three English/literacy courses that are each worth 1/8 EFTSL. This outline can be used with both undergraduate and graduate entry programs. For undergraduate entry programs, an additional 1/8 EFTSL English/literacy content must be embedded in other relevant courses. Examples of how that could be done is provided below.

In the weighting system below, 1/8 EFTSL is equal to 10. Courses 1, 2, and 3 all have both required and optional content. The required early reading instruction content in this outline is 10.5.

Course 1		
Language Knowledge and Instruction	Modules	Weights
1. Oral Language and Vocabulary (introduction, teaching, and assessment)	M3, M9 and M10 combined	3
2. Phonemic Awareness (introduction, teaching, and assessment)	M4 and M11 combined	1
3. Knowledge about Grammar and Text	M19	4
4. Language and Literacy Development for EAL/D Learners	M23	2

Course 2		
Early Reading and Writing Instruction	Modules	Weights
1. Phonics (introduction, teaching, and assessment)	M5 and M12 combined	2.5
2. Fluency (introduction, teaching, and assessment)	M6 and M13 combined	1.5
3. Comprehension (teaching, instruction, and assessment)	M7 and M14 combined	2.5
4. Spelling (introduction, teaching, and assessment)	M8 and M15 combined	2
5. Learning to Write & Handwriting and Keyboarding	M16 and M27 combined	1.5

Course 3		
Reading and Creating Engaging and Informative Texts	Modules	Weights
1. Children' Literature F-2	M25	2.5
2. Children's Literature 3-6	M26	2.5
3. Writing to Express Learning and Ideas	M17	2
4. Writing Feedback and Assessment	M18	1
5. Multimodal Literacy	M21	2

Modules that can be embedded across the ITE curriculum			
Module name	Module	Weights	Possible home course
1. Language Development	M1	1 to 2	Learning and Development
2. Australian Aboriginal English and Torres Strait Dialects and Languages	M2	1 to 2	Indigenous Education
3. Supporting All Readers	M24	1 to 2	Inclusive Education
4. Visual Literacy	M20	1 to 2	Visual arts course
5. Digital Literacy	M22	1 to 2	ICT course
6. Science literacy	M28	1 to 2	Science course
7. Historical Literacy	M29	1 to 2	History course
8. Health and Physical Literacy	M30	1 to 2	Health/Phys. Ed course
9. Mathematical Literacy	M31	1 to 2	Maths course
10. Literacy Assessment	M32	1 to 2	Assessment course

In this program outline, all undergraduate entry students are required to take a minimum of ten credits from the list above.

Note that, depending on State curriculum requirements, evidence-based disciplinary literacy modules can be developed for social sciences and economic literacy and possibly for other content areas as well.

Program 3

The third program outline is for a fully modularised program. It includes compulsory content and optional content. The first 11 modules satisfy the new program accreditation standards of including 1/8th EFTSL on early reading instruction. The next nine modules cover necessary content from Australian Curriculum: English. The compulsory modules add up to 30 credits, or 3 courses of 1/8th EFTSL each. This satisfies accreditation requirements for graduate entry primary ITE programs. Undergraduate entry students need a minimum of 10 credits from the optional modules to meet the 1/2 EFTSL requirement outlined in the accreditation standards.

Compulsory modules (weight total 30)		
Module name	Module	Weight
1. Oral Language and Vocabulary	M3	1
2. Introduction to Phonemic Awareness	M4	.5
3. Introduction to Phonics	M5	.5
4. Introduction to Fluency	M6	.5
5. Introduction to Comprehension	M7	.5
6. Oral Language: Teaching and Assessment	M9	1
7. Vocabulary: Teaching and Assessment	M10	1
8. Phonemic Awareness: Teaching and Assessment	M11	1
9. Phonics: Teaching and Assessment	M12	1.5
10. Fluency: Teaching and Assessment	M13	1
11. Comprehension: Teaching and Assessment	M14	1.5
12. Introduction to Spelling	M8	.5
13. Spelling: Teaching and Assessment	M15	1
14. Learning to Write	M16	1.5
15. Writing to Express Learning and Ideas	M17	3
16. Multimodal Literacy	M21	2

17. Children' Literature F-2	M25	3
18. Children's Literature 3-6	M26	3
19. Language and Literacy Development for EAL/D Learners	M23	2
20. Knowledge about Grammar and Text	M19	4

Optional modules (all undergraduate entry students need 10 credits)		
Module name	Module	Weight
21. Language Development	M1	1 to 2
22. Australian Aboriginal English and Torres Strait Dialects and Languages	M2	1 to 2
23. Writing Feedback and Assessment	M18	1 to 2
24. Visual Literacy	M20	1 to 2
25. Digital Literacy	M22	1 to 2
26. Supporting All Readers	M24	1 to 2
27. Handwriting and Keyboarding	M27	0.5 to 1
28. Science Literacy	M28	1 to 2
29. Historical Literacy	M29	1 to 2
30. Health and Physical Literacy	M30	1 to 2
31. Mathematical Literacy	M31	1 to 2
32. Literacy Assessment	M32	1 to 2

Module Descriptions

Module 1: Language Development

This module introduces preservice teachers to contemporary theories of language development and their implications for teaching. In this module, preservice teachers will examine the typical stages of children's language development and language variations with an emphasis on oral language-literacy connections, in particular typical and atypical phonological development and lexical and semantic development. They will also evaluate aspects of language development in bilingual and multilingual contexts.

The language development module gives preservice teachers necessary background knowledge to understand their students' language skills in a developmental continuum and how those skills affect literacy learning and oral communication skills.

Module (year)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
1. Language Development (any)	<ul style="list-style-type: none"> • Biological foundations of language development ¹ • Typical developmental trajectory and variations ¹⁻⁴ • Atypical development^{1-4, 11} • Bilingualism and EAL/D¹⁻⁶ • Typical and atypical phonological development¹ • Typical and atypical lexical and semantic development ¹⁻⁴ • Typical and atypical morphological and syntactic development 	<p>A workshop on examining variations in language samples provided by speakers of different age and linguistic background. In these workshops preservice teachers will:</p> <ul style="list-style-type: none"> • use observation forms to code different features of language samples • compare different observation forms and discuss their usability and relevance of information they provide • complete a short assessment of their linguistic knowledge.⁷⁻¹⁰ 	<p>After completing the module, Preservice teachers can:</p> <ol style="list-style-type: none"> 1. explain major developmental milestones in language development 2. describe and analyse the strengths, needs and contexts of individual language learners, including EAL/D learners and learners with language difficulties 3. understand how different components of oral language relate to literacy learning and communication skills in school. 	<p>Weight = 1-2</p> <p>Flexible module; could be located in any Introduction to Learning and Development course or in a literacy course.</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> 1. Bailey et al., 2015 2. Emmitt et al., 2014 3. Owens, 2012 4. Lightbown & Spada, 2013 5. Ellis, 2005 6. Gibbons, 2009 7. Assessment research 8. Carey et al., 2015 9. Lenski et al., 2013 10. Tetlet & Jones, 2014 <p><u>Resources:</u></p> <ol style="list-style-type: none"> 11. Chow et al., 2020

Evidence and Resources

Background materials for ITE providers

1. Bailey, A. L., Osipova, A., & Reynolds, K. (2015). Language development. In L. Corno and E. M. Anderman (eds.), *Handbook of Educational Psychology* (pp. 199-212). Routledge
<https://www.routledgehandbooks.com/doi/10.4324/9781315688244.ch15>.

The chapter by Bailey et al. provides a concise treatment of language development with a specific emphasis on language-literacy connection and contrasting typical and atypical development. It is likely too dense for students if the module is delivered early in the program. In graduate entry programs, it could be used with students as well with appropriate scaffolding and lecture support.

2. Emmitt, M., Zbaracki, M., Komesaroff, L. & Pollock, J. (2014). *Language and learning: An introduction for teaching*. (6th ed.). Melbourne: OUP.
3. Owens, Robert E. Jr. (2012) *Language development: An introduction* (9th ed.). Boston: Pearson Education Co.
4. Lightbown, P. M. & Spada, N. (2013). *How languages are learned* (4th ed.). Oxford UK: OUP.

The three books were written for teachers in preservice teacher education, education teachers and teacher educators who want to re-evaluate their understanding of language. They focus on theories and aspects of language that are most significant for learning and teaching, and in particular for literacy education. Importantly, language development theories are described with concise and simplified language in these books to facilitate comprehension.

5. Ellis, R. (2015). *Understanding second language acquisition*. Oxford UK: OUP.
6. Gibbons, P. (2009). *English learners, academic literacy and thinking: Learning in the challenge zone*. Portsmouth NH: Heineman.

The two books introduce main concepts and terms in second language acquisition. They compare learning a second language with a first language and identify the particular challenges that second language learners face, suggesting implications for teacher practice in the classroom.

Evidence for the importance of including language development module in ITE programs

7. Several studies have identified a gap between teachers' self-rated ability and actual knowledge of language constructs, including comprehension, vocabulary and grammar. They suggest that gaps in core language constructs can be an impediment in many ways, not only for the preservice teachers themselves, but for the learners they will be teaching in their classrooms, particularly EAL/D learners. The implications of these findings point to the need to incorporate some kind of explicit instruction of components of language in teacher education programs.

Fielding-Barnsley, R., & Purdie, N. (2005). Teachers' attitude to and knowledge of metalinguistics in the process of learning to read. *Asia-Pacific Journal of Teacher Education*, 33(1), 65-76.

Hadjoannou, X., & Hutchinson, M. C. (2010). Putting the G back in English: Preparing pre-service teachers to teach grammar. *English Teaching: Practice and Critique*, 9(3), 90-105.

Sangster, P., Anderson, C., & O'Hara, P. (2013). Perceived and actual levels of knowledge about language amongst primary and secondary student teachers: Do they know what they think they know? *Language Awareness*, 22(4), 293-319.

Stark, H. L., Snow, P. C., Eadie, P. A., & Goldfeld, S. R. (2016). Language and reading instruction in early years' classrooms: The knowledge and self-rated ability of Australian teachers. *Annals of Dyslexia*, 66(1), 28-54.

8. Carey, M. D., Christie, M., & Grainger, P. (2015). What benefits can be derived from teaching knowledge about language to preservice teachers? *Australian Journal of Teacher Education (Online)*, 40(9), 16.

This paper evaluates the validity of teaching English grammar to preservice teachers in a teacher education course at a regional university. The course was delivered in blended mode using the grammar component of My Writing Lab Global (MWLG) and face-to-face instruction. The aim of this study was to establish if there are benefits to derive from teaching knowledge about language (KAL) to preservice teachers. It was found that MWLG was well-received by participants who believed it had improved their KAL; this improvement was confirmed by 10% improvement on a pre and post KAL test. MWLG scores and the KAL test also reliably predicted other academic competencies: the students' accumulated GPA and their final written assessment scores for the course. Collectively, these findings suggest that explicit KAL is valued and valid knowledge and should be included in teacher education programs.

9. Lenski, S., Ganske, K., Chambers, S., Wold, L., Dobler, E., Grisham, D. L., ... & Young, J. (2013). Literacy course priorities and signature aspects of nine elementary initial licensure programs. *Literacy Research and Instruction*, 52(1), 1-27.

This study describes how nine elementary literacy initial licensure programs prioritised research-based literacy practices and identifies each program's unique features. Findings suggest that all the programs emphasised teaching literacy theories, instructional practices, and uses of assessment. The programs also had unique features, such as the workshop approach and communities of practice.

10. Tetley, D., & Jones, C. (2014). Pre-service teachers' knowledge of language concepts: Relationships to field experiences. *Australian Journal of Learning Difficulties*, 19(1), 17-32.

This study investigates how the acquisition of language concepts by PSTs is influenced by university coursework and field experiences. Second- and third-year PSTs were surveyed for confidence to teach reading and knowledge of phonics and phonological awareness. Third-year PSTs were also surveyed for specific field experiences that might promote confidence and knowledge of language concepts, particularly relating to phonological constructs. Overall, PSTs performed better on ability-based than on knowledge-based items. Phonological construct scores were positively related to confidence to teach sound-letter relationships. Phonological construct scores were unrelated to experience teaching the first two grades, or having in their supervising teacher a positive model for teaching code-related skills, but were positively related to exposure to a commercial phonics package, and negatively related to exposure to Reading Recovery.

Resources that can be used with preservice teachers

Documents 2 to 6 above can all be used selectively with preservice teachers depending on the weight of the module.

11. Chow, J. C., Walters, S., & Hollo, A. (2020). Supporting Students with co-occurring language and behavioural deficits in the classroom. *TEACHING Exceptional Children*, 52(4), 222-230.

In this paper, Chow et al. provide an accessible overview of expressive and receptive language processing and semantics, syntax and pragmatics as they play out in the classroom. They discuss common types of language difficulties in school, co-occurrence of language and behavioural difficulties, and provide classroom management and instructional strategies to support students with language and behaviour difficulties. The paper provides a nice bridge from teacher language knowledge to effective classroom practices.

Module 2: Aboriginal English and Torres Strait Dialects and Indigenous Languages

This module introduces preservice teachers to Indigenous languages in Australia and to current languages and varieties spoken across the country, including Aboriginal English, Kriol, and Torres Strait Creole. After a brief introduction to differences in grammar, phonology and vocabulary, different speaker positions of Aboriginal and Torres Strait Islander children in schools; strength-based, inclusive, and culturally responsive approaches to English and literacy education; and what the current evidence shows about effective early reading instruction will be examined.

The module aligns with the oral language requirement in the new AITSL Standards and Procedures, but also with the Australian Curriculum: English requirement that students engage with narrative traditions and contemporary literature of Aboriginal and Torres Strait Islander Peoples (in this case children's literature). Note that the actual literacy instruction is covered in other modules.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
2. Aboriginal English and Torres Strait Dialects and Indigenous Languages (any; M3)	<ul style="list-style-type: none"> Indigenous languages in Australia^{2,3} Aboriginal English and Torres Strait Dialects^{1,4} Grammar, phonology, and vocabulary differences^{5,6} Possible speaker positions of Aboriginal and Torres Strait Islander students¹ Monolingual, bilingual, and bidialectal education^{1,7,8} Evidence-informed approaches to teaching literacy to Aboriginal and Torres Strait Islander students⁹ Culturally inclusive children's literature^{10,11} Implications for language and literacy instruction¹² 	<p>Workshop will:</p> <ul style="list-style-type: none"> examine some of the programs identified as effective in Gutierrez, Lowe & Guenther (2020) approaches examine "Tracks to two-way learning"¹³ and other materials in the series and then complete selected activities from Two-Way bidialectal education workshop available from the same website. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> explain differences in phonology due to dialect and home language variations recognise Aboriginal English as a dialect with specific features that can impact literacy learning explain the differences between monolingual, bilingual, and bidialectal approaches to teaching Aboriginal and Torres Strait Islander students understand the current evidence-informed practices and what they show about literacy learning of Aboriginal and Torres Strait Islander children. 	<p>Weight = 1-2</p> <p>Flexible unit. Could be included in Indigenous Education unit or be part of a Literacy unit.</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Gutierrez, Lowe & Guenther, 2020 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Wigglesworth & Billington, 2012 aiatsis.gov.au Simpson & Wigglesworth, 2019 Koch & Nordlinger, 2014 Malcolm, 2008a Malcolm, 2008b Malcolm, 2000 Malcolm, 2007 Williams, 2012 James, 2014 Eades, 1995 Department of Education, WA

Evidence and Resources

Evidence

9. Gutierrez, A., Lowe, K. & Guenther, J. (2019). Indigenous student literacy outcomes in Australia: A systematic review of literacy programmes. *Asia-Pacific Journal of Teacher Education*, doi: 10.1080/1359866X.2019.1700214.

This systematic review, the only of its kind on Indigenous literacy instruction in Australia, discusses all peer-reviewed publications of acceptable methodological rigour that report on literacy interventions that included a significant number of Indigenous students. Most programs included in this review were developed initially for non-Indigenous populations and focus on basic literacy skills, such as phonological awareness and decoding. While most programs reported significant literacy improvements, all identified barriers to success and/or sustainability as outlined in this paper. The main take-away from this review is that when an evidence-based program is used and its implementation is sufficiently resourced, it can improve the basic reading skills of Indigenous students similarly to non-Indigenous students. Gutierrez et al. noted further that there is a significant gap in the captured literacy skills, with the dominant focus on codebreaking, and very few studies addressing other aspects of literacy.

Resources for ITE providers

1. Wigglesworth, G. & Billington, R. (2013). Teaching Creole-Speaking Children: Issues, Concerns and Resolutions for the Classroom. *Australian Review of Applied Linguistics*, 36 (3), 234-249.

This paper provides a very readable review of language positions of Aboriginal and Torres Strait Islander children entering school and how those positions can impact their learning. The paper also introduces several other topics critical for the learning of Aboriginal and Torres Strait Islander students, including health considerations, cultural expectations, diverse views of learning, teacher preparation, and teachers' attitudes towards language differences, all without losing sight of the fact that Aboriginal and Torres Strait Islander children are children first.

2. aiatsis.gov.au. The website of Australian Institute of Aboriginal and Torres Strait Islander Studies provides a lot of information about Aboriginal languages, history and culture, including The Australian Indigenous Languages Collection, and information on community language revival projects. AIATSIS produced document Languages of Aboriginal and Torres Strait Islander peoples – A uniquely Australian heritage (direct access: <https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/1301.0Feature%20Article42009-10>) provides an accessible overview of Aboriginal and Torres Strait Islander languages and their current status, including a section on school language programs.

3. Simpson, J. & Wigglesworth, G. (2019). Language diversity in Indigenous Australia in the 21st century. *Current Issues in Language Planning*, 20 (1), 67-80.

In this article, Simpson and Wigglesworth explore language diversity in Indigenous Australia, its historical underpinnings and development, its implications for education and engagement in the wider community, and how Aboriginal people are using the new language varieties to forge group identities.

4. Koch, H. & Nordlinger, R. (eds.) (2014). *The Languages and Linguistics of Australia: A Comprehensive Guide*. DeGruyter: Berlin.

This edited volume written by and for linguists covers a wealth of information on Indigenous languages. The two chapters of direct relevance here are Chapter 9 on language contact varieties by Meakins and Chapter 10 "Aboriginal English" by Eades. Chapter 9 offers a thorough overview of Australian pidgins, creoles, mixed languages, and koinés, including their current status. Chapter 10 surveys linguistic research on Aboriginal English and addresses several ethical, political, methodological and theoretical considerations. *The Languages and Linguistics of Australia* is not

accessible to undergraduate students without substantial linguistics background, but may be relevant for teachers who find themselves in specific language environments and need to find resources to learn more.

5. Malcolm, I. G. (2008a). Australian creoles and Aboriginal English: Phonetics and phonology. In K. Burridge and B. Kortmann (eds.), *Varieties of English 3: The Pacific and Australasia* (pp. 124–141). Berlin: Mouton de Gruyter.

This chapter explains the phonetics and phonology of Kriol, Torres Strait Creole, and Aboriginal English in relation to standard Australian English. Of particular interest to teachers may be the presence of fewer vowels and diphthongs in many varieties which can affect both phonological awareness and learning of grapheme-phoneme correspondences. While the chapter uses at times very specific linguistic terminology, it could be used with students and has some exercises and study questions at the end. Some of the questions are excellent for ITE students to consider, for example:

Both Kriol and Torres Strait Creole (Broken) are written in a phonemic orthography rather than the orthography used for Standard English. This, of course, reduces the intelligibility of the written form of the creoles to English speakers who do not know creole. What might be some of the advantages to creole speakers of using a phonemic orthography?

6. Malcolm, I. G. (2008b). Australian creoles and Aboriginal English: Morphology and syntax. In K. Burridge and B. Kortmann (eds.), *Varieties of English 3: The Pacific and Australasia* (pp. 415–443). Berlin: Mouton de Gruyter.

This chapter explains the main features of morphology and syntax of Kriol, Torres Strait Creole, and Aboriginal English. It is very information dense but the relevant sections can give teachers a better understanding of where some of the specific features in their Aboriginal and Torres Strait Islander students' speech originate, and thus lay a better foundation for bilingual or bidialectal instruction and respect for the significance of the children's home languages.

7. Malcolm, I. G. (2000). English and inclusivity in education for Indigenous students. *Annual Review of Applied Linguistics*, 22 (2), 51–66.

In this paper, Malcolm argues that two-way bidialectal education is fundamentally inclusive education; "For education to be acceptable to Indigenous people it needs to offer them two things: inclusion and empowerment. Inclusion will be shown in a recognition of the culture and language the Indigenous students bring with them to school; empowerment will come from their initiation through the school to the language (standard English) which gives access to power" (p. 55). He develops the idea of two-way bidialectal education by examining the importance of acknowledging differences in schematic knowledge, contextual knowledge and systemic knowledge. The paper would make an interesting reading for an inclusive education course.

8. Malcolm, I. G. (2007). Cultural linguistics and bidialectal education. In F. Sharifian and G. Palmer (eds.), *Applied Cultural Linguistics: Converging Evidence in Language and Communication Research* (pp. 53–63). Amsterdam: John Benjamins.

In this chapter, Malcolm develops some of the cognitive linguistic foundations of two-way bidialectal education further. He outlines the use of the concepts of category, schema and metaphor in analysing distinctive features of Aboriginal English and describes the three main phases of two-way bidialectal education: awareness raising, easing the transition to the "standard" dialect, and cultivating alternative ways of approaching experience and knowledge. While perhaps not within reach in many schools and communities, understanding the basic principles of two-way bidialectal (or bilingual) education are very topical not only for teaching Aboriginal and Torres Strait Islander students but also for dealing with increasing linguistic diversity in Australian cities.

10. Williams, L. (2012). The little Big Book Club: implementing an aboriginal perspective in the classroom. *Practically Primary*, 17 (2), p. 38+. *Gale Academic OneFile*, Accessed 21 May 2020

In this short article, Williams first discusses ways of creating a culturally inclusive classroom environment and then introduces children's books that represent the Australian Aboriginal culture.

11. James, M. (2014). The honey ant readers: An innovative and bold approach to engaging rural Indigenous students in print literacy through accessible, culturally and linguistically appropriate resources. *Australian and International Journal of Rural Education*, 24 (1), 79-89. Available at <https://search.informit-com-au.simsrad.net.ocs.mq.edu.au/fullText;dn=205074;res=AEIPT>

In this paper, James discusses a collaborative project with Indigenous parents/carers, elders and community members that developed a series of bilingual community stories, The Honey Ant Readers, to assist Indigenous children in acquiring reading. The content of The Honey Ant Readers was made relevant by using Indigenous themes, stories and characters and reading development is scaffolded across 20 books by moving the language from a light form of Aboriginal English gradually to Standard Australian English.

12. Eades, D. (1995). Aboriginal English. Available from Primary English Teaching Association Australia website: http://www.petaa.edu.au/imis_prod/w/Teaching_Resources/PPs/PEN_93.aspx

In this essay, Eades provides an accessible overview of dialectal differences between Aboriginal English and Standard Australian English, the different functions of Aboriginal English with some preliminary links to classroom communication and education in general.

13. Department of Education and Department of Training and Workforce Development, Western Australia (2012). Tracks to Two-way Learning. Focus area 1: Understanding language and dialect. Available from <http://det.wa.edu.au/curriculum-support/eald/detcms/navigation/english-as-an-additional-language-or-dialect-for-aboriginal-students/teaching-and-learning-resources-for-eal-d-aboriginal-students/tracks-to-two-way-learning/>

This is the first of 12 resource booklets that go with the Tracks to Two-Way Learning program.

Resources that can be shared with preservice teachers

All of the above could be shared with preservice teachers selectively, with the possible exception of 4, 5, 6, and 8 that are too technical for students with no linguistics background.

In the phonology section, Louise Moats' (2000, p. 94) Vowel Valley chart could be used for comparisons, particularly if the students have already examined Australian English phonemes in the phonemic awareness module.

Moats, L. C. (2000). *Speech to Print: Language Essentials for Teachers*. Baltimore: Paul H. Brookes.

Modules 3, 9 and 10: Oral Language and Vocabulary

Module 3 introduces preservice teachers to the reciprocal relationship between (1) oral language and vocabulary knowledge and (2) literacy and academic outcomes. It provides a brief introduction to the basic components of language and key concepts in research, teaching and assessment that focus on vocabulary, and equips preservice teachers with a functional model for examining the relationship between language and social context, including socio-cultural variations in language use and development. The model is based on Halliday's functional (i.e. meaning-focused) theory of language and the relationship between language and learning, and provides an accessible framework that preservice teachers require for examining and discussing how language reflects, shapes, and evolves in response to the situational and broader socio-cultural contexts of its use. This functional model of language coherently brings together both meaning and form, such as relating text purpose and audience to grammar features and text structure – all central concepts in the Language Strand of the Australian Curriculum: English.

Modules 9 and 10 build on this foundational knowledge to introduce preservice teachers to effective, evidence-based approaches to teaching and assessment of oral language and vocabulary. Together, the three modules address the requirement to prepare preservice teachers for explicitly teaching and assessing vocabulary and oral language, and to understand the role of vocabulary and oral language as key early predictors of literacy and academic outcomes. While Modules 9 and 10 can be offered in any order, both have Module 3 as a prerequisite.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
3. Oral Language & Vocabulary (any)	<ul style="list-style-type: none"> Overview of the role of oral language and vocabulary in learning to read and write^{1,2,3,4, 5, 6, 7} Basic components of language (phonology, morphology, lexicon, grammar, and pragmatics). Vocabulary: expressive & receptive; breadth and depth; tiers of vocabulary. A functional model of language <ul style="list-style-type: none"> Relationship between language and context of situation: Register (Field, Tenor and Mode)^{8,9,10} Spoken vs. Written language ('decontextualised' talk)^{8,9, 10} Social purpose and language use^{8,9,10} Casual vs. Academic Talk^{11,12} The oral language demands of the transition to school^{13, 14} Language and learning^{10, 11, 13, 14} Socio-cultural variation in children's oral language experiences^{10, 14, 15} 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> analyse linguistic interactions between children and educators or caregivers (video and/ or transcript form) in terms of their register, social purpose, and potential to support learning of new words and concepts investigate the mode continuum (spoken vs written language) with provided transcripts or recordings of spoken interactions and examples of written texts as well as examples from preservice teachers' own use of language. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> describe the reciprocal relationship between oral language (including vocabulary) and literacy. identify the social purpose, field, tenor and mode of spoken interactions and written texts in terms of their context. describe the differences between spoken and written language. identify key features of casual vs. academic talk in early years contexts. 	<p>Weight = 1 - 2</p> <p>Topic covered in most Language and literacy handbooks</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Storch & Whitehurst, 2002 Nation, 2019 LARRC & Chiu, 2018 Reese, Suggate, Long, & Schaughency, 2010 Ouellette & Shaw, 2014; Khan & Justice, 2020 Dickinson & Porche, 2011; Dickinson, 2011 Dickinson, Golinkoff, & Hirsh-Pasek, 2010 Humphrey, Droga, & Feez, 2012 Derewianka & Jones, 2016 Ewing, Callow, & Rushton, 2016 Van Kleeck, 2014; Snow, 2010 Cummins, 2008 Halliday, 2004 [1980] Christie, 2012 Hoff, 2003, 2006

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
9. Oral Language: Teaching and Assessment (2 onwards; M3)	<ul style="list-style-type: none"> Review of key concepts introduced in Module 4 Creating authentic opportunities for learners to discuss ideas and interact in diverse contexts, with different audiences and for different purposes (recounting/ narrative, expository, instructions)^{9, 17, 18} Teaching the language features and vocabulary associated with specific fields/topics^{8, 9} Teaching evaluative language^{8, 9} Assessing speaking, listening and interacting¹⁶ <ul style="list-style-type: none"> Documenting students' authentic oral language use²⁰ Assessing narrative and expository oral language skills^{18, 19, 20} Assessing listening and interacting¹⁶ 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> participate in examples of speaking and listening activities for the classroom (e.g. barrier games, story-telling with puppets, drama, role play, describing images/ 'picture talk') and identify how these could be used to support children's language and literacy across key learning areas categorise and/or design activities for speaking and listening which represent a range of points on the mode continuum, e.g. think-pair-share (informal, spoken); interviews; prepared speeches, debates (formal, spoken) evaluate the potential of wordless picture books to be employed for assessing narrative oral language skills develop activities for assessing expository language skills use the National Literacy Learning Progression, preservice teachers: <ul style="list-style-type: none"> develop activities for authentic assessment of listening, speaking and interacting assess the speaking, listening and interaction skills of children (aged 4-12) in video-recorded interactions. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> design appropriate activities for learners to demonstrate and develop their oral language skills for use in different situations create opportunities for learners to interact in groups using appropriate language skills design activities for learners to listen and respond orally to texts, give instructions and presentations, retell stories, give explanations, and persuade develop and implement strategies for collecting different types of data about students' language development and interpreting it with sensitivity to their cultural and linguistic backgrounds and with a view to supporting their literacy and progress across learning areas. 	<p>Weight = 1 – 2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> National Literacy Learning Progression Grifenhagen, Barnes, Collins, & Dickinson, 2017; Paatsch, Scull, & Nolan, 2019; Pesco & Gagné, 2017; Justice, Bowles, Pence, & Gosse, 2010; Bowles et al., 2020; Narrative Assessment Protocol: http://www.narrativeassessment.com/; Systematic Analysis of Language Transcripts (SALT): https://www.saltsoftware.com/ Westerveld, 2011; Westerveld & Moran, 2011.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
10. Vocabulary: Teaching and Assessment (2 onwards; M3)	<ul style="list-style-type: none"> Identifying, developing and applying strategies to teach vocabulary^{21,22,23} Explicit vocabulary teaching^{21,22,23,24} Strategies to enrich vocabulary^{21,23,27} BICS and CALP¹² Teaching morphology^{25,26,27} How morphology and etymology affect spelling and decoding^{25,26,27} Use of high-quality texts to improve vocabulary²⁸ Use of ICT in vocabulary teaching Vocabulary in curriculum documents Assessment of vocabulary^{28,29} 	<p>Workshop will:</p> <ul style="list-style-type: none"> engage with quality children's literature (fiction and non-fiction texts) to identify sophisticated and technical words (Tier 2 and Tier 3 vocabulary); and develop strategies for introducing this vocabulary to learners practise morphological analysis and activities for teaching morphology engage in modelling activities for explicit vocabulary teaching consider classroom-based activities and opportunities for assessing receptive and expressive vocabulary, and evaluate their strengths and limitations in comparison with tools such as the PPVT and EVT. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> critically reflect upon pedagogy and appropriate evidence-based teaching strategies for quality vocabulary learning experiences in primary school use various evidence-based vocabulary teaching strategies demonstrate an understanding of common morphemes used in specific subject areas assess vocabulary knowledge of primary students. 	<p>Weight = 1 - 2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Wright & Cervetti, 2017 Elleman, Lindo, Morphy & Compton, 2009 Elleman, Oslund, Griffin & Myers, 2019 Moore, Hammond & Fetherston, 2014 Bowers, Kirby & Deacon, 2010; Kirby & Bowers, 2017; Goodwin & Anh, 2013 Apel & Werfel, 2014 Beck, McKeown, & Kucan, 2013 Pearson, Hiebert & Kamil, 2007

Evidence and Resources

Evidence

1. Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: evidence from a longitudinal structural model. *Developmental Psychology*, 38, 934-947. doi: 10.1037//0012-1649.38.6.934.

In this longitudinal study, the authors explored the roles of oral language and code-related (knowledge of print concepts, grapheme-phoneme correspondences, and phonological awareness) precursors to reading in children from pre-school to Year 4. They found that in pre-school, code-related and oral language precursors to reading are strongly related to each other. In the early years of primary school (K-2), reading ability is primarily determined by a child's print knowledge and phonological awareness, but in the later years of primary school (Year 3 onwards), code related and oral language skills emerge as two distinct areas of ability, both of which influence reading comprehension abilities. Their findings highlight the crucial importance of oral language as a foundation for reading comprehension.

2. Nation, K. (2019). Children's reading difficulties, language, and reflections on the Simple View of Reading. *Australian Journal of Learning Difficulties*, 24, 47-73. doi: 10.1080/19404158.2019.1609272.

In this paper, Nation provides a clear introduction to the Simple View of Reading. She describes different profiles of reading difficulty that can occur as a result of difficulties with different aspects of the Simple View. She presents evidence of these profiles using a longitudinal dataset of 242 children followed from the beginning of primary school until 10 years of age. She then discusses the strengths and weaknesses of the Simple View and presents a more complex, "expanded" version of the Simple View, which incorporates the reciprocal nature of the relationships between decoding, oral language, linguistic comprehension and reading comprehension.

3. Language and Reading Research Consortium (LARRC) and Chiu, Y. D. (2018). The Simple View of Reading across development: Prediction of Grade 3 reading comprehension from prekindergarten skills. *Remedial and Special Education*, 39, 289-303. doi: 10.1177/0741932518762055.

In this longitudinal study, the authors measured the oral language and code-related knowledge of a large group of children from pre-school until Year 3 (5 years later). They found that both oral language skills (vocabulary, grammar, and discourse) and code-related skills (letter and print knowledge and phonological processing) strongly predicted reading comprehension 5 years later. In pre-Foundation, oral language and code-related skills were very strongly related to each other, but by Year 3, the two groups of skills were broadly independent.

4. Reese, E., Suggate, S., Long, J., & Schaughency, E. (2010). Children's oral narrative and reading skills in the first 3 years of reading instruction. *Reading and Writing*, 23(6), 627-644. <https://doi.org/10.1007/s11145-009-9175-9>.

This longitudinal study investigated whether children's story retelling predicted their reading skills over a 3-year period. After one year of teaching, oral reading fluency was only significantly predicted by nonsense word fluency, but not narrative quality. Narrative quality of children's retelling was a significant predictor of oral reading fluency both after 2 and 3 years of teaching, while controlling for vocabulary and nonsense word reading fluency.

5. Research on the relationship between oral language skills and reading comprehension

Ouellette, G., & Shaw, E. (2014). Oral vocabulary and reading comprehension: An intricate affair. *L'Année psychologique*, 114(04), 623-645. doi:10.4074/S0003503314004023.

Ouellette and Shaw studied the link between oral vocabulary and reading comprehension by further investigating two facets of oral vocabulary – the number of lexical entries (breadth), and extent of semantic knowledge (depth). Vocabulary breadth had a direct effect on reading comprehension. Lexical-semantic organisation (an aspect of vocabulary depth) had an indirect effect on reading comprehension, mediated by word reading. Definitional knowledge (another aspect of depth) had a bi-directional relationship with both vocabulary breadth and lexical-semantic organisation, but no relationship with reading comprehension. These findings suggest that vocabulary breadth is a crucial element of reading acquisition, over and above word reading, phonological skills and vocabulary depth.

Khan, K. S., & Justice, L. M. (2020). Continuities between early language development and reading comprehension. In E. Birr Moje, P. Afflerbach, P. Enciso, & N. K. Lesaux (Eds.), *Handbook of Reading Research* (Vol. V). Routledge.

The chapter reviews research on language development and reading comprehension as well as the association between them. It argues for the need to adopt a long-range view of reading development that spans early and middle childhood.

6. The following studies discuss the long-lasting and significant impact on literacy and overall academic achievement of early oral language development and the quality of the language interactions children participate in within early childhood programs.

Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth grade language and reading abilities. *Child Development*, 82, 870–886.

This study investigated the longitudinal effects of teacher talk in preschool on reading outcomes for low-income Grade 4 students. Mediation analyses revealed that more sophisticated teacher vocabulary, making utterances to focus attention, correcting utterances and making analytic utterances during book reading facilitated Kindergarten emergent literacy and receptive vocabulary, which in turn had a positive influence on Year 4 comprehension, receptive vocabulary and word recognition. Kindergarten narrative production was positively correlated with Year 4 outcomes but was not a significant element of mediation analyses. In addition, home support for literacy and child's mean length of utterance were related to receptive vocabulary both in Kindergarten and Year 4.

Dickinson, D. K. (2011). Teachers' language practices and academic outcomes of preschool children. *Science*, 333(6045), 964-967. <https://doi.org/10.1126/science.1204526>

The article reviews research on the role of language in later reading, and on preschool interventions targeting oral language learning. It also identifies home and classroom factors that foster early language growth and argues that interventions have limited impact because they fail to sufficiently equip teachers to support children's language and associated conceptual knowledge.

7. Dickinson, D. K., Golinkoff, R. M., & Hirsh-Pasek, K. (2010). Speaking out for language: Why language is central to reading development. *Educational Researcher*, 39(4), 305-310. doi: 10.3102/0013189X10370204.

The authors explain accessibly for preservice teachers that oral language skills influence reading in many indirect ways and extend beyond vocabulary, and that “language is *unique* among precursor abilities in its pervasiveness for both early and later reading competencies and for the duration of its effects on reading comprehension as code breaking turns into meaning making.” (p. 307). As gaps in oral language skills are hard to overcome, these skills require earlier and longer interventions.

8. Humphrey, S., Droga, L., & Feez, S. (2012). *Grammar and meaning* (2nd ed.). Primary English Teaching Association Australia.

Chapter 1 explains the functional model of language and provides an outline of field, tenor, and mode, with examples. Workable activities with answers in the back make this a useful resource to support preservice teachers' knowledge about language and how it is shaped by and shapes social context.

9. Derewianka, B., & Jones, P. (2016). *Teaching language in context* (2nd ed.). Oxford University Press.

Chapters 1 and 2 explain the functional model of language and the role of context in shaping texts. The latter half of chapter 2 outlines language development from infancy through adolescence, including a continuum of registers – from everyday uses of language with close family/friends in often spoken mode in early childhood, through to the more specialised knowledge of schooling with wider contexts of interactions with more unfamiliar audiences and composition of longer, cohesive, multimodal texts.

10. Ewing, R., Callow, J., & Rushton, K. (2016). *Language & literacy development in early childhood*. Cambridge University Press.

Chapter 2 provides an accessible discussion of language development for preservice teachers, from infancy into early childhood, with a focus on the importance of meaningful social interaction for language development. Chapter 4 addresses the importance of oral language in learning, including context variables: field, tenor, and mode. Spoken language in the classroom is considered both as process (talking to learn) and product (talk as performance). In both these chapters, some studies which examine the influence of social factors (socio-economic / cultural influence) on language are canvassed.

11. The following articles distinguish academic language from casual/everyday language, and argue for the need to recognise the features of both types of language/registers, and support students to develop their academic language skills from the early years as these skills are essential in reading and writing to learn and academic achievement.

Van Kleeck, A. (2014). Distinguishing between casual talk and academic talk beginning in the preschool years: An important consideration for speech-language pathologists. *American Journal of Speech-Language Pathology*, 23(4), 724-741. doi:10.1044/2014_AJSLP-14-0032.

The article offers a review of research that demonstrates the significance of educators supporting academic talk in addition to casual talk in the years prior to school. Academic talk is noted to be especially difficult for children with language impairments from diverse backgrounds, and its development needs to be supported as it is part of the hidden curriculum in school (i.e. knowledge necessary for academic achievement but not explicitly taught). The author proposes that academic talk is differentiated from casual talk by its social-interactive and cognitive features (rules of participation in talk, degree of formality; precision of concepts, rules and levels of reasoning, etc.).

Snow, C. E. (2010). Academic language and the challenge of reading for learning about science. *Science*, 328(5977), 450-452.

This article considers examples of academic language, and the difficulties it presents for students and teachers.

12. Cummins J. (2008). BICS and CALP: Empirical and theoretical status of the distinction. In: M. Martin-Jones and N. H. Hornberger (Eds.) *Encyclopedia of Language and Education*. Boston: Springer.

This encyclopedia entry is a useful summary of theory and evidence regarding 'BICS' (basic interpersonal communicative skills) and 'CALP' (cognitive academic language proficiency), written by the originator of the terms. Children who are learning English as an additional language usually develop conversational fluency in English (BICS) within 1–2 years, and this may be misinterpreted by teachers as indicating that children no longer need language support. *All* children benefit from instructional support to learn academic registers (CALP), including relevant specialised vocabulary. For L2 speakers, a period of 5–7 years may be necessary for them to approach L1 speaker norms in managing academic language.

13. Halliday, M. A. K. (2004 [1980]). Three aspects of children's language development: Learning language, learning through language, learning about language. In J. Webster (Ed.), *The Language of Early Childhood (The Collected Works of M. A. K. Halliday, Volume 4.)* (pp. 308-326). Continuum.

This chapter offers many examples from naturalistic interactions that demonstrate that as children engage in linguistic interactions with others, they simultaneously learn language, learn through language, and learn about language.

14. Christie, F. (2012). Early childhood: The initial challenges of school learning. *Language Learning*, 62, 33–70.

This paper represents one of a series by the author which were published together as a special issue of the journal *Language Learning*. It summarises research about challenges for children in terms of their oral language development as they adjust to the demands of schooling, since schooling often calls upon repertoires and 'codes' of language use which may differ from those in the home and prior to school experiences of children. These differences may vary depending on the social positioning of families. Classroom discourse such as morning 'news' is discussed with examples in order to elucidate some of the oral language challenges such school registers can present for children.

15. The following papers review previous research and provide further evidence on the effects of environment variability on language acquisition and early vocabulary development. While language acquisition is facilitated by all human environments, the trajectory of development is highly affected by specific aspects of the child's socio-cultural environment.

Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368-1378. doi:10.1111/1467-8624.00612.

Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review*, 26(1), 55-88. doi: <https://doi.org/10.1016/j.dr.2005.11.002>.

16. The National Literacy Learning Progression is a useful tool provided as part of the Australian Curriculum: English resources to support teachers with identifying the literacy capabilities of individual students, assessment of students' learning, and development of targeted teaching and learning programs.

Australian Curriculum, Assessment and Reporting Authority (ACARA) (2018). National Literacy Learning Progression. Retrieved from: <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

17. The following articles review or present research on teacher talk and other teaching strategies for creating opportunities for children's oral language use and development, and suggest that teacher talk and practices that could promote children's oral language use and development are infrequent and/or ineffectively implemented.

Grifenhagen, J. F., Barnes, E. M., Collins, M. F., & Dickinson, D. K. (2017). Talking the talk: translating research to practice. *Early Child Development and Care*, 187(3-4), 509-526. doi:10.1080/03004430.2016.1246444.

The article reviews previous research on the factors that support language development, particularly focusing on effective teaching practices, settings, and materials. These include exposure to sophisticated vocabulary, contextual supports, repeated interactive reading, complex syntax, and extended conversation. The authors highlight that many of these practices are not implemented in the classroom or are not implemented effectively.

Paatsch, L., Scull, J., & Nolan, A. (2019, June 2019). Patterns of teacher talk and children's responses: The influence on young children's oral language. *Australian Journal of Language and Literacy*, 42(2), 73-86. <https://search.informit.com.au/fullText;res=AEIPT;dn=223595>

The authors present a study of patterns of teacher talk and the opportunities they create for engaging children during small group teaching sessions within and across preschool and school settings. The participants in this intervention were teachers from a preschool and school setting in a low socioeconomic area in Melbourne, Australia. The paper reports on the extent to which teachers' use of discourse patterns aimed at promoting young children's language learning shaped the children's responses. The study identified that teachers' use of closed questions focused on immediate stimuli as a dominant pattern that resulted in limited responses from the children in both preschool and school settings.

18. Pesco, D., & Gagné, A. (2017). Scaffolding narrative skills: A meta-analysis of instruction in early childhood settings. *Early Education and Development*, 28(7), 773-793. doi:10.1080/10409289.2015.1060800.

This meta-analysis of 15 experimental studies suggests that verbal scaffolding is the main effective approach for developing narrative skills. It can be used alone or combined with other non-verbal strategies, such as using props or enacting stories with children. The effectiveness of this approach is typically unrelated to length of instruction.

19. Assessment of narrative oral language skills: Narrative Assessment Protocol, Elicitation Materials and Software

The following studies present initial psychometric validation and further development of a direct assessment tool that covers five aspects of narrative oral language skills (sentence structure, phrase structure, modifiers, nouns, and verbs). The tool was initially validated over the course of one academic year with a group of five-year-old pre-schoolers, and showed excellent inter-rater reliability, as well as good construct, concurrent, and predictive validity. Inter-rater reliability for the online scoring procedure was similar to offline, while not requiring a transcription and thus making the tool viable for large-scale implementation. The follow up study evaluated the psychometric properties of a new version of the tool, suitable for a broader age range (three to six-year old) and freely available online.

Bowles, R. P., Justice, L. M., Khan, K. S., Piasta, S. B., Skibbe, L. E., & Foster, T. D. (2020). Development of the narrative assessment protocol-2: A tool for examining young children's narrative skill. *Language, Speech, and Hearing Services in Schools*, 51(2), 390-404. doi:10.1044/2019_LSHSS-19-00038.

Justice, L. M., Bowles, R., Pence, K., & Gosse, C. (2010). A scalable tool for assessing children's language abilities within a narrative context: The NAP (Narrative Assessment Protocol). *Early Childhood Research Quarterly*, 25(2), 218-234. doi:https://doi.org/10.1016/j.ecresq.2009.11.002.

Narrative Assessment Protocol (NAP): <http://www.narrativeassessment.com/>

The NAP is a brief and cost-effective narrative assessment tool for use with young children (pre-K through Year 2) that is easy to administer and score. This tool is designed for routine language screening and assessment by education professionals, clinicians, and other allied professionals. The NAP, once scored, provides a comprehensive summary of a child's narrative skills with information about how often the child uses each of 20 different narrative skills. This website provides 5 training videos and videos showing the NAP being administered and scored as well as practice exercises that can be used by preservice teachers to develop an understanding of different levels of achievement in narrative oral language skills.

Systematic Analysis of Language Transcripts (SALT): <https://www.saltsoftware.com/>

Systematic Analysis of Language Transcripts (SALT) is software for transcribing and analysing language samples. The tool includes reference databases for comparison with typical peers and offers the option of analysing the features built into NAP. Samples of narrative and expository oral language may be compared with database samples matched by age and grade. The website also offers elicitation materials that can be used by preservice teachers to consider how to create opportunities for assessing learners' narrative and expository oral language skills.

20. The following papers present a task for eliciting expository discourse and discuss ways of sampling and analysing children's spontaneous language that may be suitable for non-clinical, classroom contexts as well.

Westerveld Marleen, F., & Moran Catherine, A. (2011, 2011/04/01). Expository language skills of young school-age children. *Language, Speech, and Hearing Services in Schools*, 42(2), 182-193. https://doi.org/10.1044/0161-1461(2010/10-0044).

This article presents the results of a study that examined (a) the level of expository language skills of 6- and 7-year-old children, using a task in which children had to tell the researcher their favourite game or sport, explain its rules and why they like it, and (b) differences between their expository discourse and that produced by 11-year-old children in an earlier study. The findings suggest that the task is effective even with very young school children and reveal age-related differences on measures of verbal productivity, grammatical accuracy, and verbal fluency, but not on syntactic complexity.

Westerveld, M. (2011). Sampling and analysis of children's spontaneous language: From research to practice. *ACQ*, 13(2), 63-67.

This paper briefly reviews empirical knowledge about spontaneous oral language sampling in preschool and school-aged children across a range of discourse genres (conversation, narration, and exposition). It is addressed to speech and language pathologists and urges them to consider more ecologically-valid (than standardised tests) strategies for eliciting discourse from children.

21. Wright, T. S., & Cervetti, G. N. (2017). A systematic review of the research on vocabulary instruction that impacts text comprehension. *Reading Research Quarterly*, 52(2), 203-226. doi: [10.1002/rrq.163](https://doi.org/10.1002/rrq.163)

This systematic review explores the relationship between vocabulary instruction and reading comprehension. Additionally, it reviews the evidence for two approaches to vocabulary instruction: direct teaching of word meaning, and word-solving strategy. The authors found that teaching word meanings supports comprehension of text containing taught words. However, there was little evidence of improvement on more general measures of reading comprehension. They found that teaching methods requiring active processing were more effective than dictionary-based methods. In terms of word-learning strategies, they found no empirical evidence that teaching only one or two strategies leads to improvement on generalised measures of reading comprehension.

22. Elleman, A. M., Lindo, E. J., Morphy, P., & Compton, D. L. (2009). The impact of vocabulary instruction on passage-level comprehension in school-age children: A meta-analysis. *Journal of Research on Educational Effectiveness*, 2, 1-44. doi: 10.1080/19345740802539200.

In this meta-analysis, the authors examine the effect of vocabulary instruction on reading comprehension. They find that teaching vocabulary (both direct vocabulary teaching and teaching word learning strategies) is effective for improving reading comprehension on measures closely aligned with the treatment. The evidence for improvement on standardised reading comprehension tasks is much weaker. However, vocabulary instruction does lead to growth on standardised vocabulary measures. Teaching methods with higher levels of discussion are associated with better vocabulary outcomes.

23. Elleman, A. M., Oslund, E. L., Griffin, N. M., & Myers, K. E. (2019). A review of middle school vocabulary interventions: Five research-based recommendations for practice. *Language, Speech, and Hearing Services in Schools*, 50, 477-492. doi: 10.1044/2019_LSHSS-VOIA-18-0145.

In this systematic review, the authors investigate the effect of vocabulary teaching on reading comprehension. Based on their results, they make 5 recommendations: (1) that vocabulary teaching should be intentional and tailored to the purpose of instruction; (2) that children should be taught independent word-learning strategies; (3) that there should be a focus on developing semantic networks; (4) that there should be opportunities for discussion and writing, and (5) that it is important to provide a motivating and rich language learning environment. Two studies provided evidence that teaching children to monitor their understanding and use multiple strategies for solving word meaning may improve their general text comprehension.

24. Moore, W., Hammond, L., & Fetherston, T. (2014). Strengthening vocabulary for literacy: An analysis of the use of explicit instruction techniques to improve word learning from story book read-alouds. *Australian Journal of Learning Difficulties*, 19, 153-172. doi:10.1080/19404158.2014.964992.

This study of explicit vocabulary teaching methods was conducted in Western Australia. Two different methods of explicit vocabulary teaching were compared to existing classroom practice. Lessons were delivered by classroom teachers in Year 1 classrooms. Both explicit approaches were more effective than existing classroom practice, and better learning was observed for the method involving the most intensive focus on individual word meanings in a range of contexts. As with many other studies, learning was observed on words that were directly taught, but there was no evidence of an effect on standardised vocabulary assessments.

25. The following two papers review research on the relationship between instruction about morphology and literacy skills.

Bowers, P. N., Kirby, J. R., & Deacon, S. H. (2010). The effects of morphology instruction on literacy skills: A systematic review of the literature. *Review of Educational Research*, 80, 144-179. doi: 10.3102/0034654309359353.

In this meta-analysis, the authors review 22 studies on morphological instruction. They find that teaching morphology is effective for improving morphological knowledge, vocabulary knowledge, reading, and spelling when compared to untreated control groups, though the effects of teaching are reduced when morphology teaching is compared to alternative teaching methods. They find that teaching morphology is more effective when integrated with other aspects of literacy-related teaching, such as direct vocabulary instruction. Kirby and Bowers expand further on the importance morphological instruction in the following chapter:

Kirby, J. & Bowers, P. (2017). Morphological instruction and literacy. In K. Cain, D. Compton, & R. Parrila (Eds.), *Theories of reading development* (pp. 437-461; doi: 10.1075/swll.15.24kir). John Benjamins.

The chapter reviews research on the effects of teaching morphology on aspects of literacy (vocabulary, reading and spelling), and draws conclusions for educational practice. It defines 'morphological knowledge' and explains how such knowledge fits into a theory of reading in English. The chapter concludes by presenting design principles for teaching morphology.

26. Goodwin, A.P., & Anh, S. (2013). A meta-analysis of morphological interventions in English: Effects on literacy outcomes for school-age children. *Scientific Studies of Reading*, 17, 257-285. doi: 10.1080/10888438.2012.689791.

In this meta-analysis, Goodwin & Anh synthesise the research on the effects of morphological instruction on literacy for children from preschool to Year 12. They find that teaching morphology is effective for improving children's morphological knowledge, phonological awareness, decoding, spelling and vocabulary knowledge. However, they do not find evidence of effects on reading fluency or reading comprehension. Effects are smaller on standardised measures than on researcher-designed measures.

27. Apel, K., & Werfel, K. (2014). Using morphological awareness instruction to improve written language skills. *Journal of Speech, Language and Hearing Services in Schools*, 45, 251-260. doi: 10.1044/2014_LSHSS-14-0039.

In this tutorial and review, the authors briefly describe the morphological structure of English and the concept of morphological awareness. They summarise research on the relationships between morphological awareness and written language skills, and provide a brief discussion of tasks used to measure morphological awareness. They then describe a number of morphological teaching activities.

28. Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). Guilford Press.

In this book, the authors provide a detailed description of Robust Vocabulary Instruction. The book includes an explanation of the motivations for developing Robust Vocabulary Instruction, and the reasons why direct teaching of vocabulary is important. It contains detailed descriptions of the three Tiers of vocabulary instruction, advice for choosing words to teach, descriptions of instruction at different grade levels, and many examples of teaching activities and materials. It is a vital source of information on the delivery of direct vocabulary instruction.

29. Pearson, P. D., Hiebert, E. H., & Kamil, M. L. (2007). Vocabulary assessment: What we know and what we need to learn. *Reading Research Quarterly*, 42, 282-296. doi: 10.1598/RRQ.42.2.4.

In this review, the authors provide a brief history of vocabulary assessment. They provide a detailed analysis of the different aspects and facets of vocabulary knowledge that can be assessed. They discuss insights into assessment that have come from the process of selecting words for instruction, and describe the features of a number of commonly used standardised tests of vocabulary. Finally, they raise a number of issues relevant to future research on vocabulary assessment.

Resources for ITE Providers

Apel, K., & Werfel, K. (2014). Using morphological awareness instruction to improve written language skills. *Journal of Speech, Language and Hearing Services in Schools*, 45, 251-260. doi: 10.1044/2014_LSHSS-14-0039.

See description at number 25 above.

Australian Curriculum, Assessment and Reporting Authority (ACARA) (2018). National Literacy Learning Progression. Retrieved from: <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

See description at number 15 above.

Biemiller, A. (2003). Vocabulary: Needed if more children are to read well. *Reading Psychology*, 24, 323-335. doi:10.1080/02702710390227297.

In this clearly written review, Biemiller describes factors influencing vocabulary acquisition and provides an estimate of the size of vocabulary that children need to acquire. He gives evidence supporting the importance of explicit vocabulary teaching, and provides some guidance on the type of words that need to be taught.

Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). New York: Guilford Press.

See description at number 27 above.

Derewianka, B., & Jones, P. (2016). *Teaching language in context* (2nd ed.). Oxford University Press.

See description at number 9 above.

Dougherty Stahl, K. A., & Bravo, M. A. (2010). Contemporary classroom vocabulary assessment for content areas. *The Reading Teacher*, 63, 566-578. doi: 10.1598/RT.63.7.4.

In this review and practice guide, the authors describe the importance and complexity of classroom vocabulary assessment. They discuss what it means to know a word, and summarise different approaches to vocabulary assessment. They then provide examples of three different vocabulary assessment measures that can be used in the classroom.

Edwards-Groves, C., & Davidson, C. (2017). *Becoming a meaning maker: Talk and interaction in the dialogic classroom*. PETAA.

The book is based on a year-long study of classroom talk in different year levels at several public primary schools across NSW. It illustrates the kinds of interactions that are effective in allowing students to participate in classroom talk and to build, articulate and co-construct knowledge with their

teachers and peers. It offers many examples of strategies that teachers use to encourage student talk, language learning, and engagement in the classroom. Drawing on examples of whole-class and group discussions, the authors also discuss the multidimensionality and complexity of listening in classroom lessons. At the end of each chapter, the authors provide learning activities that preservice teachers can complete.

Ewing, R., Callow, J., & Rushton, K. (2016). *Language & literacy development in early childhood*. Cambridge University Press.

See description at number 10 above.

Humphrey, S., Droga, L. & Feez, S. (2012). *Grammar and meaning* (2nd ed.). Primary English Teaching Association Australia.

See description at number 8 above.

Kirby, J. & Bowers, P. (2017). Morphological instruction and literacy. In K. Cain, D. Compton, & R. Parrila (Eds.), *Theories of reading development* (pp. 437-461; doi: 10.1075/swll.15.24kir). John Benjamins.

See description at number 24 above.

Narrative Assessment Protocol (NAP): <http://www.narrativeassessment.com/>

See description at number 18 above.

Systematic Analysis of Language Transcripts (SALT): <https://www.saltsoftware.com/>

See description at number 18 above.

Wegener, S., & Castles, A. (2018). How does oral vocabulary knowledge help children learn to read? *Teacher Magazine*. Retrieved from <https://www.teachermagazine.com.au/articles/how-does-oral-vocabulary-knowledge-help-children-learn-to-read>

In this brief article, the authors describe how vocabulary knowledge influences the ability to read words. In simple terms, they describe an experimental study used to test the role of vocabulary knowledge and then discuss the implications for literacy teaching.

Resources for Preservice Teachers

Australian Curriculum, Assessment and Reporting Authority (ACARA) (2018). National Literacy Learning Progression. Retrieved from: <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

See description at number 15 above.

Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). New York: Guilford Press.

See description at number 27 above.

Derewianka, B., & Jones, P. (2016). *Teaching language in context* (2nd ed.). Oxford University Press.

See description at number 9 above.

Dougherty Stahl, K. A., & Bravo, M. A. (2010). Contemporary classroom vocabulary assessment for content areas. *The Reading Teacher*, 63, 566-578. doi: 10.1598/RT.63.7.4.

See description in "Resources for ITE Providers" above.

Edwards-Groves, C., & Davidson, C. (2017). *Becoming a meaning maker: Talk and interaction in the dialogic classroom*. PETAA.

See description in "Resources for ITE Providers" above.

Ewing, R., Callow, J., & Rushton, K. (2016). *Language & literacy development in early childhood*. Cambridge University Press.

See description at number 10 above.

Humphrey, S., Droga, L. & Feez, S. (2012). *Grammar and meaning* (2nd ed.). Primary English Teaching Association Australia.

See description at number 8 above.

Narrative Assessment Protocol (NAP): <http://www.narrativeassessment.com/>

See description at number 18 above.

Systematic Analysis of Language Transcripts (SALT): <https://www.saltsoftware.com/>

See description at number 18 above.

Wegener, S., & Castles, A. (2018). How does oral vocabulary knowledge help children learn to read? *Teacher Magazine*. Retrieved from <https://www.teachermagazine.com.au/articles/how-does-oral-vocabulary-knowledge-help-children-learn-to-read>

See description in "Resources for ITE Providers" above.

Modules 4 and 11: Phonemic Awareness

Module 4 introduces preservice teachers to phonemic awareness, its constituent skills, and aspects of phonemic features in English. It considers the role that phonemic awareness plays in phonics, and how teaching phonemic awareness within the context of phonics is effective for most children. It also considers the needs of a minority of children whose phonemic awareness skills may require explicit training. Module 11 builds on this knowledge by outlining evidence-based teaching approaches to develop phonemic awareness using (1) letters within the context of phonics, which will benefit most classroom children; and (2) without letters, which will support children who do not automatically develop phonemic awareness via the teaching of phonics. Finally, it will cover different assessment practices, including progress monitoring.

The two modules can be offered separately. For example, Module 4 could be combined with other introductory modules, and Module 11 could be combined with other modules on teaching and assessment. Alternatively, modules 4 and 11 could be combined into one larger unit. Note that the modules are designed so that the information provided in Module 4 is a prerequisite for Module 11.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
4. Introduction to Phonemic Awareness (any; M3)	<ul style="list-style-type: none"> Define words, syllables, onsets, rimes, phonemes ¹ Recognise phonemes, and identify phonetic features in Standard Australian English ² Identify difficult phonetic features in Australian English ^{3, 4} Understand that students with EAD may need to acquire phonemes that contrast with their other languages ¹ Understand that some students may have language difficulties that make it hard to learn phonemic awareness ⁵ Understand the difference between alphabetic versus nonalphabetic writing systems, and how speech is represented by symbols in those writing systems ^{3, 6} 	<p>Tutorials will focus on the practical aspects of phonemic awareness. They will include teaching and practice in:</p> <ul style="list-style-type: none"> segmenting sentences into words, words into syllables, words into onsets and rimes, and words into phonemes identifying phonemic features in English (e.g., voicing; consonant vs. vowels, continuous vs. stop sounds) identifying phonemes that are difficult to blend and segment in English identifying children at risk for not developing phonemic awareness from learning phonics. 	<p>In this unit, preservice teachers will learn to:</p> <ol style="list-style-type: none"> define phonemic awareness explain how it differs from phonological awareness explain the theories of reading development that include phonemic awareness segment spoken and written words into syllables, onsets, rimes/rhymes, and phonemes explain the difference between phonemic awareness and phonics explain how learning phonics can develop phonemic awareness understand why some children may not develop phonemic awareness automatically from learning phonics. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Chapman, 2003 Moats, 2019 Moore & Hammond, 2011 Castles et al., 201 Ehri et al., 2001 Hogan et al., 2005 <p><u>Resources :</u></p> <ol style="list-style-type: none"> Staley et al., 2018 Tolman, 2005

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Resources and Evidence (weight)
11. Phonemic Awareness: Teaching and Assessment (2-3; M4)	<ul style="list-style-type: none"> Teaching phonemic awareness using letters during the teaching of phonics (also see modules 5 and 12). This will be effective for most children ^{1, 7, 9, 10} Teaching phonemic awareness without letters - particularly blending, segmentation, onset-rime - for children who do not develop their phonemic awareness skills via lessons in phonics. ^{7, 11, 12, 13} Assessment and monitoring of phonemic awareness skills, with a particular emphasis on phonemic segmentation and phonemic blending. This can be done with letters during phonics assessment (see phonics modules 5 and 12) - or without letters as a purely verbal task ¹⁴ Differentiation between assessment and progress monitoring 	<p>In terms of teaching, tutorials will help preservice teachers learn to:</p> <ul style="list-style-type: none"> examine phonics programs and identify the elements that train phonemic awareness with letters design phonics exercises that teach phonemic awareness skills using letters teach phonemic awareness without letters for students who do not develop phonemic awareness from phonics lessons. <p>(Note: tutorials could include demonstration videos that model effective teaching - for ease of learning)</p> <p>In terms of assessment, tutorials will help preservice teachers learn to:</p> <ul style="list-style-type: none"> identify phonemic awareness assessments using free resources such as DIBELS develop items for progress monitoring that match the purpose of the assessment create practice items for phoneme blending and segmenting that differ in difficulty for progress monitoring (e.g., CV, CVC, CVCC, CCVC). Each item can be presented with and without letters to pinpoint skills that require extra support (i.e., phonics versus phonemic awareness). 	<p>In terms of teaching, preservice teachers will be equipped to:</p> <ol style="list-style-type: none"> teach phonemic awareness using letters during phonics lessons teach phonemic awareness explicitly, without letters, to children who do not develop phonemic awareness from phonics lessons. <p>In terms of assessment, preservice teachers will learn to:</p> <ol style="list-style-type: none"> use phonemic awareness assessment tools to assess phonemic awareness skills monitor the progress of phonemic awareness skills in children who do not automatically learn these skills from phonics identify if a child has a specific problem with phonemic awareness, with phonics, or with both. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Chapman, 2003 Ehri et al., 2001 Boye & Ehri, 2011 Fuchs et al., 2001 <p><u>Resources:</u></p> <ol style="list-style-type: none"> McGee & Ukrainetz, 2009 The Heggerty program Online resources DIBELS

Evidence and Resources

Evidence

1. Chapman, M. L. (2003). Phonemic Awareness: Clarifying What We Know. *Literacy Teaching and Learning*, 7, 91-114.

This review provides clear definitions of the different types of phonological awareness, and how they differ. It also discusses the relationship between phonemic awareness and phonics. It systematically busts myths about phonemic awareness based on scientific evidence. It is an excellent introduction to the main concepts covered in these modules.

5. Moore, W., & Hammond, L. (2011). Using education assistants to help pave the road to literacy: Supporting oral language, letter-sound knowledge and phonemic awareness in the pre-primary year. *Australian Journal of Learning Difficulties*, 16(2), 85-110.

This article provides a useful discussion about the different types of children who may require explicit phonemic awareness teaching or intervention. These include children with low socio-economic backgrounds, children with spoken language impairments, and children with a family history of reading difficulties. This article therefore provides knowledge about the types of children within the classroom who may struggle to develop phonemic awareness from their lessons in phonics.

6. Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest*, 19, 5-51.

This review bridges the gap between reading science and educational teachings on learning to read. It describes the differences between alphabetic writing systems such as English and non-alphabetic writing systems such as Chinese, and the implication of these differences in learning to read. It concludes that that learning to read in an alphabetic writing system such as English requires the acquisition of how the visual symbols of the writing system (graphemes) represent the sounds of the language (phonemes).

7. Ehri, L. C., Nunes, S. R., Willows, D. M., Schuster, B. V., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel's meta-analysis. *Reading research quarterly*, 36(3), 250-287.

This highly regarded systematic review examines the effects of phonemic awareness teaching and intervention - with and without grapheme-phoneme correspondences (GPCs). It provides clear definitions of the different aspects of phonological awareness - including phonemic awareness. It also considers phonemic awareness within the context of phonics. It provides effect sizes for the effects of combined phonemic awareness and phonics teaching for different populations of readers, and for different contexts of teachers. It is therefore a useful resource for making decisions about the efficacy of combined phonemic awareness and phonics lessons for different children and in different contexts.

8. Hogan, T. P., Catts, H. W., & Little, T. D. (2005). *The relationship between phonological awareness and reading. Language, Speech, and Hearing Services in Schools*. 36(4): 285–293.

This article discusses the relationship between phonemic awareness and reading. It addresses the issue of the reciprocal relationship between phonological awareness and reading. More specifically, it discusses the idea that phonological awareness may initially influence reading, but once children start to read, reading then influences phonological awareness. It provides evidence that phonics-related teaching helps children learn the sound structure of language, which then improves their performance on phonological awareness tests.

9. Boyer, N., & Ehri, L. C. (2011). Contribution of phonemic segmentation instruction with letters and articulation pictures to word reading and spelling in beginners. *Scientific Studies of Reading*, 15(5), 440-470.

This discusses numerous concepts relevant to the phonemic awareness modules. It considers phonemic awareness training and the relationship between phonemic awareness and reading. It also describes a training study for one of the most closely-related aspects of phonemic awareness to reading - phonemic segmentation, which was combined with letters. This combined training activated articulatory phonemic features in words, which boosted the strength of GPCs in memory.

10. Fuchs, D., Fuchs, L. S., Thompson, A., Otaiba, S. A., Yen, L., Yang, N. J., ... & O'Connor, R. E. (2001). Is reading important in reading-readiness programs? A randomized field trial with teachers as program implementers. *Journal of Educational Psychology*, 93(2), 251.

This provides an interesting background to why phonological and phonemic awareness have played a prominent role in primary education. It provides a succinct review of studies that have examined the efficacy of phonemic awareness tuition and intervention in children, and it outlines a study that compares phonological awareness training with and without concomitant phonics training in kindergarten children. This study shows that children who did combined phonological awareness and phonics training outperformed children who did just phonological awareness training or no such training. It provides a discussion for how these findings might inform practice.

Resources for ITE Providers

1. Chapman, M. L. (2003). Phonemic Awareness: Clarifying What We Know. *Literacy Teaching and Learning*, 7, 91-114.

This review provides clear definitions of the different types of phonological awareness, and how they differ. It also discusses the relationship between phonemic awareness and phonics. It systematically busts myths about phonemic awareness based on scientific evidence. It is an excellent introduction to the main concepts covered in these modules.

2. Staley, B., Amery, R., Howitt, S., Rampmeyer, K., Southwood, A., Coonan, E., & Ridd, M. (2018). *Teaching Standard Australian English Speech Sounds to Students in the Northern Territory*. Northern Territory Department of Education: Northern Territory Government.

This report provides a clear overview of the speech sounds in Australian in English. It also provides practical advice about how to teach Australian vowels and consonants to children for whom Australian-English is an additional language (EAL). It further provides materials that teachers can use to provide this teaching. It is a very practical and simple resource that is easy to follow.

3. Moats, L. (2019). Phonics and spelling: Learning the structure of language at the word level. In Kilpatrick, D. A., Joshi, R. M., & Wagner, R. K. (2019). *Reading Development and Difficulties*. Springer International Publishing.

This book chapter provides a description of phonological awareness that is easy to understand. It also outlines important acoustic and articulatory features of phonemes that may help students when they practice phonemic awareness activities and when they learn to read. (p.43-46).

4. Tolman, C. (2005). Working smarter, not harder: What teachers of reading need to know and be able to teach. *Perspectives*, 31(4), 15-23.

This resource provides a clear definition of what phonemic awareness is, and how it differs from phonological awareness. It also outlines the different types of phonemic awareness, providing explicit examples that make the different concepts easier to understand. It provides an introduction to phonics and provides useful further references to both phonemic awareness and phonics. It is a good practical guide.

5. Moore, W., & Hammond, L. (2011). Using education assistants to help pave the road to literacy: Supporting oral language, letter-sound knowledge and phonemic awareness in the pre-primary year. *Australian Journal of Learning Difficulties*, 16(2), 85-110.

This article provides a useful discussion about the different types of children who may require explicit phonemic awareness teaching or intervention. These include children with low socio-economic backgrounds, children with spoken language impairments, and children with a family history of reading difficulties. This article therefore provides knowledge about the types of children within the classroom who may struggle to develop phonemic awareness from phonics lessons.

11. McGee, L. M., & Ukrainetz, T. A. (2009). Using scaffolding to teach phonemic awareness in preschool and kindergarten. *The Reading Teacher*, 62(7), 599-603.

This is a useful resource guide for scaffolding phonemic awareness. The program was written for pre-readers, but would be useful for supporting children who fail to develop their phonemic awareness skills via phonics. It provides specific examples of children who are struggling and how to respond. A good resource for practical knowledge.

12. The Heggerty Phonemic Awareness program

Although this program is primarily designed to provide daily phonemic awareness lessons in whole classrooms, it can also be used to provide small-group support for children who fail to develop phonemic awareness from phonics training. It can be easily found via an online search. While the program is not free, it provides some implementation aids free of charge, and the program itself is not expensive for a school.

13. Online resources

The following online sites provide easy-to-understanding information about the assessment and teaching of phonemic awareness. These resources can all be used to provide small-group support to students whose phonemic awareness does not develop sufficiently from phonics lessons. If these sites disappear over time, a simple online search will reveal similar alternatives:

<https://pals.virginia.edu/activities-PA-B-all.html>

https://www.oise.utoronto.ca/balancedliteracydiet/Phonemic_Awareness.html

<http://www.letters-and-sounds.com/phase-1.html>

<https://equippedforreadingsuccess.com/>

14. The Dynamic Indicators of Basic Early Literacy Skills® (DIBELS)

DIBELS is a free resource that provides free information about concepts, assessments, and teaching for early literacy skills - including phonemic awareness. Of particular note are the modules on First Sound Fluency and Phoneme Segmentation Fluency. The Nonword Fluency module could also be used to understand how to teach phonemic awareness within the context of phonics lessons (i.e., using letters). Highly recommended for practical knowledge. It is available online.

Resources for Preservice Teachers

1. Chapman, M. L. (2003). Phonemic Awareness: Clarifying What We Know. *Literacy Teaching and Learning*, 7, 91-114.

This review provides clear definitions of the different types of phonological awareness, and how they differ. It also discusses the relationship between phonemic awareness and phonics. It systematically

busts myths about phonemic awareness based on scientific evidence. It is an excellent introduction to the main concepts covered in these modules.

2. Staley, B., Amery, R., Howitt, S., Rampmeyer, K., Southwood, A., Coonan, E., & Ridd, M. (2018). *Teaching Standard Australian English Speech Sounds to Students in the Northern Territory*. Northern Territory Department of Education: Northern Territory Government.

This report provides a clear overview of the speech sounds in Australian in English. It also provides practical advice about how to teach Australian vowels and consonants to children for whom Australian-English is an additional language (EAL). It further provides materials that teachers can use to provide this teaching. It is a very practical and simple resource that is easy to follow.

3. Moats, L. (2019). Phonics and spelling: Learning the structure of language at the word level. In Kilpatrick, D. A., Joshi, R. M., & Wagner, R. K. (2019). *Reading Development and Difficulties*. Springer International Publishing.

This book chapter provides a description of phonological awareness that is easy to understand. It also outlines important acoustic and articulatory features of phonemes that may help students when they practice phonemic awareness activities and when they learn to read. (p.43-46).

4. Tolman, C. (2005). Working smarter, not harder: What teachers of reading need to know and be able to teach. *Perspectives*, 31(4), 15-23.

This resource provides a clear definition of what phonemic awareness is, and how it differs from phonological awareness. It also outlines the different types of phonemic awareness, providing explicit examples that make different concepts easier to understand. It provides an introduction to phonics and provides useful further references to both phonemic awareness and phonics. It is a good practical guide.

5. Moore, W., & Hammond, L. (2011). Using education assistants to help pave the road to literacy: Supporting oral language, letter-sound knowledge and phonemic awareness in the pre-primary year. *Australian Journal of Learning Difficulties*, 16(2), 85-110.

This article provides a useful discussion about the different types of children who may require explicit phonemic awareness training. These include children with low socio-economic backgrounds, children with spoken language impairments, and children with a family history of reading difficulties. This article, therefore, provides knowledge about the types of children within the classroom who may struggle to develop phonemic awareness from phonics lessons.

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Modules 5 and 12: Phonics

Module 5 introduces preservice teachers to the English writing system and how sounds are represented in this alphabetic system. It will also examine why phonics is important in moving children from prereaders to readers.

Module 12 builds on this knowledge and examines different evidence-based approaches to teaching phonics. The module will introduce different types of phonics teaching, different ways to conceptualise the scope and sequence of teaching grapheme-phoneme correspondences, and include practice in teaching phonics. Finally, it will cover different assessment practices, including progress monitoring.

The two modules cover the new explicit requirement to include phonics teaching in the ITE programs.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
5. Introduction to Phonics (any; M4)	<ul style="list-style-type: none"> Define alphabetic vs. non-alphabetic writing systems¹ Demonstrate the systematicity of the relationship between letters and sounds compared to letters and meanings¹ Introduce Simple View of Reading² Examine theories of reading acquisition, including the Self-Teaching Hypothesis³ Define phonics and its difference from phonemic awareness⁴ Outline grapheme-phoneme and phoneme-grapheme relationships and their critical role in decoding and spelling⁵ Introduce how letters and letter strings are mapped on to sounds in Australian Standard English⁶ 	<p>The tutorial activities will focus on understanding the relationships between graphemes and phonemes through:</p> <ul style="list-style-type: none"> examining the mappings of graphemes to phonemes examining examples of many-to-many grapheme to phoneme correspondences and phoneme to grapheme correspondences. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> define phonics, grapheme, phoneme and phonemic awareness explain the difference between alphabetic and common nonalphabetic writing systems explain grapheme-phoneme and phoneme-grapheme relationships and their critical role in decoding and spelling explain the Simple View of Reading, Self-Teaching Hypothesis and the alphabetic principle. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Castles et al., 2018 Nation, 2019 Share, 1999 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Mesmer & Griffith, 2005 Moats, 2019 'Speech Sounds' in 'Literacy Teaching Toolkit' from Victoria State Government

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
12. Phonics: Teaching and Assessment (2-3; M5)	<ul style="list-style-type: none"> Differentiating systematic phonics vs. non-systematic phonics^{7, 8} Differentiating synthetic phonics vs. analytic phonics^{1, 7, 8} Scope and sequence of letter-sound correspondences, and the speed of introduction^{9, 10, 11, 18} Practising letter-sounds using words and decodable books¹² Outlining use of high-quality children's literature to teach phonics¹³ Introducing teaching high frequency sight words (e.g., the, a, was) along with phonics^{9, 14} Outlining set-for-variability/flexible phonics¹⁴ Examining differential teaching to support advanced, EALD, struggling readers and struggling readers/spellers^{15, 16} Outlining different resources for phonics screeners Outlining different resources for progress monitoring. 	<p>Tutorial on practical approaches to teaching phonics will focus on:</p> <ul style="list-style-type: none"> examining examples of good classroom teaching using videos and teaching resources¹⁷ explaining the challenges of teaching phonics (e.g., the inconsistencies of English letter-sound mappings, blending sounds with schwas and consonant clusters, the sound changes in co-articulated speech)⁶ practising developing phonic lessons, including: a) reviewing previously learned letter-sounds; b) teach new letter-sounds, teach blending and segmenting of those letter-sounds; and c) practise reading letter-sounds in words and decodable books practising differentiated teaching to support advanced, EAL/D, struggling readers. <p>Tutorial on assessing phonic knowledge will focus on:</p> <ul style="list-style-type: none"> examining assessment resources such as MOTIF, DIBELS examining phonics screeners such as the UK Phonics Screening Check developing items for progress monitoring learning how to interpret results from screenings and use in further programming. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> design explicit and systematic phonics learning experiences that are engaging and motivating to all students teach phonics using a systematic and evidence-based approach critically evaluate and modify existing programs already in use support phonics teaching with appropriate high-interest readings differentiate phonics teaching for children at different reading levels locate appropriate evidence for their teaching choices. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Ehri et al., 2001 Torgerson et al., 2019 Vousden et al., 2011 Chen & Savage, 2014 Sunde et al., 2019 Beverly et al., 2009 Solity & Vousden, 20 Colenbrander et al., In press Stuart & Stainthorp, 2015 Rupley et al., 2009 <p><u>Resources:</u></p> <ol style="list-style-type: none"> 'Phonics Guide' from NSW Education Department DSF table comparing different scopes and sequences

Evidence and Resources

Evidence and Resources for ITE Providers

1. Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest*, 19(1), 5-51. doi:10.1177/1529100618772271.

This comprehensive, yet readable review article aims to bridge the gap between reading science and educational instruction on learning to read. It describes the differences between alphabetic writing systems such as English and non-alphabetic writing systems such as Chinese and their implications for learning to read. It concludes that that learning to read in an alphabetic writing system such as English requires the acquisition of how the visual symbols of the writing system (graphemes) represent the sounds of the language (phonemes). This article also reviews evidence for phonics teaching and how it should be best delivered in classrooms. In line with previous reviews on teaching methods (Ehri 2001; Torgeson 2006), the review suggests that there is currently no clear evidence for which phonics teaching is most effective. However, a key component to successful phonics teaching appears to be teaching in a systematic and explicit manner.

2. Nation, K. (2019). Children's reading difficulties, language, and reflections on the Simple View of Reading. *Australian Journal of Learning Difficulties*, 24, 47-73. doi: 10.1080/19404158.2019.1609272.

In this paper, Nation provides a clear introduction to the Simple View of Reading. She describes different profiles of reading difficulty that can occur as a result of difficulties with different aspects represented by the Simple View. She presents evidence for these profiles using a longitudinal dataset of 242 children followed from the beginning of primary school until 10 years of age. She then discusses the strengths and weaknesses of the Simple View. This is followed by a more complex, "expanded" version of the Simple View, which incorporates the reciprocal nature of the relationships between decoding, oral language, linguistic comprehension and reading comprehension.

3. Share, D. L. (1999). Phonological recoding and orthographic learning: A direct test of the self-teaching hypothesis. *Journal of Experimental Child Psychology*, 72(2), 95-129. doi: 10.1006/jecp.1998.2481.

This study describes the self-teaching hypothesis and is the first experimental study to directly test this hypothesis. The self-teaching hypothesis highlights the importance of decoding letters to sounds. The process of decoding not only provides access to the spoken form of the words, it is also a learning opportunity for the acquisition of the words in print. After a few exposures, children will acquire the orthographic knowledge of the word that provides automatic and quick access of the word. One important feature of the self-teaching hypothesis is that being able to decode unfamiliar words is crucial for children to learn to read words independently.

4. Mesmer, H. A. E., & Griffith, P. L. (2005). Everybody's selling it—But just what is explicit, systematic phonics instruction? *The Reading Teacher*, 59(4), 366-376. doi:10.1598/RT.

This short review article provides a clear definition of explicit, systematic phonics teaching. More specifically, it defines explicit vs. implicit phonics and systematic vs. incidental phonics.

5. Moats, L. (2019). Phonics and spelling: Learning the structure of language at the word level. In D. A. Kilpatrick, R. M. Joshi, & R. K. Wagner (2019). *Reading Development and Difficulties*. Cham: Springer International Publishing. doi: 10.1007/978-3-030-26550-2_1.

This book chapter explains the relationship between grapheme-to-phoneme translation for word reading and phoneme-to-grapheme translation for spelling. It also outlines some important acoustic

and articulatory features of phonemes that may help with delivering phonics instruction. Finally, the chapter provides a set of well-supported recommendations to improve the teaching of phonics, word reading, and spelling.

6. 'Speech Sounds' in 'Literacy Teaching Toolkit' from Victoria State Government.

<https://www.education.vic.gov.au/childhood/professionals/learning/ecliteracy/interactingwithothers/Pages/speechsounds.aspx#link94>

This website provides information about speech sounds and the development of speech sounds in the context of teaching literacy skills. The sounds are also demonstrated with a video clip, which could be useful for classroom teaching.

7. Ehri, L. C., Nunes, S. R., Stahl, S. A., & Willows, D. M. (2001). Systematic phonics instruction helps students learn to read: Evidence from the National Reading Panel's meta-analysis. *Review of Educational Research*, 71(3), 393-447.

This meta-analysis evaluates the effects of systematic phonics teaching compared to unsystematic or no-phonics on learning to read. They found that the overall effect of phonics teaching on reading was moderate, $d = 0.41$. Effects persisted after teaching ended. Effects were larger when phonics teaching began early ($d = 0.55$) than after Year 1 ($d = 0.27$). Phonics benefited decoding, word reading, text comprehension, and spelling in many readers. Phonics helped low and middle SES readers, younger students at risk for reading disability (RD), and older students with RD, but it did not help low achieving readers, including students with cognitive limitations. Systematic phonics teaching helped children learn to read better than all forms of control instructions grouped together (with whole language being one of the types of teaching in the control condition). In sum, systematic phonics teaching is recommended to teach beginning reading as well as to prevent and remediate reading difficulties.

8. Torgerson, C., Brooks, G., Gascoine, L., & Higgins, S. (2019). Phonics: Reading policy and the evidence of effectiveness from a systematic 'tertiary' review. *Research Papers in Education*, 34(2), 208-238. doi: 10.1080/02671522.2017.1420816.

This systematic 'tertiary' review examines the relevant systematic reviews and meta-analyses in order to provide the most up-to-date overview of the results and quality of the research on phonics. The primary research question was: What is the effectiveness of systematic teaching of phonics compared with alternative approaches, including whole language approaches or different varieties of phonics on reading accuracy, comprehension, and spelling? Significant positive effects for phonics teaching were found in reading outcomes, ranging from small to moderate effects. It was concluded systematic teaching of phonics is recommended for teaching young readers. But the evidence is not clear enough to decide which phonics approach is best.

9. Vousden, J. I., Ellefson, M. R., Solity, J., & Chater, N. (2011). Simplifying reading: Applying the simplicity principle to reading. *Cognitive Science*, 35(1), 34-78. doi: 10.1111/j.1551-6709.2010.01134.x.

This study tested the application of the simplicity principle to reading. The authors used the children's written word database and generated a list of most frequently occurring GPCs. It was recommended from the study to use this frequency-coded GPC list alongside the highest-frequency exception words.

10. Chen, V., & S. Savage, R. (2014). Evidence for a simplicity principle: Teaching common complex grapheme-to-phonemes improves reading and motivation in at-risk readers. *Journal of Research in Reading*, 37(2), 196-214. doi:10.1111/1467-9817.12022.

A later study conducted by Chen and Savage tested the application of the simplicity principle to reading by using the 64 most frequently occurring GPCs from Vousden et al. (2011). One reading programme taught children complex GPCs ordered by their frequency of occurrence in children's texts (a 'simplicity principle'). The other reading programme taught children word usage (reading and writing of the target words). The findings suggested that the simplicity principle aids in structuring maximally effective supplemental phonic interventions.

11. Sunde, K., Furnes, B., & Lundetræ, K. (2020). Does Introducing the Letters Faster Boost the Development of Children's Letter Knowledge, Word Reading and Spelling in the First Year of School? *Scientific Studies of Reading*, 24(2), 141-158. doi: 10.1080/10888438.2019.1615491.

No study has specifically examined the speed at which letter sounds should be introduced, hence we draw insights from this study conducted with children who are learning a transparent writing system – Norwegian. As many phonics programs introduce only one letter-sound per week, this study investigated how a faster pace of letter teaching influences the development of letter knowledge, word reading and spelling during the first year of school. Regression analysis showed that a faster pace yielded significantly better results for all outcome measures, and this benefit is more salient for low performing children.

12. Beverly, B. L., Giles, R. M., & Buck, K. L. (2009). First-grade reading gains following enrichment: Phonics plus decodable texts compared to authentic literature read aloud. *Reading Improvement*, 46(4), 191-206.

This study compared phonics teaching alone, phonics teaching plus decodable text, and phonics teaching plus authentic literature. All three groups showed measurable reading gains, but the effect of the groups varied by reading level. Below average readers showed greater comprehension increases than average readers given phonics plus decodable readers, but average readers had greater improvements following authentic literature read aloud. Suggestions from the findings of the study includes phonics teaching plus decodable text readers can be used for beginning readers, and as they advance, challenging and meaningful literature will be more beneficial for them.

13. Solity, J., & Vousden, J. (2009). Real books vs reading schemes: a new perspective from instructional psychology. *Educational Psychology*, 29(4), 469-511. doi: 10.1080/01443410903103657.

This study analyses the structures of adult literature, children's real books, and reading schemes, and examines the demands that they make on children's sight vocabulary and phonic skills. It was concluded that when sight vocabulary and phonic skills are combined, children can read 90% of the monosyllabic words they would encounter in adult texts and 88% of monosyllabic words in children's texts, irrespective of whether they occur in a reading scheme or real books. Thus, children will have opportunities to practise their skills as often within real books as within a reading scheme.

14. Colenbrander, D., Wang, H.-C., Arrow, C., & Castles, A. (in press). Teaching irregular words: What we know, what we don't know, and where can we go from here. *The Educational and Developmental Psychologist*. doi: 10.1017/edp.2020.11.

In English, many words do not follow the most common letter-sound rules (e.g., *yacht*, *were*), and they are often referred to as 'irregular', 'tricky' or 'sight words'. This review introduces several methods of irregular word teaching, such as seeing the word, spelling the word, and visualising the word, set-for-variability, and morphology teaching. The set-for-variability teaching recognises that most irregular words contain some regular letter-sound mappings (e.g., /y/ and /t/ in *yacht*). When children use their letter-sound knowledge to sound out these words, they will produce a regularised pronunciations, and the set-for-variability teaching is to ask the students to think of a word that sounds

similar, and then check if it makes sense in context (e.g., Savage, Georgiou, Parrila, & Maiorino, 2018). There was evidence for a benefit on reading for children who were taught this strategy.

Savage, R., Georgiou, G., Parrila, R., & Maiorino, K. (2018). Preventative reading interventions teaching direct mapping of graphemes in texts and set-for-variability aid at-risk learners. *Scientific Studies of Reading*, 22(3), 225-247. doi: 10.1080/10888438.2018.1427753.

15. Stuart, M., & Stainthorp, R. (2015). *Reading development and teaching*. London: Sage. doi: 10.4135/9781473920170.

This book was written for teachers and educational professionals who are interested in how to teach children to learn to read. It introduces essential knowledge about language, theoretical frameworks of reading development, as well as evidence-based teaching strategies for effective teaching of reading. It also provides suggestions for reading assessment and how to teach children to overcome word reading difficulties.

16. Rupley, W. H., Blair, T. R., & Nichols, W. D. (2009). Effective reading instruction for struggling readers: The role of direct/explicit teaching. *Reading & Writing Quarterly*, 25(2-3), 125-138.

This paper reviews the evidence that demonstrates that struggling readers are more likely to learn essential reading skills and strategies if the direct or explicit model of instruction is part of the teacher's repertoire of teaching methods. It outlines what is meant by direct instruction and provides specific guidelines for direct instruction in relation to the teaching of reading

17. 'Phonics Guide' from NSW Centre for Effective Reading, NSW Department of Education.

<https://cer.schools.nsw.gov.au/intervention/teacher-resources/phonics-guides.html>

This document (Letters and Sounds 2-7) provides a guide to explicit and systematic phonics teaching. It contains practical suggestions including letter-sound sets for each week, the sequence of teaching in a discrete phonics session, practice items and procedure of teaching the letter-sound mappings.

18. Dyslexia SPELD Foundation [DSF] (n.d.). Examples of structured synthetic phonics programs – Initial and extended code teaching sequence. <https://dsf.net.au/resources/free-resources>

This document contains a table listing the sequence of letter-sounds taught across 8 different programs. This document may serve as a demonstration for differences and similarities across programs, and can be critically evaluated against the Vousden et al. (2011) paper listed above [9].

Resources for preservice teachers

1. Buckingham, J., Wheldall, R., & Wheldall, K. (2019). Systematic and explicit phonics instruction: A scientific, evidence-based approach to teaching the alphabetic principle. In R. Cox, S. Feez & L. Beveridge (Eds.), *The alphabetic principle and beyond* (pp. 49-67). Newtown, NSW: Primary English Teaching Association Australia.

This accessible paper explains how to teach students systematic and explicit phonics in the first few years at school.

2. Dyslexia SPELD Foundation [DSF] (n.d.). Examples of structured synthetic phonics programs – Initial and extended code teaching sequence. <https://dsf.net.au/resources/free-resources>

This document contains a table listing the sequence of letter-sounds taught across 8 different programs.

3. Hempenstall, K., & Buckingham, J. (2016). *Read about it: Scientific evidence for effective teaching of reading*. Centre for Independent Studies Limited.

This comprehensive chapter provides an easy-to-read overview of the evidence around teaching phonemic awareness, phonics, fluency, vocabulary, and comprehension.

4. McArthur, G., & Castles, A. (2017). Helping children with reading difficulties: Some things we have learned so far. *npj Science of Learning*, 2(1), 1-4.

This brief piece provides a framework for considering the causes of reading difficulties and the most effective avenues for remedial teaching.

5. Mesmer, H. A. E., & Griffith, P. L. (2005). Everybody's selling it—But just what is explicit, systematic phonics instruction? *The Reading Teacher*, 59(4), 366-376. doi:10.1598/RT.

This short review article provides a clear definition of explicit, systematic phonics teaching. More specifically, it defines explicit vs. implicit phonics and systematic vs. incidental phonics.

6. Moats, L. (2014). Systematic, not 'balanced' instruction. *LDA Bulletin*.
<https://www.idaaustralia.org/client/documents/Bulletin-OCT14.pdf>

This piece gives concrete classroom examples of explicit vs. non-explicit teaching.

7. Moats, L. (2019). Phonics and spelling: Learning the structure of language at the word level. In D. A. Kilpatrick, R. M. Joshi, & R. K. Wagner (2019). *Reading Development and Difficulties*. Cham: Springer International Publishing. doi: 10.1007/978-3-030-26550-2_1.

This book chapter explains the relationship between grapheme-to-phoneme translation for word reading and phoneme-to-grapheme translation for spelling. It also outlines some important acoustic and articulatory features of phonemes that may help with delivering phonics instruction. Finally, the chapter provides a set of well-supported recommendations to improve the teaching of phonics, word reading, and spelling.

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Modules 6 and 13: Reading Fluency

Module 6 introduces preservice teachers to reading fluency as a multidimensional construct and to different definitions of fluency in the reading literature. It will also examine why fluency is an important target for reading instruction. Module 13 builds on this knowledge and examines different evidence-based teaching approaches to increasing reading fluency. The module will introduce different oral repeated reading practices that have strong evidence to support them, and less studied but promising wide/continuous reading practices. It will also cover effective silent reading practices in upper primary level (and for fluent readers in earlier years). Finally, it will cover different assessment practices, including progress monitoring.

The two modules cover the new explicit requirement to include evidence-based instruction of reading fluency in the ITE programs.

The two modules can be offered separately, for example Module 6, together with other introductory modules and Module 13 together with other instruction and assessment modules, or they can be combined into one larger unit. However, the modules are designed so that the information provided in Module 6 is a prerequisite for fully appreciating Module 13.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
6. Introduction to Fluency (any; M5)	<ul style="list-style-type: none"> What is reading fluency and why is it important? Compare research definitions^{1,2,3} and websites Two multidimensional models^{1,2} and their components Fluency for code-breaking: letter, part-, whole-word recognition^{1,2,4,5} Fluency with sentences, paragraphs, text, and argument structures across different kinds of text² Prosody and expression^{2,16} 	<p>Workshop focused on building a reading fluency graphic organizer with definitions (small groups). Preservice teachers will:</p> <ul style="list-style-type: none"> examine graphic organizer for possible sources of dysfluency end with questions for instruction and assessment. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> define reading fluency define elements of reading fluency explain the importance of fluency for academic success. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Hudson et al., 2009 Kuhn & Stahl, 2003 Reutzel, 2012 Ehri, 2014; Share, 1995; Kilpatrick, 2018 Hudson et al., 2012

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
13.Fluency: Teaching and Assessment (2 onwards; M6)	<ul style="list-style-type: none"> Eight evidence-based instructional components⁶ Teaching practices with evidence for different target groups (e.g., assisted repeated reading, repeated reading with a goal, repeated reading with preview⁷; performance reading⁸, wide reading⁹); HELPS^{6,7,10} Effective silent reading practices in upper primary (e.g., ScSR, R5)¹¹ Use of ICT to increase fluency¹² Assessment and progress monitoring of fluency at sound, letter, word, sentence, and text level¹³ Assessment of prosody¹⁴ 	<p>Workshop focused on identifying, developing and applying strategies to teach fluency. Preservice teachers will:</p> <ul style="list-style-type: none"> examine HELPS, ScSR, R5, and EFIR instructional routines practise different kinds of shared reading strategies. <p>Workshop on fluency assessment will:</p> <ul style="list-style-type: none"> examine DIBELS and MOTIF resources and practice with two selected tests examine NAEP Oral Reading Fluency Scale and Multidimensional Fluency Scale and practice their use.¹⁴ 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> use different teaching approaches to improve fluency at different levels understand which practices are best suited for different students and purposes use evidence to design their fluency instruction assess fluency at different levels use progress monitoring tools to monitor their students' fluency development. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <p>6. Begeny et al., 2010; 7. meta-analyses and reviews 8. Mraz et al., 2013; Young, Valadez & Gandara, 2016 9. Ardoin et al., 2008; Schwanenflugel et al., 2009; Swanson & O'Connor, 2009</p> <p><u>Resources:</u></p> <p>10. Begeny et al., 2018; www.helpsprogram.org 11. Reutzel & Juth, 2014 12. Niedo et al., 2014; Sackstein et al., 2015 13. Richley & Speece, 2006; motif, DIBELS 14. Pinnell et al., 1995; Zutell & Rasinski, 1991</p>

Evidence and Resources:

Resources for ITE providers

1. Kuhn, M. R. & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology*, 91 (1), 3-21.

In this wide-ranging review of earlier fluency studies and theories, Kuhn and Stahl survey the range of definitions for fluency, primary features of fluent reading, and studies that have attempted to improve the fluency of struggling readers. They report that (a) fluency instruction is generally effective; (b) assisted approaches seem to be more effective than unassisted approaches; (c) repetitive approaches do not seem to hold a clear advantage over nonrepetitive approaches; and (d) effective fluency instruction moves beyond automatic word recognition to include rhythm and expression, or what linguists refer to as the prosodic features of language. While their empirical findings have been superseded by the last 20 years of research (see below), this paper is critical for understanding the definitions and one of the first to give prosody a prominent role in fluency research. It provides information for presenting a standard definition of fluency that can then be expanded on with the help of the next paper.

2. Hudson, R. F., Pullen, P. C., Lane, H. B., & Torgesen, J. K. (2009). The complex nature of reading fluency: A multidimensional view. *Reading & Writing Quarterly*, 25 (1), 4-32.

In this paper, Hudson et al. develop a multidimensional view of reading fluency model. They argue that the common definition of reading fluency as reading accurately at a quick rate with appropriate prosody hides complex processes and skills needed to produce the seemingly effortless performance of a fluent reader. Using both theory and empirical research, the presence and role of underlying processes and knowledge such as decoding fluency, processing speed, vocabulary, letter-sound fluency, and sight word fluency are then discussed. Their goal is to explain the elements needed for fluent reading and how these elements then relate to each other in developing readers. The model they present provides an excellent background for developing preservice teachers' understanding of reading, and not only fluency, as a complex but organised process with different instructional and assessment needs at different levels of organisation.

3. Reutzel, D. R. (2012). "Hey teacher, when you say 'fluency,' what do you mean?" Developing fluency in elementary classrooms. In T. Rasinski, C. Blachowicz, & K. Lems (Eds.). (2012). *Fluency instruction* (2nd edition). New York: Guilford. Retrieved from <http://ebookcentral.proquest.com>

In this chapter, Reutzel reviews fluency literature in a more teacher-friendly language than the first two references and introduces the concept of metafluency – "the knowledge and the language to talk about what fluency is; the propensity or inclination to self-monitor one's own fluency; and learning how to take conscious, strategically selected steps to increase one's own reading fluency" (p, 123) – to the model of fluency. This chapter also includes a detailed explanation of evidence-based fluency instruction routine (EFIR) that can be contrasted with HELPS, ScSR, and R5 routines when preservice teachers complete the fluency instruction and assessment module.

4. Ehri, I. (2014). Ehri, L. C. (2014). Orthographic mapping in the acquisition of sight word reading, spelling memory, and vocabulary learning. *Scientific Studies of Reading*, 18(1), 5-21.

In this review paper, Ehri explains her orthographic mapping theory of how we learn to read words fluently and reviews evidence for it.

Share, D. L. (1995). Phonological recoding and self-teaching: Sine qua non of reading acquisition. *Cognition*, 55, 151-218. doi: 10.1016/0010-0277(94)00645-2.

In this seminal work on orthographic learning, Share presents his theory of how we learn to read words fluently.

Kilpatrick, D. A. (2018). Incorporating recent advances in understanding word-reading skills into specific learning disability diagnoses: The case of orthographic mapping. In D. P. Flanagan & E. M. McDonough (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (p. 947–972). The Guilford Press.

In this book chapter, Kilpatrick integrates Ehri's and Share's theories into a model of single orthographic learning explaining how we learn to read words automatically and accurately, and what are the underlying skills required for that.

Evidence for fluency instruction

5. Hudson, R. F., Torgesen, J. K., Lane, H. B., & Turner, S. J. (2012). Relations among reading skills and sub-skills and text-level reading proficiency in developing readers. *Reading and Writing: An Interdisciplinary Journal*, 25, 483–507 doi: 10.1007/s11145-010-9283-6.

This paper provides correlational evidence for the multidimensional model of reading fluency proposed in Hudson et al. (2009). Similar to 1 and 2 above, it is meant for providing background information for the instructor.

6. Begeny, J. C., Laugle, K. M., Krouse, H. E., Lynn, A. E., Tayrose, M. P., & Stage, S. A. (2010). A control-group comparison of two reading fluency programs: The Helping Early Literacy with Practice Strategies (HELPS) program and the Great Leaps K–2 reading program. *School Psychology Review*, 39, 137–155.

As an introduction to their quasi-experimental study, Begeny et al. review meta-analytic literature on research supported strategies to improve reading fluency and identify eight components that are most associated with beneficial outcomes for students. The same eight components are part of their free HELPS program and explained in the helpsprogram.org website.

7. Several meta-analyses and systematic reviews, most focusing on at-risk readers, are available and generally agree that different repeated reading approaches have the most support for their use. Meta-analyses and systematic reviews used when preparing this outline include the following:

Begeny, J. C., Levy, R. A. & Field, S. A. (2018). Using small-group Instruction to improve students' reading fluency: An evaluation of the existing research, *Journal of Applied School Psychology*, 34 (1), 36-64, doi: 10.1080/15377903.2017.1328628

Chard, C., Vaughn, S., & Tyler, B. (2002). A synthesis of research on effective interventions for building fluency with elementary students with learning disabilities. *Journal of Learning Disabilities*, 35, 386-406.

Hudson, A., Koh, P. W., Moore, K. A, & Binks-Cantrell, E. (2020). Fluency interventions for elementary students with reading difficulties: A synthesis of research from 2000–2019. *Education Sciences*, 10, 52; doi:10.3390/educsci10030052.

Kuhn, M. R., Schwanenflugel, P. J., & Meisinger, E. B. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and definitions of fluency. *Reading research Quarterly*, 45 (2), 230-251. dx.doi.org/10.1598/RRQ.45.2.4.

Kuhn, M. R. & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology*, 91 (1), 3-21.

Lee, J., & Yoon Yoon, S. (2015). The effects of repeated reading on reading fluency for students with reading disabilities: A meta-analysis. *Journal of Learning Disabilities*, 50(2), 213-224.

Padeliadu, S. & Giazitidou, S. (2018). A synthesis of research on reading fluency development: Study of eight meta-analyses. *European Journal of Special Education Research*, 3 (4), 232-256. doi: 10.5281/zenodo.1477124.

Stevens, E. A., Walker, M. A. & Vaughn, S. (2017). The effects of reading fluency interventions on the reading fluency and reading comprehension performance of elementary students with learning disabilities: A synthesis of the research from 2001 to 2014. *Journal of Learning Disabilities*, 50 (5), 576-590. doi:10.1177/0022219416638028.

Strickland, W. D., Boon, R. T., & Spencer, V. G. (2013). The effects of repeated reading on the fluency and comprehension skills of elementary-age students with learning disabilities (LD), 2001-2011: A review of research and practice. *Learning Disabilities: A Contemporary Journal*, 11 (1), 1-33.

Suggate, S. (2016). A meta-analysis of the long-term effects of phonemic awareness, phonics, fluency, and reading comprehension Interventions. *Journal of Learning Disabilities*, 49 (1), 77-96. doi: 10.1177/0022219414528540.

Therrien, W. (2004). Fluency and comprehension gains as a result of repeated reading: A meta-analysis. *Remedial and Special Education*, 25, 252-261.

8. Performance reading (typically Readers Theatre, a form of goal-oriented repeated reading practice) is also covered in some of the meta-analyses, but for the sake of making the distinction between these approaches and typical repeated reading, we have included two references to individual studies (neither of the highest quality):

Young, C., Valadez, C. & Gandara, C. (2016). Using performance methods to enhance students' reading fluency. *The Journal of Educational Research*, 109 (6), 624-630. doi: 10.1080/00220671.2015.1016599.

Young et al. compare the effectiveness of Rock and Read, a fluency strategy that is similar to karaoke in that students read and sing along with music, and Rock and Read plus Readers Theatre, where students practice poems and then perform them to the class, to a control condition in which students continue their regular reading instruction. The results showed that students in both intervention groups improved more than the control groups students in a measure of expression and volume, phrasing, and pace, but not in word recognition automaticity. The differences between the two intervention groups were minimal.

Mraz, M., Nichols, W., Caldwell, S., Beisley, R., Sargent, S., & Rupley, W. (2013). Improving Oral Reading Fluency through Readers Theatre. *Reading Horizons: A Journal of Literacy and Language Arts*, 52 (2). Retrieved from https://scholarworks.wmich.edu/reading_horizons/vol52/iss2/5

This paper discusses Readers Theatre as an instructional strategy and presents a case study in which a third-grade teacher applied Readers Theatre to improve her students reading fluency. This paper was included because it provides both an accessible overview of reading fluency literature and a classroom example of a fluency strategy application.

9. A group of three studies that provide evidence for wide (or continuous) reading are included separately as the meta-analyses mostly did not cover these approaches (with the exception of Hudson et al., 2020, that included two studies with continuous reading intervention not included here).

Ardoin et al. (2008; *Journal of Behavioral Education*, 17, 237-252; doi 10.1007/s10864-008-9066-1) used a within-subjects design to compare Repeated Reading condition (the students read the same passage three times) to Multiple Exemplars condition (students read three different passages with similar content). Their results indicated that children's oral fluency on intervention passages was significantly greater during the Repeated Readings intervention, but their oral reading fluency on generalization passages containing medium word overlap was greater following the Multiple Exemplars intervention. No significant differences between the two interventions were observed in children's oral reading fluency on generalization passages containing high word overlap. Unfortunately, low word overlap condition was not examined.

Schwanenflugel et al. (2009; *Literacy Research and Instruction*, 48 (4), 318-336, doi: 10.1080/19388070802422415) examined short- and long-term effects of two instructional approaches designed to improve the reading fluency of second-grade children: Fluency-Oriented Reading Instruction (or FORI; Stahl & Heubach, 2005) and a wide reading approach (Kuhn et al., 2006). Both programs include components such as choral reading, echo reading and partner reading, but wide reading uses a larger variety of books with less repetition. Schwanenflugel et al. reported that by the end of Year 2, children in the wide reading classrooms showed better fluency and reading self-concept compared to children in control classrooms. Classroom observations indicated children in FORI classrooms were more likely to be off-task than controls. However, by the end of third grade, children in both programs displayed better comprehension than children in the control classes. They suggest that extensive and long-term focus on the oral reading of complex texts using practices that scaffold reading in Year 2 is beneficial for the long-term development of reading comprehension skills.

Swanson & O'Connor (2009; *Journal of Learning Disabilities*, 42 (6), 548-575. doi: 10.1177/0022219409338742) focused on the role of working memory in dysfluent reading, but it includes a comparison of continuous reading condition with a repeated reading condition. Their fluency results with a transfer text (not trained) did not show a significant difference between continuous reading and repeated reading, but both treatments showed an advantage in fluency performance compared to the control condition of dysfluent readers. In reading comprehension, students in the continuous reading condition outperformed students in the repeated reading and control conditions. Finally, vocabulary differences were not significant.

For those interested in the nascent evidence for wide/continuous reading, three other papers are relevant:

Kuhn, M. (2005). A comparative study of small group fluency instruction. *Reading Psychology*, 26, 127–146.

Mathes, P. G., & Fuchs, L. S. (1993). Peer-mediated reading instruction in special education resource rooms. *Learning Disabilities Research & Practice*, 8 (4), 233–243.

O'Connor, R. E., White, A., & Swanson, H. L. (2007). Repeated reading versus continuous reading: Influences on reading fluency and comprehension. *Exceptional Children*, 74, 31–46.

Resources that can be shared with preservice teachers

10. Begeny, J. C., Levy, R. A. & Field, S. A. (2018). Using small-group instruction to improve students' reading fluency: An evaluation of the existing research. *Journal of Applied School Psychology*, 34 (1), 36-64, doi: 10.1080/15377903.2017.1328628 and www.helpsprogram.org.

These two sources are provided as references to HELPS program as an example of evidence-based (some of the evidence is reviewed in Begeny et al., 2018) freely available resource for planning fluency teaching.

11. Reutzel, E. R. & Juth, S. (2014). Supporting the development of silent reading fluency: An evidence-based framework for the intermediate grades (3-6). *International Electronic Journal of Elementary Education*, 7 (1), 27-46.

In this highly accessible paper meant to be shared with students, Reutzel and Juth (2014) note first that The Report of the National Reading Panel (2000) found little research evidence to support continuing the practice of independent silent reading routines in primary classrooms. As a result, many teachers reduced time allocations for students to read silently in school. Reutzel and Juth then go on to argue that more recent research on silent reading fluency reveals four core evidence-based components that support the development of silent reading fluency on primary students: (1) allocated practice time; (2) supportive classroom environment; (3) engaged reading, and (4) teacher scaffolds and instruction. They provide an extended description of each of these four, core evidence-based components to help teachers and teacher educators more successfully implement effective silent reading fluency practices, particularly in upper primary level.

12. Niedo, J., Lee, Y.-L., Breznitz, Z., & Berninger, V. W. (2014). Computerized silent reading rate and strategy Instruction for fourth graders at risk in silent reading rate. *Learning Disability Quarterly*, 37 (2), 100–110. doi: 10.1177/0731948713507263

Sackstein, S., Spark, L., & Jenkins, A. (2015). Are e-books effective tools for learning? Reading speed and comprehension: iPad® vs. paper. *South African Journal of Education*, 35 (4), 14 pages. doi: 10.15700/saje.v35n4a1202.

These two papers provide simple demonstrations of freely available or low-cost approaches to embedding technology productively into the literacy classroom. It was decided not to include reviews of commercially available technologies, such as Reading Plus, Read Naturally Software Edition, Waterford Reading Academy or Fast ForWord, most of which also do not have a lot of independent research support available for them.

13. Ritchley, K. D. & Speece, D. L. (2006). From letter names to word reading: The nascent role of sublexical fluency. *Contemporary Educational Psychology* 31 (3), 301-327. doi: 10.1016/j.cedpsych.2005.10.001.

This paper is provided here as early evidence of the importance of sublexical fluency skills at the beginning of reading instruction. It precedes the theoretical model by Hudson et al. (2009; see above) and complements the research reported in Hudson et al. (2012; see above). The purpose of these research papers is to familiarise the instructor with some of the research that lead to the development of DIBELS (<https://dibels.uoregon.edu>) and is also reflected in the assessment tools available at MOTIF (<https://www.motif.org.au>). As both DIBELS and MOTIF include a selection of freely available assessment materials that teachers can use, students will examine these for coverage of different aspects of reading fluency.

14. There are two frequently used reading expression/prosody assessment tools in schools: NAEP Oral Reading Fluency Scale (Pinnell et al., 1995) and Multidimensional Fluency Scale (Zutell & Rasinski, 1991). Both have been used in multiple studies and generally have exhibited acceptable properties for use in schools to assess expression and prosody.

Pinnell, G.S., Pikulski, J.J., Wixson, K.K., Campbell, J.R., Gough, P.B., & Beatty, A.S. (1995). Listening to children read aloud: Data from NAEP's integrated reading performance record (IRPR) at Grade 4. The Nation's Report Card. Report No. 23-FR-04. Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education.

Zutell, J., & Rasinski, T. V. (1991). Training teachers to attend to their students' oral reading fluency. *Theory into Practice*, 30 (3), 211-217.

Modules 7 and 14: Reading Comprehension

Module 7 introduces preservice teachers to reading comprehension as a multi-componential construct. It will highlight the roles of word reading ability, reading fluency, vocabulary, and oral language ability in reading comprehension. Module 14 builds on this knowledge and examines different evidence-based teaching strategies and techniques for reading comprehension. Finally, it will cover different assessment practices, including progress monitoring.

The two modules cover the new explicit requirement to include reading comprehension teaching in ITE programs.

The two modules can be offered separately, for example, Module 7 together with other introductory modules and Module 14 together with other teaching and assessment modules, or they can be combined into one larger unit. However, the modules are designed so that the information provided in Module 7 is a prerequisite for fully appreciating Module 14.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
7. Introduction to Reading Comprehension (any; M6)	<ul style="list-style-type: none"> Comprehension in simple (and not so simple) view of reading^{1,2} Understanding the relationships between spoken and written language^{1,2,3} Components of reading comprehension (e.g., word reading accuracy and fluency, vocabulary, background knowledge, inference generation).^{1,2,3,4,5,6} 	<p>Tutorial focusing on identifying the components of reading comprehension will include:</p> <ul style="list-style-type: none"> text analysis to demonstrate the importance of each component in reading comprehension such as background knowledge, vocabulary knowledge, inference generation activities such as reading profile analysis to demonstrate the relationship between spoken and written language, text features and task demands end with questions for teaching and assessment. 	<p>After completing the module, pre-service teachers can:</p> <ol style="list-style-type: none"> 1. describe the different components of reading comprehension 2. explain the reciprocal relationships between spoken and written language 3. describe the interaction between reader-internal factors (e.g. reading abilities, oral language skills, background knowledge), text features and comprehension task demands. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> 1. Nation, 2019 2. Snow, 2018 3. Oakhill et al., 2015 4. O'Reilly et al., 2019 5. LARRC & Chiu, 2018 6. Duke & Martin, 2015

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
14. Reading Comprehension: Teaching and Assessment (2-4; M7)	<ul style="list-style-type: none"> General comprehension strategies and teaching techniques (e.g., reciprocal teaching, text structure knowledge)^{6,7,8,9,10} Vocabulary and oral language teaching^{6,11,12} The role of background knowledge in comprehension^{4,6,10} How to support struggling readers^{6,13,14} Progress monitoring Assessment of comprehension K to 6^{15, 16} 	<p>Tutorial focusing on identifying, developing, and applying strategies and techniques to teach reading comprehension will include:</p> <ul style="list-style-type: none"> examining examples of reading comprehension strategies and techniques practising and designing reading comprehension strategies for various text structures practising guiding rich discussion of texts and scaffolding student responses. <p>Tutorial focusing on formal and informal reading comprehension assessments will include:</p> <ul style="list-style-type: none"> identifying and writing questions at literal, inferential and evaluative levels examining reading comprehension assessment resources such as MOTIF supporting students with reading comprehension difficulties based on assessment results. 	<p>After completing the module, pre-service teachers can:</p> <ol style="list-style-type: none"> teach evidence-based strategies for reading comprehension teach evidence-based discipline-specific comprehension techniques facilitate rich discussion of texts monitor reading comprehension across different kinds of texts assess and identify difficulties of reading comprehension component(s). 	<p>Weight = 2-3</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Hebert et al., 2016 Elleman, 2017 Okkinga et al., 2018 Willingham, 2006 Wright & Cervetti, 2017 Elleman et al., 2019 Clarke, Snowling, Truelove & Hulme, 2010 Hulme & Snowling, 2011 Keenan et al., 2008 Colenbrander et al., 2016

Evidence and Resources

Evidence

1. Nation, K. (2019). Children's reading difficulties, language, and reflections on the Simple View of Reading. *Australian Journal of Learning Difficulties*, 24, 47-73. doi: 10.1080/19404158.2019.1609272.

In this paper, Nation provides a clear introduction to the Simple View of Reading. She describes different profiles of reading difficulty that can occur as a result of difficulties with different aspects of the Simple View. She presents evidence of these profiles using a longitudinal dataset of 242 children followed from the beginning of primary school until 10 years of age. She then discusses the strengths and weaknesses of the Simple View and presents a more complex, "expanded" version of the Simple View, which incorporates the reciprocal nature of the relationships between decoding, oral language, linguistic comprehension and reading comprehension.

2. Snow, C. E. (2018). Simple and Not-So-Simple Views of Reading. *Remedial and Special Education*, 39, 313-316. doi: 10.1177/0741932518762055.

In this brief editorial, Snow acknowledges the utility of the Simple View, but describes several challenges and complexities not accounted for within the model. She discusses the importance of accounting for reader-external factors such as features of the text. She draws attention to the changing nature of comprehension demands as students grow older, highlighting the fact that "deep comprehension" (for example, comprehension of multiple documents) requires complex skills beyond those that can be accounted for by the Simple View.

3. Oakhill, J. V., Berenhaus, M., & Cain, K. (2015). Children's reading comprehension and reading comprehension difficulties. In A. Pollatsek & R. Treiman (Eds.), *Oxford Handbook of Reading*. Retrieved from <http://ebookcentral.proquest.com/lib/mqu/detail.action?docID=3564684>

In this chapter, the authors review research on the development of reading comprehension and the nature of reading comprehension difficulties. They discuss the roles of word and sentence-level oral language skills and discourse-level skills such as inferencing and comprehension monitoring. In doing so, they address differences between spoken and written language, the causes of reading comprehension difficulties, and the changing nature of comprehension demands as children are exposed to increasingly complex texts.

4. O'Reilly, T., Wang, Z., & Sabatini, J. (2019). How much knowledge is too little? When a lack of knowledge becomes a barrier to comprehension. *Psychological Science*, 30(9), 1344-1351. doi: 10.1177/0956797619862276.

This study investigates the role of background knowledge on reading comprehension. The authors identify a knowledge threshold, above which increases in students' levels of background knowledge is strongly associated with increases in comprehension. They suggest the existence of this threshold implies that students need a minimum amount of topic knowledge in order to be able to comprehend a text on that topic.

5. Language and Reading Research Consortium (LARRC) and Chiu, Y. D. (2018). The Simple View of Reading across development: Prediction of Grade 3 reading comprehension from prekindergarten skills. *Remedial and Special Education*, 39, 289-303. doi: 10.1177/0741932518762055.

In this longitudinal study, the authors measure the oral language and code-related knowledge of a large group of children from pre-school until Year 3 (five years later). They find that both oral language skills (vocabulary, grammar and discourse) and code-related skills (letter and print knowledge and phonological processing) strongly predict reading comprehension five years later. In pre-Kindergarten, oral language and code-related skills are very strongly related to each other, but by Year 3, the two groups of skills are broadly independent.

6. Duke, N. K., & Martin, N. M. (2015). Best practices for comprehension instruction in the elementary classroom. In S. R. Parris & K. Headley (Eds.), *Comprehension instruction, third edition: Research-based best practices*. Retrieved from <http://ebookcentral.proquest.com>

In this book chapter, the authors summarise the research on reading comprehension as it pertains to classroom practice. They emphasise that research supports early, explicit teaching of comprehension skills and related knowledge. They note that teaching should address oral language knowledge, build background knowledge, involve engaging texts and tasks, and should include strategy instruction as well as rich discussion and writing opportunities. They draw attention to the importance of developing genre and discipline-specific knowledge, and teaching how to comprehend digital and multimodal texts. Furthermore, they discuss issues related to teaching reading comprehension for children who are dual language learners, and discuss the importance of differentiating reading comprehension instruction for children with different skills, interests and background knowledge.

7. Hebert, M., Bohaty, J. J., Nelson, J. R., & Brown, J. (2016). The effects of text structure instruction on expository reading comprehension: A meta-analysis. *Journal of Educational Psychology, 108*, 609-629. doi: 10.1037/edu0000082.

In this meta-analysis, Hebert et al. synthesise the evidence for the effects of text-structure instruction on expository text. They find that teaching students about text-structure is effective for improving comprehension on researcher-created measures of reading comprehension. There is less evidence for its effectiveness in improving comprehension on standardised measures. On average, effectiveness is greater when more than one type of text structure is taught, and when writing is included in the instruction.

8. Elleman, A. M. (2017). Examining the impact of inference instruction on the literal and inferential comprehension of skilled and less-skilled readers: A meta-analytic review. *Journal of Educational Psychology, 109*(6), 761-781. doi: 10.1037/edu0000180.

In this meta-analysis, Elleman examines the impact of inference instruction on children from Kindergarten to Year 12. The meta-analysis includes studies using methods such as inferential questioning practice and inference generation, text clue strategies, background knowledge activation, and text structure instruction. The majority of included studies were conducted with children in Years 3 - 8. Elleman finds that teaching inferencing is effective for improving children's reading comprehension. Teaching inferencing leads to improved inferential comprehension for both skilled and less-skilled readers. Less-skilled readers appear to also make improvements in literal comprehension.

9. Okkinga, M., van Steensel, R., van Gelderen, A. J. S., van Schooten, E., Slegers, P. J. C., & Arends, L. R. (2018). Effectiveness of reading-strategy interventions in whole classrooms: A meta-analysis. *Educational Psychology Review, 30*, 1215-1239. doi: 10.1007/s10648-018-9445-7.

In this meta-analysis, the authors examine the effectiveness of reading-strategy instructions (such as Reciprocal Teaching) in whole classrooms. They review 52 studies involving children in Years 3-12. They find small but significant effects of classroom-based strategy instruction on researcher-designed reading comprehension measures. Effects on such measures increase after a delay, indicating that improvements appear to be durable over time. However, they find only very small effects on standardised measures.

10. Willingham, D. T. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator, 30*, 39-50.

In this accessible article, Willingham describes the process of reading comprehension, touching on differences between written and spoken knowledge and the importance of background knowledge. He then reviews the evidence on comprehension strategy instruction and concludes that while it is useful to teach strategies, prolonged instruction in reading comprehension strategies is no more effective than teaching them briefly. He therefore concludes that while strategy instruction is important, it does not need to take up extensive amounts of instructional time. In contrast, it is crucial for children to

have sufficient vocabulary and background knowledge in order to understand texts, so teaching in these areas should be rich, systematic and should continue throughout schooling.

11. Wright, T. S., & Cervetti, G. N. (2017). A systematic review of the research on vocabulary instruction that impacts text comprehension. *Reading Research Quarterly*, 52(2), 203-226. doi: 10.1002/rrq.163.

This systematic review explores the relationship between vocabulary instruction and reading comprehension. Additionally, it reviews the evidence for two approaches to vocabulary instruction: direct teaching of word meaning, and word-solving strategy instruction. The authors find that teaching word meanings supports comprehension of a text containing taught words. However, there is little evidence of improvement on more general measures of reading comprehension. They find that teaching methods requiring active processing are more effective than dictionary-based methods. In terms of word-learning strategies, they find no empirical evidence that teaching only one or two strategies leads to improvement on generalised measures of reading comprehension. However, two studies provide evidence that teaching children to monitor their understanding and to use multiple strategies for solving word meaning may improve their general text comprehension.

12. Elleman, A. M., Oslund, E. L., Griffin, N. M., & Myers, K. E. (2019). A review of middle school vocabulary interventions: Five research-based recommendations for practice. *Language, Speech, and Hearing Services in Schools*, 50, 477-492. doi: 10.1044/2019_LSHSS-VOIA-18-0145.

In this systematic review, the authors investigate the effect of vocabulary teaching on reading comprehension. Based on their results, they make five recommendations for vocabulary teaching: (1) that vocabulary teaching should be intentional and tailored to the purpose of instruction, (2) that children should be taught independent word-learning strategies, (3) that there should be a focus on developing semantic networks, (4) that there should be opportunities for discussion and writing, and (5) that it is important to provide a motivating and rich language learning environment.

13. Clarke, P. J., Snowling, M. J., Truelove, E., & Hulme, C. (2010). Ameliorating children's reading-comprehension difficulties: A randomized controlled trial. *Psychological Science*, 21, 1106-1116. doi:10.1177/0956797610375449.

In this randomised controlled trial, the authors compare three different methods of reading comprehension intervention for children with poor reading comprehension, but age-appropriate decoding (poor comprehenders). They compare text-comprehension training (Reciprocal Teaching, metacognitive strategy instruction and narrative instruction with written texts), oral language training (oral vocabulary, Reciprocal Teaching with spoken language, figurative language and spoken narrative instruction without exposure to written texts), a combined text-comprehension and oral-language training condition, and a waiting-list control condition. Immediately after training, they find that all the trained groups made significant improvements compared to the control group, but gains were greatest in the oral language group. At follow-up 11 months later, the oral language group continued to improve relative to the control group, while the other groups did not. Gains in the oral language and combined groups appear to be driven by gains in vocabulary knowledge. This study indicates the crucial role of oral language skill in reading comprehension, and demonstrates that poor comprehenders can benefit from oral language teaching.

14. Hulme, C., & Snowling, M. J. (2011). Children's reading comprehension difficulties: Nature, causes, and treatments. *Current Directions in Psychological Science*, 20(3), 139-142. doi:10.1177/0963721411408673.

This article summarises the research on children's reading comprehension difficulties. In particular, the article focuses on poor comprehenders, who can read aloud fluently, but have difficulties understanding what they are reading. The authors review evidence showing that teaching oral language, including vocabulary, is a promising way to improve reading comprehension skills, particularly for children with a mild language delay or specific reading comprehension difficulties.

15. Keenan, J. M., Betjemann, R. S., & Olson, R. K. (2008). Reading comprehension tests vary in the skills they assess: Differential dependence on decoding and oral comprehension. *Scientific Studies of Reading*, 12, 281-300. doi: 10.1080/10888430802132279

In this paper, the authors administer a number of standardised reading comprehension tests to a large sample of children. They find that the tests vary in whether they rely to a greater extent on decoding skills or listening comprehension skills, and the tests only correlated with each other to a moderate degree. They discuss how the format of a test influences the underlying skills measured. Their findings emphasise the complexity of the construct of reading comprehension, and highlight the fact that reading comprehension assessment results must always be interpreted carefully with the features and characteristics of the assessment in mind.

16. Colenbrander, D. C., Nickels, L., & Kohnen, S. (2016). Similar but different: differences in comprehension diagnosis on the Neale Analysis of Reading Ability and the York Assessment of Reading for Comprehension. *Journal of Research in Reading*, 40, 403-419.

In this paper, the authors compare the York Assessment of Reading for Comprehension (YARC), a standardised assessment now widely used in Australia, to the Neale Analysis of Reading Ability (NARA), which was previously one of the most widely used reading comprehension assessments in Australia. They find that NARA scores are more dependent on decoding ability than YARC scores, and that tests differ quite widely in terms of whether or not children meet criteria for a diagnosis of reading comprehension difficulties. The authors discuss differences in test design which may contribute to these findings, and suggest that scores on these tests should always be interpreted carefully in light of the strengths and weaknesses of the assessments.

Resources for ITE Providers:

17. Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing Words to Life: Robust Vocabulary Instruction* (2nd ed.). New York: Guilford Press.

In this book, the authors provide a detailed description of Robust Vocabulary Instruction. The book includes an explanation of the motivations for developing Robust Vocabulary Instruction, and the reasons why direct vocabulary instruction is important. It contains detailed descriptions of the three Tiers of vocabulary instruction, advice for choosing words to teach, descriptions of teaching at different grade levels, and many examples of activities and materials. It is a vital source of information on the delivery of direct vocabulary teaching.

18. Clarke, P. J., Truelove, E., Hulme, C., & Snowling, M. J. (2014). *Developing reading comprehension*. Oxford, UK: Wiley Blackwell.

In this book, the authors provide detailed information on the teaching methods used in their study with poor comprehenders (see Clarke, Snowling, Truelove & Hulme, 2010). At the start of the book, they provide a clear and accessibly written description of the theoretical reasons for choosing different teaching methods, and present the results of their study in a practical way. They then provide detailed descriptions of the teaching methods used, along with examples of teaching materials.

19. Duke, N. K., & Martin, N. M. (2015). Best practices for comprehension instruction in the elementary classroom. In S. R. Parris & K. Headley (Eds.), *Comprehension instruction, third edition: Research-based best practices*. Retrieved from <http://ebookcentral.proquest.com>

See description at number 6 above.

20. Oakhill, J., Cain, K., & Elbro, C. (2014). *Reading Comprehension: A Handbook*. Abingdon, UK: Routledge.

In this book, the authors provide a clear and simple introduction to the skills, processes, and knowledge underlying reading comprehension. Chapters 1 and 2, in particular, provide a clear and useful introduction to the Simple View of reading, the relationships between written and spoken language, and the role of discourse-level processes such as comprehension monitoring and making inferences.

Resources for Preservice Teachers:

21. Duke, N. K., & Martin, N. M. (2015). Best practices for comprehension instruction in the elementary classroom. In S. R. Parris & K. Headley (Eds.), *Comprehension instruction, third edition: Research-based best practices*. Retrieved from <http://ebookcentral.proquest.com>

See description at number 6 above.

22. Oakhill, J., Cain, K., & Elbro, C. (2014). *Reading Comprehension: A Handbook*. Abingdon, UK: Routledge. Chapters 1 and 2.

Chapters 1 and 2 of this book provide a clear and useful introduction to the Simple View of reading, the relationships between written and spoken language, and the role of discourse-level processes such as comprehension monitoring and making inferences.

23. Willingham, D. T. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator*, 30, 39-50.

See description at number 10 above.

Modules 8 and 15: Spelling

Module 8 introduces preservice teachers to spelling and its component skills. The module examines why spelling is a crucial element of teaching writing, and how spelling differs from and supports reading acquisition. Module 15 builds on this knowledge and examines different teaching approaches to spelling, including explicit, systematic teaching of phonics and morphology/etymology. The module covers effective teaching across the stages and differentiation to meet the diverse needs of advanced spellers, students with an EAL/D background, those with developmental language deficit (DLD), and spelling difficulties. Finally, the module covers different assessment practices, including progress monitoring.

The module aligns with the language strand of Australian Curriculum: English and in particular with expressing and developing ideas and phonics and word knowledge sub-strands.

The modules can be taught together with the phonics and morphology modules. Vocabulary teaching and spelling also intersect. Assessment practices could be combined with assessment in other areas.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weights)
8.Introduction to Spelling (any; M5)	<ul style="list-style-type: none"> • Components of spelling¹ • Spelling as a subskill of writing^{2,3} • Connections between reading and spelling: spelling as a powerful learning mechanism for new written and spoken words^{4,5} • The English writing system and challenges of learning to spell (e.g., the one-to-many mappings of sound-to-letter mappings; context-sensitive spellings; segmenting continuous vs stop sounds; the sound changes in co-articulated speech; morphologically based spellings; the role of etymology in spelling)^{6,7} • Learning to spell for students with diverse backgrounds and needs^{8,9} 	<p>Workshops will include:</p> <ul style="list-style-type: none"> • learning the most frequent spelling for the 44 sounds of English • examining more vs. less consistent sound-letter mappings (e.g., /m/ vs. /e/) • examining examples of context sensitive sound-letter rules (e.g., oi/oy; ge/dge) • examining how derivational and inflectional morphology change meaning • examining how morphological rules change spellings (e.g., swim-swimming, puppy-puppies) • examining the constancy of spellings vs. change in pronunciations (e.g., heal-health) • examining spelling mistakes and classify into phonological, orthographic and morphological errors. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> 1. define the different component skills required to become proficient spellers; 2. define the following terms: phoneme, grapheme, morpheme, affix, prefix, suffix, inflection, derivation, orthography, etymology 3. explain the difference between simple sound-letter correspondences and context sensitive sound-letter correspondences, reading and spelling 4. explain the difference between phonically regular and irregular words; between morphologically simple and complex words. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> 1. Daffern, 2017 2. Graham & Santangelo, 2018 3. Berninger et al., 2002 4. Conrad, 2008 5. Ouellette, 2010 8. McNeill et al., 2017 <p><u>Resources:</u></p> <ol style="list-style-type: none"> 6. Moats, 2019 7. Kessler, 2003 9. Geva, 2006

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weights)
15. Spelling: Teaching and Assessment (2-3; M8)	<ul style="list-style-type: none"> Differentiate explicit vs implicit teaching of spelling ^{2,10} Discuss speed of introduction, revision, distributed practice and Ebbinghaus' forgetting curve ¹¹ Discuss explicit teaching of phonics, morphology, and etymology for spelling ^{10,12,13} Contrast and compare different scopes and sequences of sound-letter correspondences ¹⁹ Discuss speed of introduction, scope and sequence of morphemes and etymology ²⁰ Discuss teaching word-specific orthographic knowledge: which words to teach, how and how often ¹⁴ Differentiate teaching for advanced spellers, students with developmental disorders in language or spelling, EAL/D students and other diverse learners ^{10,15} How to differentiate assessment and progress monitoring ^{16,17,18} 	<p>Workshops on practical approaches to teaching will:</p> <ul style="list-style-type: none"> examine what is included in explicit teaching practices examine examples of good classroom teaching (e.g., Videos, session plans) examine the different requirements for teaching spelling across the stages (e.g., via critically appraising different scope and sequences) practise developing and delivering phonics lessons, morphology lessons, word-specific orthographic lessons in groups, discuss and design examples of differentiation for advanced and poor spellers integrate principles of distributed practice, revision and transfer into lesson plans. <p>Workshops on progress monitoring and assessment will:</p> <ul style="list-style-type: none"> examine different assessment purposes examine assessment resources such as MOTIf, CoST develop items for progress monitoring matching the purpose of assessment. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> design explicit and systematic spelling lessons with a phonics or morphology/etymology or word specific focus decide on appropriate scope and sequence for teaching sound-letter correspondences and morphological spelling rules for the different stages critically evaluate and modify existing spelling programs differentiate teaching students at different spelling levels analyse spelling mistakes and understand what knowledge and missing knowledge are reflected in the mistake locate or design appropriate tools for progress monitoring. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <p>10: Goodwin & Ahn, 2013 11: Hughes et al., 2019 12: Goodwin & Ahn, 2010 13: Hurry et al., 2005 14: Berninger et al. 2008 15: Wanzek et al., 2006</p> <p><u>Resources:</u></p> <p>16: Kohnen et al., 2009 17: Kohnen et al., 2014 18: Daffern & Ramful, 2020 19: Spelling programs 20: Word Morphology</p>

Evidence and Resources

Evidence and Resources for ITE Providers

1. Daffern (2017). Linguistic skills involved in learning to spell: An Australian study. *Language and Education*, 31(4), 307-329. doi: 10.1080/09500782.2017.1296855.

This paper presents a readable overview of the phonological, orthographic, and morphological competencies that students need to acquire in order to become proficient spellers. The second part of the paper is dedicated to an empirical study, analysing spelling mistakes of a large Australian corpus. This may be integrated into tutorials as an exercise in understanding and applying linguistic knowledge when analysing spelling mistakes.

2. Graham, S., & Santangelo, T. (2014). Does spelling instruction make students better spellers, readers, and writers? A meta-analytic review. *Reading and Writing*, 27(9), 1703-1743. doi: 10.1007/s11145-014-9517-0.

This meta-analytic review provides an overview of the available evidence for teaching students in K-12 to spell. First, in its introduction, an overview is provided of why and how spelling matters when writing (and reading). Citing several references, Graham and Santangelo maintain that (1) misspellings make it more difficult for a reader to read a text, (2) misspellings lead to assigning lower value to a message; (3) texts with inaccurate spellings are thought of as lower quality by teachers; (4) having to consciously think about word spellings interferes with the composition process; (5) students are likely to choose a word they can spell correctly over a word that more accurately reflects their thinking; (6) some poor spellers even avoid writing altogether.

The actual meta-analysis allows us to make three recommendations for teachers. First, spelling needs to be included in teaching practices as students who receive explicit teaching of spelling outperform their peers who receive no or unrelated instruction (e.g. math). Second, teaching spelling is especially important in the initial stages of formal schooling, as benefits seem to be largest for primary school students (K to Year 6). The evidence also suggests that the impact on children's spelling skills is maintained over time, especially for students in K to Year 3. Third, spelling should be taught explicitly, as students who receive direct spelling teaching outperform their peers receiving implicit or incidental teaching practices (e.g. using reading to improve spelling).

3. Berninger, V. W., Vaughan, K., Abbott, R. D., Begay, K., Coleman, K. B., Curtin, G., ... & Graham, S. (2002). Teaching spelling and composition alone and together: Implications for the simple view of writing. *Journal of Educational Psychology*, 94(2), 291-304. doi: 10.1037/0022-0663.94.2.291.

In this study, 96 third graders with low compositional fluency were randomly assigned to four treatments. All groups received 24 lessons over four months. The first group was taught spelling, the second group was taught composing, the third combined spelling plus composing, and there was a fourth treated control group (writing practice without instruction). Students in all treatment groups increased their compositional fluency. The groups in which spelling was taught improved most in spelling. These skills were transferred to spelling when composing text. The groups in which composing was taught were most effective for persuasive essay writing. Only the group in which both spelling and composing were taught increased both spelling and composing skills.

4. Conrad, N. J. (2008). From reading to spelling and spelling to reading: Transfer goes both ways. *Journal of Educational Psychology*, 100(4), 869-878. doi: [10.1037/a0012544](https://doi.org/10.1037/a0012544).

There is much discussion about the shared and unique processes that make up reading and spelling. This study is relevant because it compares the effects of practising spelling and reading specific words. Typically developing Year 2 students (mean age = seven years, seven months) were recruited for a training study investigating possible transfer between reading and spelling. Following practice, transfer between skills was evident. However, within modality effects were highest. In addition, transfer from spelling to reading was greater than transfer from reading to spelling. This indicates that reading and spelling curricula should be coordinated but both skills be monitored to allow for additional teaching where necessary.

5. Ouellette, G. (2010). Orthographic learning in learning to spell: The roles of semantics and type of practice. *Journal of Experimental Child Psychology*, 107(1), 50-58.

This learning experiment showed that Year 2 students learned new words and their meanings best when they were spelled (vs read) as part of the teaching sequence.

6. Moats, L. (2019). Phonics and spelling: Learning the structure of language at the word level. In Kilpatrick, D. A., Joshi, R. M., & Wagner, R. K. (2019). *Reading Development and Difficulties*. Springer International Publishing.

This book chapter explains the relationship between grapheme-to-phoneme translation for word reading and phoneme-to-grapheme translation for spelling. It also outlines some important acoustic and articulatory features of phonemes that may help with teaching phonics. Finally, the chapter provides a set of well-supported recommendations to improve the teaching of phonics, word reading, and spelling.

7. Kessler, B. (2003). Is English spelling chaotic? Misconceptions concerning its irregularity. *Reading Psychology*, 24(3-4), 267-289.

This overview of the English orthography argues that spelling is less chaotic than many think. Several principles guide English spelling, including representations of phonemes, position of the phoneme within the syllable, the identity of the phonemes surrounding another phoneme, and morphology. Understanding these patterns and using them in teaching may reduce the complexity of learning.

8. McNeill, B. C., Wolter, J., & Gillon, G. T. (2017). A comparison of the metalinguistic performance and spelling development of children with inconsistent speech sound disorder and their age-matched and reading-matched peers. *American Journal of Speech-Language Pathology*, 26(2), 456-468.

This study documents that children with speech-sound disorders have a specific difficulty with spelling. Research also indicates that children have mastered most of their spoken sound acquisition by the time they start school. Hence, it is important that teachers are aware that children in their classrooms with speech sound disorders are at risk of developing spelling difficulties. Appropriate monitoring is required.

9. Geva, E. (2006). Learning to read in a second language: Research, implications, and recommendations for services. *Encyclopedia on Early Childhood Development*, 1-12.
<http://www.child-encyclopedia.com/sites/default/files/textes-experts/en/614/learning-to-read-in-a-second-language-research-implications-and-recommendations-for-services.pdf>

Key messages from this overview article are that second language proficiency takes a long time to develop. This proficiency is associated with higher order literacy (e.g., reading comprehension, fluency, writing), but not word reading. The types of problems that teachers may observe in native language students can also be seen in English-learners. However, students' first languages will impact how they acquire English and what kinds of mistakes they make. Teachers tend to wait longer to escalate needs of English-learners with similar warning signs to non-English learners, because these difficulties are thought to be due to poor oral language skills. Research suggests that learning difficulties can be diagnosed quite early in English-learners.

10. Goodwin, A. P., & Ahn, S. (2013). A meta-analysis of morphological interventions in English: Effects on literacy outcomes for school-age children. *Scientific Studies of Reading*, 17(4), 257-285.

This meta-analytic review provides a broad overview of the impact of morphological interventions (e.g. teaching affix meanings, morphological rules, morphology and its role in spelling, word origins) on literacy skills of students attending preschool to grade 12. It can serve as an evidence-base to recommend teaching morphology to improve spelling skills, as the authors report a significant impact

of morphological interventions on spelling skills, based on moderator analyses, including 23 experimental studies.

11. Hughes, C. A., & Lee, J. Y. (2019). Effective Approaches for Scheduling and Formatting Practice: Distributed, Cumulative, and Interleaved Practice. *TEACHING Exceptional Children*, 51(6), 411-423.

This accessible paper discusses the science behind distributed practice and gives examples of how to apply the principle in the classroom.

12. Goodwin, A. P., & Ahn, S. (2010). A meta-analysis of morphological interventions: Effects on literacy achievement of children with literacy difficulties. *Annals of Dyslexia*, 60(2), 183-208.

This meta-analytic review complements the previously mentioned reference Goodwin and Ahn (2013)⁴ by focusing exclusively on the impact of morphological interventions on the literacy skills of children with literacy difficulties. It provides evidence that morphological interventions have a positive impact on spelling skills based on the overall effect of 11 empirical studies.

13. Hurry, J., Nunes, T., Bryant, P., Pretzlik, U., Parker, M., Curno, T., & Midgley, L. (2005). Transforming research on morphology into teacher practice. *Research Papers in Education*, 20(2), 187-206.

In this study, primary school teachers were interviewed and observed for one literacy lesson with the aim of collecting information on their working knowledge and practices related to teaching spelling. The article includes transcriptions of teachers' responses and classroom observations that could serve as material for tutorial activities within this module. In a second step, teachers were allocated to an experimental group or a no-training control group. Teachers in the experimental group received a ten-session literacy course on morphological principles to improve spelling skills. The students of all teachers were assessed on different spelling tasks before and after the teacher training. Post-test measures revealed that the students of the teachers who attended the training showed a significantly better spelling performance than the students of the teachers receiving no training. The authors could rule out that simply attending the course, or increased teaching of spelling explained the effects.

14. Berninger, V. W., Winn, W. D., Stock, P., Abbott, R. D., Eschen, K., Lin, S.-J., Nagy, W. (2008). Tier 3 specialized writing instruction for students with dyslexia. *Reading and Writing*, 21(1-2), 95-129. doi:10.1007/s11145-007-9066-x

This study evaluated multiple spelling interventions, including an intervention that aimed to support precise, high-quality orthographic representations ('orthographic training') and a morphological training aimed to improve morphological spelling. Training was conducted in a group setting with students in Years 4-9; separate analyses are reported for students in 4-6 and 7-9. We will focus on the primary school cohort here. When only analysing the younger students, the orthographic training showed a larger improvement on a standardised measure of word spelling compared to the morphological training group.

15. Wanzek, J., Vaughn, S., Wexler, J., Swanson, E. A., Edmonds, M., & Kim, A. H. (2006). A synthesis of spelling and reading interventions and their effects on the spelling outcomes of students with LD. *Journal of Learning Disabilities*, 39(6), 528-543.

Studies detailed in this review found that spelling outcomes for students with learning difficulties consistently improved following spelling interventions that included explicit teaching with multiple practice opportunities and immediate corrective feedback after the word was misspelled.

16. Kohnen, S., Nickels, L., & Castles, A. (2009). Assessing spelling skills and strategies: A critique of available resources. *Australian Journal of Learning Difficulties*, 14(1), 113-150.

This article provides an overview of the aspects that need to be considered when assessing children's spelling skills. Grounded in theory of the subprocesses involved in spelling, the authors critically discuss existing assessment tools and analyse what type of information can be retrieved from each

tool. This resource can be used to introduce students to assessment and progress monitoring of spelling skills.

17. Kohnen, S., Colenbrander, D., Krajenbrink, T., & Nickels, L. (2015). Assessment of lexical and non-lexical spelling in students in Grades 1–7. *Australian Journal of Learning Difficulties*, 20(1), 15-38.

This study reports the development of two standardised spelling tests that can be used to assess spelling skills of Australian children in Years 1 to 7. The Diagnostic Spelling Test – nonwords (DiSTn) represents a tool to investigate children’s domain of English sound-letter correspondences, while the Diagnostic Spelling Test – irregular words (DiSTi) provides information on word specific spelling knowledge. Together with the previously mentioned resources by Kohnen et al. (2009) it may serve as an example of two evidence-based spelling assessment instruments with norms for Australian primary school students.

18. Daffern, T., & Ramful, A. (2020). Measurement of spelling ability: construction and validation of a phonological, orthographic and morphological pseudo-word instrument for students in Grades 3–6. *Reading and Writing*, 33(3), 571-603.

This study introduces the development of the Components of Spelling Test (CoST): Pseudo-word version, a spelling test that provided information on children’s reliance on phonological, orthographic, and morphological knowledge involved in spelling. This article complements the previously mentioned resource by Kohnen et al. (2015) by introducing a locally developed spelling assessment tool that also provides information on children’s use of morphological knowledge.

19. The following spelling programs (a-c) and the ACARA spelling progressions (d) can be used to critically analyse, contrast, and compare different approaches to determining scope and sequences.

- a) ‘Letters and Sounds’ from NSW Centre for Effective Reading, NSW Department of Education.
<https://cer.schools.nsw.gov.au/intervention/teacher-resources/phonics-guides.html>

This program (Letters and Sounds 2-7) provides a guide to explicit and systematic teaching of phonics. The guide provides practical suggestions including letter-sound sets for each week, the sequence of teaching in a discrete phonics session, practice items and procedure of teaching the sound-spelling mappings. This program integrates reading and spelling.

- b) ‘SOS: Spelling for older students’ from SPELD SA.
<https://www.speld-sa.org.au/services/sos-spelling-for-older-students.html>

This program provides materials for explicit and systematic teaching of phonics with a spelling focus. The website provides lesson materials and the scope and sequence for the program, which is intended to be taught over 27 weeks.

- c) Fogarty Learning Centre (nd). *From Sounds to Spelling: A teaching sequence*. Edith Cowan University
https://www.ecu.edu.au/_data/assets/pdf_file/0004/656518/From-Sounds-to-Spelling.pdf

This resource provides another scope and sequence and may serve as an additional point of contrast. In addition, materials provide an overview of an explicit teaching sequence for the teaching of spelling.

- d) ACARA national literacy learning progressions- Spelling

The spelling section of the literacy progressions can be used as an additional angle to contrast and compare spelling programs.

20. Word morphology in Literacy Toolkit from Victoria State Government
<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/readingviewing/Pages/litfocuswordmorph.aspx>

This website links to two lists of very common inflectional and derivational morphemes that should be taught in the early primary years. It also contains definitions of relevant linguistic terms.

Resources for preservice teachers

21. Bishop, M.M. (2006). The ABC's and all their tricks: The complete reference book to phonics and spelling.

This reference book briefly explains important linguistic terms such as vowels, consonants, base word, affix, and etymology. It explains spellings in monomorphemic and multisyllabic/morphemic words. The book comes with handy word lists for each spelling which also include short explanations and frequency counts. The book was written for teachers and may be thought of as a useful resource.

22. Daffern, T., Thompson, K., & Ryan, L. (2020). Teaching spelling in context can also be explicit and systematic. *Practical Literacy: The Early and Primary Years*, 25(1), 8

This paper shares lesson plans and observations from explicit spelling lessons in Australian primary schools.

23. Daffern, T., & Ramful, A. (2020). Measurement of spelling ability: construction and validation of a phonological, orthographic and morphological pseudo-word instrument for students in Grades 3–6. *Reading and Writing*, 33(3), 571-603.

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This article provides an overview of the aspects that need to be considered when assessing children's spelling skills. Grounded in theory of the subprocesses involved in spelling, the authors critically discuss existing assessment tools and analyse what type of information can be retrieved from each tool. This resource can be used to introduce students to assessment and progress monitoring of spelling skills.

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27. The following spelling programs can be used to analyse, contrast and compare different approaches to determining scope and sequences.

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- c) Fogarty Learning Centre (nd). *From Sounds to Spelling: A teaching sequence*. Edith Cowan University
https://www.ecu.edu.au/data/assets/pdf_file/0004/656518/From-Sounds-to-Spelling.pdf

This resource provides another scope and sequence and may serve as an additional point of contrast. In addition, materials provide an overview of an explicit teaching sequence for the teaching of spelling.

- d) ACARA national literacy learning progressions- Spelling.

The spelling section of the literacy progressions can be used as an additional angle to critically analyse, contrast, and compare spelling programs.

28. Oakley, G. (2018). Early Career Teachers' Knowledge and Practice in Spelling Instruction: Insights for Teacher Educators. *Australian Journal of Teacher Education*, 43(12), 5.

This article reports the views, knowledge, and practices of Australian early career teachers regarding the teaching of spelling, and their views on their preparation in university courses. Overall, teachers interviewed in this study felt ill-prepared to teach spelling.

29. Robinson-Kooi, S. & Hammond, L. (2020). The Spelling Detective Project: A Year 2 Explicit Instruction Spelling Intervention. *Australian Journal of Teacher Education*, 45 (3).

This paper gives a detailed, yet accessible overview of how to apply explicit teaching when teaching spelling in a Year 2 classroom in Australia.

30. Westwood, P. (2018). Learning to spell: Enduring theories, recent research and current issues. *Australian Journal of Learning Difficulties*, 23(2), 137-152.

This accessible paper provides a nice overview of current theories of spelling and the need for teaching spelling explicitly.

31. Word morphology in Literacy Toolkit from Victoria State Government
<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/readingviewing/Pages/litfocuswordmorph.aspx>

This website links to two lists of very common inflectional and derivational morphemes that should be taught in the early primary years. It also contains definitions of relevant linguistic terms.

Modules 16, 17, and 18: Writing

Module 16 introduces preservice teachers to emergent writing concepts and to processes and strategies that are important for quality writing. It will also introduce the best available evidence on writing instruction and examine the reasons why writing is a challenging capstone literacy skill.

Module 17 builds on this knowledge and examines different evidence-based instructional approaches to improving writing quality. The module will introduce strategies to teach different text types and structures, along with their purposes and linguistic features. It will examine promising evidence and strategies for creating motivating environments, including collaboration, creativity, and digital technologies.

Module 18 will cover effective feedback and assessment practices in writing, including daily metatalk, and self and peer assessment.

The three modules can be offered separately, for example, Module 16 together with oral language, reading, spelling and grammar modules; Module 17 together with other instruction modules, and Module 18 with other assessment modules or the EAL/D Module; or they can be combined into one larger unit. However, the modules are designed so that the information provided in each one builds up knowledge for the next, culminating in the feedback and assessment module.

These modules align with the following Strands and Sub-strands of the Australian Curriculum: English

Strand: Language

Sub-strands: Language variation and change; language for interaction; text structure and organisation; expressing and developing ideas.

Strand: Literature

Sub-strands: Responding to literature; creating literature; interpreting, analysing, evaluation.

Strand: Literacy

Sub-strands: Creating texts.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
16. Learning to Write (any; M3)	<ul style="list-style-type: none"> Text transcription skills including handwriting, keyboarding, and word processing. Examine the research evidence^{1,2,3} for effects on quality, length, and fluency Pre-writing: building knowledge and ideas^{2,4} Balance reading and writing in a literacy-rich environment^{2,4,6} Punctuation and sentence structure^{2,6} Process writing^{2,3,5} Collaborative writing activities^{2,6} Strategy development^{2,5} Self-regulation and goal setting^{2,3,5} 	<p>Workshop focused on building knowledge about skills, processes and strategies that support quality writing will include:</p> <ul style="list-style-type: none"> brainstorming existing knowledge about key elements of writing small groups examining evidence and contributing to a collaborative graphic organiser modelling pre-writing strategies to build ideas and vocabulary through existing knowledge, literature, multimodal texts, and other artefacts small groups designing and practising strategies for teaching sentence structure and punctuation for fluency, meaning and style in authentic texts. <p>Workshop focused on strategy development, self-regulation, and goal setting across all stages of the writing process will include:</p> <ul style="list-style-type: none"> developing a flow chart of the writing process and brainstorming strategies for each stage small groups developing appropriate goals and strategies to differentiate learning across the stages of the writing process reviewing self-regulation strategies and individuals designing their own writing action plan with goals and self-regulation strategies for the semester/year. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> use instructional strategies to build foundational knowledge and skills in writing understand the importance and characteristics of a literacy-rich environment including literature, multimodal texts, and artefacts use and explain strategies for different students and for collaboration at each stage of the writing process understand and implement goals and self-regulation strategies. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Santangelo & Graham, 2016 Graham et al., 2012; Graham et al., 2015; Gillespie & Graham, 2014; Andrews et al., 2009 Morphy & Graham, 2012 Hall et al., 2015; Bingham et al., 2018 Harris et al., 2019; 2015; Wolbers et al., 2015; Harris et al., 2013; Brunstein & Glaser, 2011; Lane et al., 2010; Wong et al., 2008; Ortiz Lienemann et al., 2006 Slavin et al., 2019

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
17. Writing to Express Learning and Ideas (any; M16)	<ul style="list-style-type: none"> Purposes and structures of different text types (text/context) along with their linguistic features^{2,4,6,7} Grammar in context: focus on form and function^{6,7} Authentic purpose and audience⁹ Strategies for creating motivating environments, including multimodal texts, creativity and digital technologies^{2,4,6,10} 	<p>Workshop focused on different text types will:</p> <ul style="list-style-type: none"> examine genre theory and systemic functional linguistics model thinking processes while designing texts with others to foreground choice and function use the process approach, examine and write texts for different audiences and purposes and annotate linguistic features and their functions (collaboratively and individually). <p>Workshop on instructional design will include:</p> <ul style="list-style-type: none"> designing lessons/units that bring together the key elements to support quality writing: transcription; process writing; text types, structures and features; teaching conventions in context; self-regulation, goal setting and strategy development; creativity, multimodal texts and motivating environments; ample writing time. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> describe the purposes and structures of different text types analyse the linguistic features of various texts in different mediums/platforms explain how the genre approach complements process writing design instructional activities that focus on grammar form and function in authentic texts with real audiences design strategies to create motivating and literacy rich environments with a focus on creativity and hybridisation of text types. 	<p>Weight = 2-3</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Graham et al., 2012; Graham et al., 2015; Gillespie & Graham, 2014; Andrews et al., 2009 Hall et al., 2015; Bingham et al., 2018 Slavin et al., 2019 Myhill et al., 2018; 2016; 2013; 2012; Jones et al., 2013 Gadd & Parr, 2016; Purcell-Gates et al., 2007 Mayes et al., 2020

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
18. Writing Feedback and Assessment (2-4; M17)	<ul style="list-style-type: none"> • Metalinguistic knowledge^{6,7} • Metatalk⁷ • Formative assessment^{2,3,6,8} • Self and peer assessment^{6,8} • Assessment rubrics^{2,6} 	<p>Workshop on writing assessment will:</p> <ul style="list-style-type: none"> • examine the evidence on quality feedback • practise metatalk in providing feedback to others on their writing • design formative feedback strategies including self and peer assessment • design a writing rubric including a rationale • use the rubric to assess writing samples. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> 1. demonstrate their metalinguistic knowledge 2. use metatalk to provide feedback on texts 3. design self and peer assessment activities 4. design rubrics to assess writing and explain the underpinning evidence. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <p>2. Graham et al., 2012; Graham et al., 2015; Gillespie & Graham, 2014; Andrews et al., 2009</p> <p>3. Morphy & Graham, 2012</p> <p>6. Slavin et al., 2019</p> <p>7. Myhill et al., 2018; 2016; 2013; 2012; Jones et al., 2013</p> <p>8. Graham et al., 2015</p>

Evidence and Resources

Resources for ITE Providers and Preservice Teachers (examples)

1. ACARA National Literacy Learning Progressions
<https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/writing/>

The national progressions relate directly to the Australian Curriculum English and are useful for sequencing and differentiation.

2. Graham, S., Bollinger, A., Olson, C. B., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2012). *Teaching Elementary School Students to Be Effective Writers: A Practice Guide*. NCEE 2012-4058. What Works Clearinghouse.

This practice guide is based on the findings of their 2012 meta-analysis and is very accessible for preservice teachers to see how evidence can underpin writing strategies.

3. Derewianka, B. & Jones, P. (2012) *Teaching Language in Context*, Oxford University Press.

This is a useful text to explicate the learning and teaching cycle with a suggested sequence.

4. Hochman, J. C., & Wexler, N. (2017). *The writing revolution: A guide to advancing thinking through writing in all subjects and grades*. John Wiley & Sons.

This text presents writing as being in the service of knowledge, has a clear scope and sequence and frameworks for writing that preservice teachers may find helpful.

5. Wing Jan, L. & Taylor, S. (2020) *Write Ways*. Oxford University Press.

This is a practical, user-friendly text. It explains how to teach students to write in all the major text types—not only in English, but across the curriculum. It includes multimodal texts and use of technologies and provides useful examples of classroom practice, planning and assessment.

Evidence

Note: Implementing evidence-based writing instruction is challenging as there is no guarantee that evidence of success in multiple research studies will lead to success in every context. There is not enough evidence about which combinations of practices or how much of each practice is needed to improve writing. Teachers need knowledge and understanding of the strategies that show evidence of improving writing, and they need to monitor their success (with assessment evidence) in specific contexts.

15. Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review*, 28(2), 225-265.

This meta-analysis shows that handwriting instruction produces significant gains in the quality, length, and fluency of students' writing. The findings support previous assumptions that text transcription skills are an important ingredient in writing and writing development.

16. Graham, S., McKeown, D., Kiuahara, S., & Harris, K. R. (2012). A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology*, 104(4), 879.

This comprehensive meta-analysis was designed to identify writing practices with evidence of effectiveness in primary classrooms. They look at three categories of practices: 1) explicit teaching; 2) scaffolding; and 3) other writing activities. The writing practice with the most evidence of effectiveness is strategy instruction, specifically, explicit teaching of general and task-specific strategies for planning, drafting, and revising. When coupled with self-regulation strategies such as goal setting and self-assessment, there is an even greater effect on the quality of student writing. Other explicit teaching practices that are effective include teaching different text structures and forms; teaching visual imagery and creativity; and teaching spelling, handwriting, and keyboarding. Scaffolding strategies that improve writing include collaborative writing; goal setting; pre-writing activities to generate ideas; and regular feedback and assessment. There is some evidence that word processing can also improve writing quality; as can increasing the amount that students write and implementing a comprehensive writing program such as process writing.

Gillespie, A., & Graham, S. (2014). A meta-analysis of writing interventions for students with learning disabilities. *Exceptional Children*, 80(4), 454-473.

This meta-analysis shows that strategy instruction, goal setting, explicitly taught process writing, dictation and pre-writing were also effective for students with a learning disability.

Graham, S., Harris, K. R., & Santangelo, T. (2015). Research-based writing practices and the common core: Meta-analysis and meta-synthesis. *The Elementary School Journal*, 115(4), 498-522.

This meta-analysis included both quantitative and qualitative studies. It takes both a social contextual and a cognitive/motivational approach. Findings support previous reviews of experimental studies to report effective practices for improving writing: providing a motivating environment and routines that encourage children to write frequently; using a process writing approach with strategy development and goal setting; collaborative writing and word processing; providing regular feedback; teaching text transcription and sentence construction skills; pre-writing and vocabulary activities to build subject knowledge; structures and models of different text types; and using writing to learn across subject areas.

Andrews, R., Torgerson, C., Low, G., & McGuinn, N. (2009). Teaching argument writing to 7-to 14-year-olds: an international review of the evidence of successful practice. *Cambridge Journal of Education*, 39(3), 291-310.

This systematic review on persuasive writing supports other findings about practices that improve writing: process writing; strategy development and goal setting; peer collaboration; and teacher modelling of argumentative writing.

17. Morphy, P., & Graham, S. (2012). Word processing programs and weaker writers/readers: A meta-analysis of research findings. *Reading and Writing*, 25(3), 641-678.

This meta-analysis shows that use of word processing programs increases motivation for writers, and improves the quality, length, and organisation of writing. When used alongside regular feedback and a process approach to writing, effects on quality were even greater.

18. Emergent writing:

Hall, A. H., Simpson, A., Guo, Y., & Wang, S. (2015). Examining the effects of preschool writing instruction on emergent literacy skills: A systematic review of the literature. *Literacy Research and Instruction*, 54(2), 115-134.

The primary purpose of this article is to provide a systematic analysis of research studies investigating preschool writing instruction to improve children's emergent literacy skills. This systematic review with

a meta-analysis component builds on previous meta-analyses and narrative summaries of research. The authors report that environments rich in print and language experiences hold promise as a means to promote lengthier and more complex literacy-related play. Specifically, this study suggests the importance of providing literacy objects within play settings that can stimulate and encourage children to participate in meaningful literacy behaviours. In addition, they suggest that teachers who provide guidance or scaffolding and embed explicit instruction within the context of authentic writing activities are likely to facilitate young children's early literacy development. These findings are good precursors to primary classroom evidence in relation to providing a motivating environment and scaffolding/teaching in context.

Neumann, M. M., & Neumann, D. L. (2014). Touch screen tablets and emergent literacy. *Early Childhood Education Journal*, 42(4), 231-239.

This paper reviews the use of touch screen tablets in early childhood. It shows the potential for tablets to enhance early literacy, particularly when quality applications are used and are scaffolded by adults.

Pinto, G., Tarchi, C., & Bigozzi, L. (2020). Improving children's textual competence in kindergarten through genre awareness. *European Journal of Psychology of Education*, 35(1), 137-154.

This paper reports on the effects on textual competence of a genre awareness intervention in kindergarten. Findings show that introducing and scaffolding genres with kindergarten children can improve their awareness of textual properties and their purposes, as well as competence in producing oral forms of narrative, letter, and instruction genres.

Bingham, G. E., Quinn, M. F., McRoy, K., Zhang, X., & Gerde, H. K. (2018). Integrating writing into the early childhood curriculum: A frame for intentional and meaningful writing experiences. *Early Childhood Education Journal*, 46(6), 601-611.

This paper supports the earlier Hall et. al. systematic analysis in regards to providing motivating environments and scaffolding writing attempts in the early years.

19. Strategy development and self-regulation: This approach has the most evidence of any writing practice to improve writing quality and motivation to write. These effects are shown for both able and struggling writers.

Harris, K. R., Ray, A., Graham, S., & Houston, J. (2019). Answering the challenge: SRSD instruction for close reading of text to write to persuade with 4th and 5th Grade students experiencing writing difficulties. *Reading and Writing*, 32(6), 1459-1482.

Harris, K. R., Graham, S., & Adkins, M. (2015). Practice-based professional development and self-regulated strategy development for Tier 2, at-risk writers in second grade. *Contemporary Educational Psychology*, 40, 5-16.

Wolbers, K. A., Dostal, H. M., Graham, S., Cihak, D., Kilpatrick, J. R., & Saulsbury, R. (2015). The writing performance of elementary students receiving strategic and interactive writing instruction. *Journal of Deaf Studies and Deaf Education*, 20(4), 385-398.

Harris, K. R., Graham, S., Friedlander, B., & Laud, L. (2013). Bring powerful writing strategies into your classroom! Why and how. *The Reading Teacher*, 66(7), 538-542.

Brunstein, J. C., & Glaser, C. (2011). Testing a path-analytic mediation model of how self-regulated writing strategies improve fourth graders' composition skills: A randomized controlled trial. *Journal of Educational Psychology*, 103(4), 922-938.

Lane, K. L., Graham, S., Harris, K. R., Little, M. A., Sandmel, K., & Brindle, M. (2010). Story Writing. *Journal of Special Education*, 44(2), 107-128. <https://doi-org.simsrad.net.ocs.mq.edu.au/10.1177/0022466908331044>

Wong, B. Y., Hoskyn, M., Jai, D., Ellis, P., & Watson, K. (2008). The comparative efficacy of two approaches to teaching sixth graders opinion essay writing. *Contemporary Educational Psychology*, 33(4), 757-784.

Ortiz Lienemann, T., Graham, S., Leader-Janssen, B., & Reid, R. (2006). Improving the writing performance of struggling writers in second grade. *The Journal of Special Education*, 40(2), 66-78.

20. Slavin, E.R., Lake, C., Inns, A., Baye, A., Dachtel, D., Haslam, J. (2019). *A Quantitative Synthesis of Research on Writing Approaches in Years 3 to 13*. London: Education Endowment Foundation. The report is available from:
https://educationendowmentfoundation.org.uk/public/files/Writing_Approaches_in_Years_3_to_13_Evidence_Review.pdf

In this review of writing interventions in regular classrooms, Slavin and colleagues report on the outcomes of writing programs on student achievement. Their review supports many of the findings from the earlier (2012) review from Graham and colleagues. They report key characteristics of programs that produce good outcomes: 1) use of cooperative learning; 2) structured approaches guiding various genres; 3) high levels of feedback, including self and peer assessment; 4) a balance of reading and writing; 5) motivating environments; 6) explicit teaching of conventions in context; and 7) teacher PD.

21. Teaching grammar in context: A number of papers report improvements in writing when grammar is intrinsically linked to the demands of the writing being taught. For most improvement, specific, metalinguistic feedback from teachers that addresses function rather than just form is important. More able writers experienced the most gains in this approach to teaching grammar in context.

Myhill, D., Jones, S., & Lines, H. (2018). Supporting less proficient writers through linguistically aware teaching. *Language and Education*, 32(4), 333-349.

Myhill, D., Jones, S., & Wilson, A. (2016). Writing conversations: fostering metalinguistic discussion about writing. *Research Papers in Education*, 31(1), 23-44.

Myhill, D., Jones, S., Watson, A., & Lines, H. (2013). Playful explicitness with grammar: A pedagogy for writing. *Literacy*, 47(2), 103-111.

Jones, S., Myhill, D., & Bailey, T. (2013). Grammar for writing? An investigation of the effects of contextualised grammar teaching on students' writing. *Reading and Writing*, 26(8), 1241-1263.

Myhill, D. A., Jones, S. M., Lines, H., & Watson, A. (2012). Re-thinking grammar: the impact of embedded grammar teaching on students' writing and students' metalinguistic understanding. *Research Papers in Education*, 27(2), 139-166.

22. Graham, S., Hebert, M., & Harris, K. R. (2015). Formative assessment and writing: A meta-analysis. *The Elementary School Journal*, 115(4), 523-547.

This meta-analysis found that feedback to students about writing from adults, peers, self, and computers enhanced writing quality. Monitoring of student progress over time had no significant effect on writing quality. These are important findings that suggest regular, formative assessment that provides feedback directly to students on a daily basis will improve writing quality.

23. These papers report a positive impact on writing when teachers select authentic and purposeful writing tasks, and when students are involved in the selection and construction of learning tasks.

Gadd, M., & Parr, J. M. (2016). It's all about Baxter: task orientation in the effective teaching of writing. *Literacy*, 50(2), 93-99.

Purcell-Gates, V., Duke, N. K., & Martineau, J. A. (2007). Learning to read and write genre-specific text: Roles of authentic experience and explicit teaching. *Reading Research Quarterly*, 42(1), 8-45.

24. Mayes, A. S., Coppola, E. C., & Fa, B. (2020). Using Theatre to Develop Writing Skills: The Story Pirates Idea Storm. *The Reading Teacher*, 73(4), 473-483.

This paper supports previous meta-analyses findings that scaffolding creativity can improve writing.

Module 19: Knowledge about Grammar and Texts

This module introduces preservice teachers to knowledge about language for teaching the Australian Curriculum: English, with a focus on grammar and its relationship to meaning in whole texts. The unit principally addresses teacher content knowledge for the Language strand of the national curriculum, but the unit should ideally be delivered by integrating it with introductory content relevant to both the Literature and Literacy strands. In particular, preservice teachers will understand how language features support the development of meaning in different types of texts (examples to be selected from a range of non-fiction and fictional literature, and from children's work samples). The module will also establish the relevance of knowledge about grammar for explicit teaching in support of children's literacy development (e.g. reading with understanding and appreciation of language choices, making principled decisions in writing).

It is anticipated and indeed to be encouraged that content addressed in this module will intersect with content in other modules, e.g. oral language, reading, writing. Given this module's focus on knowledge about language (especially grammar and text structure), the module could also be productively combined with modules covering other aspects of language description, e.g. phonemic awareness.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
19. Knowledge about Grammar and Texts (any; M3)	<ul style="list-style-type: none"> Language for expressing ideas (experiential meanings): processes and verbs; participants and noun groups including pronouns and adjectives; adverbials^{8,9,10,11,12} Language for connecting ideas (logical meanings): identifying the clause as the basic unit of meaning; combining clauses to create different types of sentences; role of conjunctions^{8,9,10,11,12} Language for interacting with others (interpersonal meanings): the grammar of statements, questions, commands and offers; subject/verb agreement; terms of address; language of opinion and evaluation; modality^{8,9,10,11,12} Language for creating well-organised texts (textual meanings): openers at the text, paragraph, and sentence level; grammatical theme; patterns of given/new and cohesion^{8,9,10,11,12} Integration of all the above kinds of grammatical choices for achieving different purposes: genre and types of texts^{8,9,10,11,12} Pedagogical knowledge for teaching grammar in the context of authentic texts^{1, 2, 3, 4, 5,} 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> analyse examples of grammar in context from authentic texts^{8, 9, 10, 11, 12, 13, 14, 15} engage in games and playful activities which consolidate their own learning of grammar concepts and develop knowledge of suitable activities for teaching children explicit knowledge about language^{16,17,18} evaluate the language choices made in authentic texts including literature for children and student work samples, identifying text structure and grammar features (resources already listed are relevant). 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> analyse authentic text into clauses and identify language features across experiential, logical, interpersonal and textual meanings evaluate how different types of texts deploy language choices to achieve their purposes and rhetorical effects plan some learning experiences for children which explicitly teach about types of texts and their language / grammar features. 	<p>Weight = 3-4</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Myhill et al., 2012 Macken-Horarik et al., 2018 Schleppegrell et al., 2008 Williams, 2016 Locke, 2010 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Christie, 2005 Derewianka, 2011 Derewianka, 2020 Derewianka & Jones. 2016 Humphrey et al., 2012 McDonald, 2017 Rossbridge & Rushton, 2010 Rossbridge & Rushton, 2011 Cochrane et al., 2013 Exley & Kervin, 2013 Exley et al., 2015

Evidence and Resources

Evidence

In the evidence review for this module, it should be noted that the content for the module derives from the demands of the Australian Curriculum: English. The research evidence here is not directed towards that content specifically, but rather towards the more general notion of teaching knowledge about grammar – and doing so in the context of its relevance to understanding language in use.

1. Myhill, D., Jones, S. M., Lines, H., & Watson, A. (2012). Re-thinking grammar: The impact of embedded grammar teaching on students' writing and students' metalinguistic understanding. *Research Papers in Education*, 27(2), 139–166. doi: 10.1080/02671522.2011.637640

This important landmark paper in the field reports on a robust randomised controlled trial in the UK, in which teaching grammar explicitly in the context of authentic texts and for application to genuine writing needs supported statistically significant improvements in writing. A key mitigating factor was teachers' 'linguistic subject knowledge', that is, the level of knowledge about language which teachers needed in order to be able to teach grammar with confidence and flexibility.

2. Macken-Horarik, M., Love, K., Sandiford, C. & Unsworth, L. (2018). *Functional grammatics: Re-conceptualizing knowledge about language and image for school English*. Routledge.

This book includes both a rationale for the teaching of grammar in the context of meaningful purposes, and examples of case studies of teaching grammar from a recent Australian ARC-funded project conducted across a range of metropolitan and regional schools.

3. Schleppegrell, M. J., Greer, S., & Taylor, S. (2008). Literacy in history: Language and meaning. *Australian Journal of Language and Literacy*, 31(2), 174–187.

This paper reports on the teaching of knowledge about grammar in the context of learning history in middle to high school. Results of the quasi-experimental study were that English language learners improved in writing and in learning historical content through a program in which their history teachers adopted a focus on language, including grammar. Results for these students were statistically significantly better than for the students who did not participate in the intervention. While not directly a study on primary school teaching, nor Australian in origin, the approach taken of integrating learning about grammar with contexts of application (in this study, both reading and writing) is the same general approach endorsed by the Australian Curriculum: English.

4. Williams, G. (2016). Reflection literacy in the first years of schooling: Questions of theory and practice. In W. L. Bowcher & J. Y. Liang (Eds), *Society in language, language in society: Essays in honour of Ruqaiya Hasan* (pp.333–356). London, England: Palgrave Macmillan.

Williams outlines examples of children in case study classes learning to reflect on language using grammar as a tool for thinking about meaning in texts. The book chapter provides evidence for the merit of introducing young children to knowledge about language in ways that are meaningful to them and purposefully oriented towards supporting their literacy development.

5. Locke, T. (Ed.) (2010). *Beyond the grammar wars: A resource for teachers and students on developing language knowledge in the English / literacy classroom* (pp. 206–229). Routledge.

Chapters in this book address the historical context of research about teaching grammar, and provide some examples of approaches that align with the teaching of grammar in the Australian Curriculum: English.

6. Andrews, R., Torgerson, C., Bevertson, S., Locke, T., Low, G., Robinson, A., & Zhu, D. (2004). The effect of grammar teaching (syntax) in English on 5 to 16-year olds' accuracy and quality in written composition. *Research Evidence in Education Library*. EPPI-Centre, Social Science Research Unit, Institute of Education.

This systematic review adopted a narrative review method as studies available at the time did not permit statistical meta-analysis. The review has since been superseded by the work of Myhill and colleagues (see below). The report is included here for historical context rather than because it provides the most relevant recent research. At the time of its publication, the review offered a counter to a prevailing folklore that grammar teaching would have a negative impact on writing. In 2004, the view of the review panel was that there was insufficient evidence either for or against teaching grammar for writing at that time.

7. Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, 99(3), 445–476. doi: 10.1037/0022-0663.99.3.445

This meta-analysis, like the report by Andrews and colleagues cited above, is mainly of historical interest now, for the same reasons as given for Andrews et al. (2004). The meta-analysis found a statistically negative effect of teaching grammar (-0.32), although this was based on a relatively small number of studies (11 treatments from ten studies, including two unpublished doctoral dissertations from the 1960s). The effect size needs to be considered in the context of a lack of homogeneity of results across studies, so that the effects of teaching grammar on writing varied from quite negative (-1.40) to quite positive (1.07), with the most positively evaluated study singled out by the authors for being different in its approach from the others. In that study, the teaching of grammar was of the kind recommended in the Australian Curriculum: English in that it was focused on function and application.

Resources for ITE Providers and Preservice Teachers

8. Christie, F. (2005). *Language education in the primary years*. UNSW Press.

This is an accessible resource for preservice teachers. Chapters 4, 5 and 10 are most relevant to this module.

9. Derewianka, B. (2011). *A new grammar companion for teachers*. Primary English Teaching Association.

This is a useful resource for preservice and practising teachers for understanding the approach to grammar taken in the Australian Curriculum: English. Chapter One provides an outline of the functional model of language, and Chapters Two to Five detail ways of describing language in terms of both form and meaning, using traditional school grammar and functional terms. Examples from authentic texts are provided, and the book includes numerous points of relevance to ways in which knowledge about language can be used to support students' learning. In these ways, the book supports the explicit teaching of grammar.

10. Derewianka, B. (2020). *Exploring how texts work* (2nd ed.). Primary English Teaching Association, Australia.

This is a new edition of a long-serving and well-regarded resource for teachers in Australia. The book provides accessible descriptions of different types of texts and their language features.

11. Derewianka, B., & Jones, P. (2016). *Teaching language in context* (2nd ed.). Oxford University Press.

This textbook would support an approach to teaching grammar which takes different types of texts as the starting point, and then considers the language choices and grammar patterns most relevant to

the realisation of those texts and their social purposes. This 'top-down' approach has much to recommend it, as the relevance of learning about grammar in relation to whole texts is made readily appreciable. It would also be a useful resource for ITE providers who may prefer to teach this module's content by integrating it with other disciplinary literacy / writing modules. For example, Chapter Four on 'Language for appreciating and creating story worlds' would have synergies with the 'Literature' modules (25, 26); Chapter Five on 'Language for recounting what happened' would support Module 29 on 'Historical literacy'. As well as examples of texts and their features, the book offers margin definitions of key terms, 'have a go' activities to apply analytical skills, and 'in the classroom' suggestions for practice.

12. Humphrey, S., Droga, L., & Feez, S. (2012). *Grammar and meaning* (2nd ed.). Primary English Teaching Association Australia.

This is both a resource for learning about grammar and a workbook for preservice teachers, with questions in each chapter and worked answers in the back. The chapters' contents align directly to the same chapter numbers in Derewianka (2012), and the two are intended as companion volumes.

13. McDonald, L. (2017). *A literature companion for teachers* (2nd ed.). Primary English Teaching Association Australia.

Includes valuable content on teaching of grammar in relation to literary texts.

14. Rossbridge, J. & Rushton, K. (2010). *Conversations about text 1: Teaching grammar using literary texts*. Primary English Teaching Association Australia.

15. Rossbridge, J. & Rushton, K. (2011). *Conversations about text 2: Teaching grammar using factual texts*. Primary English Teaching Association Australia.

These two companion books provide examples of interesting and meaningful ways to teach grammar in context in the classroom. Key terms are explained; prior knowledge of grammar is not assumed.

16. Cochrane, I., Reece, A., Ahearn, K. & Jones, P. (2013). *Grammar in the early years: A games-based approach*. *PETAA Paper*, 192. Primary English Teaching Assoc. Australia.

This short monograph describes engaging and meaningful classroom activities for teaching children knowledge about grammar.

17. Exley, B. & Kervin, L. (2013). *Playing with grammar in the primary years: Learning about Language in the Australian Curriculum: English*. Australian Literacy Educators' Association.

This book provides examples of activities suitable for the classroom (Years Foundation–Year 2) for teaching grammar explicitly and in the context of applications to language in use. The content is aligned to the Australian Curriculum: English.

18. Exley, B., Kervin, L. & Mantei, J. (2015). *Exploring with grammar in the primary years: Learning about Language in the Australian Curriculum: English*. Australian Literacy Educators' Association.

This book provides examples of activities suitable for the classroom (Years 3–6) for teaching grammar explicitly and in the context of applications to language in use. The content is aligned to the Australian Curriculum: English.

Modules 20 and 21: Visual Literacy and Multimodal Literacy

These two modules introduce preservice teachers to knowledge required for teaching and assessing skills for engaging with and authoring visual and multimodal texts across the curriculum. Both modules draw on models for analysing images and multimodal texts and for teaching visual and multimodal literacy that pay attention to the three broad types of meaning, or functions of communication, recognised in Halliday's social semiotic, functional model of language: (1) representing experience and ideas; (2) interacting with the audience and evoking attitudes; (3) creating cohesive and coherent texts. This offers preservice teachers a unified and sufficiently broad framework they can use to analyse, discuss and teach about linguistic, visual, visual-verbal and multimodal patterns in texts. Social semiotic approaches to text analysis bring together both meaning and form, such as relating text purpose and audience to grammatical features and concrete visual design elements, which are all included in the language strand of the English curriculum.

Module 20 focuses on visual literacy, which is essential for the literacy modes of viewing and representing in the English curriculum. Specifically, it offers an introduction to multiliteracies pedagogies, engages students in considering theories and approaches to teaching and assessing visual literacy, and a framework for analysing, describing and discussing still and moving images and visual design, which attends to resources of expression as well as broader semantic principles. Students will also consider various sites and texts for teaching and assessing critical viewing.

Module 21 focuses on multimodality, the meaning-making potential and interaction of different modes and media of communication, and multimodal perspectives on literacy. It engages preservice teachers in developing a metalanguage for describing and discussing visual-verbal relations in persuasive, imaginative, and informative texts, examining the multimodal literacy of texts and learning across the curriculum, and authoring multimodal texts for primary school students.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
20. Visual Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> Visual Literacy: theories and approaches to teaching and assessment of visual literacy^{2,3,4,5,9} Analysing, describing, and discussing still and moving images and visual design^{2,3,4,5, 6, 7, 8,10, 11} Resources of expression: colour, line/vectors, shape, layout, light, camera angle and movement, video/film editing techniques, typography Semantic principles: <ul style="list-style-type: none"> Representing experience and developing ideas: Narrative and Conceptual representations Interacting and relating to others: Perspective/Point of view; Modality; Power; Involvement; Ambience Composition: Salience, Information Value, Framing Sites and texts for teaching and assessing critical viewing: painting, advertisements, picture books, graphic novels, comics, commercials, animations, film^{4,7,8,9,10,11} 	<p>Workshops will include:</p> <ul style="list-style-type: none"> analysing images from advertisements and picture books and evaluate their effectiveness developing lesson plans and resources for engaging learners in examining the use of a particular visual resource of expression (e.g. colour) or semantic principle (e.g. salience) in (st)age-appropriate ways developing activities that provide authentic opportunities to develop and assess learners' critical visual literacy. 	<p>At the end of this module, preservice teachers will be able to:</p> <ol style="list-style-type: none"> analyse how visual expression choices combine to realise representational, interactional, and compositional meaning in still and moving images from a range of contexts evaluate the effectiveness of images and visual design elements (e.g. typography, layout) in helping a text achieve its social purpose and supporting knowledge building across KLAs learning experiences that explicitly teach learners about visual design. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Callow, 2006 Barbot, et al., 2013 Lopatovska et al., 2016 Pantaleo, 2017 Pantaleo, 2018 <p><u>Resources:</u></p> <ol style="list-style-type: none"> New London Group, 1996/2000 Kress & Van Leeuwen, 2020 [2006, 1996] Serafini, 2014 Callow, 2013 Unsworth, 2001 Callow, 2008

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
21.Multimodal Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> Multimodality as the meaning-making potential and interaction of different modes and media of communication¹² and multimodal perspectives on literacy^{1,8,13, 14} Multimodal literacy^{4,13,14} Visual-verbal relations in persuasive, imaginative, and informative texts^{15,16} Multimodal literacy across the curriculum^{8, 20} Critical and creative engagement with and authoring of multimodal texts^{17,18, 20, 21} Assessing multimodal literacy^{5,9,13,19, 20} Storytelling across media^{21, 22} 	<p>Workshops will help preservice teachers to:</p> <ul style="list-style-type: none"> evaluate visual-verbal relations in teaching materials across different KLAs in F-6 contexts analyse a multimodal text to demonstrate how the author uses language, images, and/or other semiotic modes to represent ideas and experience, interact with and relate to the audience, and achieve cohesion and coherence evaluate the use and interaction of modes in transmedia narratives (e.g. a picture book and an animated movie representing the same narrative) and/or engaging in discussion of how a narrative scene can be adapted from one medium into another collaborate to design a multimedia text to teach a particular concept in a KLA such as science or history. 	<p>At the end of this module, preservice teachers will be able to:</p> <ol style="list-style-type: none"> analyse visual-verbal relations in different types of texts examine multimodal interaction and its effectiveness for teaching across KLAs plan experiences that engage learners in engaging with, discussing and critically analysing, as well as collaboratively authoring multimodal texts. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <p>12. Kress, 2010</p> <p>13. Jewitt, 2008</p> <p>16. Callow, 2020</p> <p>18. Unsworth & Macken-Horarik, 2015</p> <p>20. Jones et al., 2020</p> <p>21. Simpson & Walsh, 2015; Thomas, 2012</p> <p><u>Resources:</u></p> <p>14. Mills, 2016; Mills & Unsworth, 2017</p> <p>15. Unsworth, 2006</p> <p>17. French, 2017; Rankine & Callow, 2017; Walsh, 2011</p> <p>19. Anstey & Bull, 2018; Bull & Anstey, 2019</p> <p>22. Barton & Unsworth, 2014; Unsworth, 2013, 2014a, b, c;</p>

Evidence and Resources

Documents referenced in the outline

1. New London Group. (1996). A Pedagogy of Multiliteracies: Designing Social Futures. *Harvard Educational Review*, 66, 60-92. [Reprinted in: Cope, B., & Kalantzis, M. (Eds.). (2000). *Multiliteracies: Literacy Learning and the Design of Social Futures*. Macmillan Publishers Australia Pty Ltd.]

This article laid the foundations for the development of visual, multimodal, and critical literacy pedagogies. The New London Group argued that social changes require a new approach to literacy pedagogy that reflects (1) the multiplicity of communications modes and media involved in making meaning and (2) the world's cultural and linguistic diversity. Multiliteracies pedagogies are promoted as a means of achieving the fundamental mission of education – “to ensure that all students benefit from learning in ways that allow them to participate fully in public, community and economic life.” (p. 60).

2. Callow, J. (2006). Images, politics and multiliteracies: using a visual metalanguage. *Australian Journal of Language and Literacy*, 29(1), 7-23.

The article reports on a classroom-based study in which 28 Year 6 students, from a low SES school with 60% of the students having English as an additional language, were engaged in analysing and designing political pamphlets as part of a unit of work in HSIE that also focused on visual and critical literacy. What enabled students to critically and creatively engage with this task was (1) introducing them to a metalanguage for interpreting and discuss their own work and the work of others, and (2) keeping them informed about politics and power relations in their communities.

3. Serafini, Frank. (2014). *Reading the visual: An introduction to teaching multimodal literacy*. Teachers College Press.

The book presents an accessible and engaging introduction to different theories and approaches to teaching visual and multimodal literacy. It offers activities that preservice teachers can complete to develop their own visual and multimodal literacy, and proposals for units of study that focus on postmodern picture books, wordless picture books, historical fiction picture books, informational picture books, illustrated novels, comics, cartoons, advertisements, news reports, film, and digital media.

4. Kress, G., & Van Leeuwen, T. (2020 [2006,1996]). *Reading images: The grammar of visual design* (2nd ed.). Routledge.

Kress & Van Leeuwen present a framework for analysing images and visual design that relates resources of expression (colour, layout, lines, shapes, etc.) to the meanings they can be (co)deployed to create in images and visual documents. Based on Halliday's functional model of language, the framework has been widely adopted in educational research and teaching practices across the world to examine and teach how images represent experience and ideas, construct a relationship with the audience to evoke feelings and attitudes, and create visual cohesion through principles of composition.

5. Callow, J. (2013). *The shape of text to come*. Primary English Teaching Association Australia (PETAA).

This textbook offers a social semiotic framework designed for use by primary teachers as well as preservice teachers working with visual and multimodal texts across different curriculum areas. The framework can be applied to the analysis of images, language and their interaction in multimodal texts, and is introduced and illustrated using various texts (advertisements, websites, picture books, artworks, etc.) as well as associated classroom strategies and activities for teaching and assessing visual and multimodal literacy.

6. Barbot, B., Randi, J., Tan, M., Levenson, C., Friedlaender, L., & Grigorenko, E. L. (2013). From perception to creative writing: A multi-method pilot study of a visual literacy instructional approach. *Learning and individual differences*, 28, 167-176.

Adopting a broad view of visual literacy, as “the set of skills used to ascertain meaning in visual stimuli (e.g., visual art, pictures, or abstract representations)”, the authors introduce a new teaching approach, the PIE approach, which engages children in the Perception and Interpretation of visual art followed by Expression, the creation of written stories, with the aim of promoting writing development. Three multi-method exploratory studies are presented to evaluate the PIE approach: (1) pre/post-test of Year One and Two children observing and describing works of art at Time 1 & T2; (2) experimental, longitudinal study of the effect of the PIE approach on the quality of narrative and originality in a group of Year One and Two children with PIE instruction, and a control group without PIE at baseline and three other points; 3) qualitative retrospective think-aloud, interview-based study of the students' writing processes for 16 students in experimental group from Study 2. The PIE program contributed to improvement in vocabulary, narrative structure and originality in writing and thinking skills involved in writing. The authors argue that vocabulary, as well as writing skills, develop through combination and extension of multiple literacies.

7. Lopatovska, I., Hatoum, S., Waterstraub, S., Novak, L., & Sheer, S. (2016). Not just a pretty picture: Visual literacy education through art for young children. *Journal of Documentation* 72(6), 1197-1227.

The authors conducted semi-structured interviews about fine art paintings with 17 children, aged four to six years old. A qualitative analysis of children's responses before and following basic visual literacy teaching revealed that the children displayed extensive knowledge of simple visual literacy elements (color, shape, line), and limited understanding of more abstract elements (perspective and salience). Explicit teaching in both types of elements is therefore beneficial.

8. Unsworth, L. (2001). *Teaching multiliteracies across the curriculum*. Open University Press.

The book's central premise is that the dimensions of school literacies are changing across different disciplines. Integrating Halliday's functional model of language, Kress & Van Leeuwen's (1996) framework for analysing images and visual design, and a critical orientation to literacy. Unsworth offers a model for distinguishing the multimodal literacy demands of school science and humanities subjects as well as for exploring multimodal meaning-making in literature for children. The final three chapters of the book discuss 'classroom practicalities' or how teachers can develop and implement multiliteracies pedagogies in the early years of school, in content area teaching, and in the English classroom.

9. Callow, J. (2008). Show me: Principles for assessing students' visual literacy. *The Reading Teacher*, 61(8), 616-626.

This paper offers a theoretical overview of key concepts in multiliteracies, with a focus on visual images. Callow then reviews broader assessment criteria in multiliteracies studies and integrates some of the practices from these studies with theoretical principles and a metalanguage for analysing and responding to visual art (drawing on Kress & Van Leeuwen, 2006 and others), and proposes and illustrates a framework of assessment questions and tasks, which could be applied in F-6 classrooms.

10. Pantaleo, S. (2017). Critical thinking and young children's exploration of picturebook artwork. *Language and Education*, 31(2), 152-168.

The article reports on a classroom-based project with Year 2 students that explored the relationship between the development of children's understanding of elements of visual art and design and their comprehension, interpretation, and analysis of the artwork in picture books, and subsequent use of visual elements in creating multimodal print texts. The findings suggest that students' critical literacy and aesthetic appreciation can be enhanced through explicit teaching about elements of visual art and design in picture books.

11. Pantaleo, S. (2018). Elementary students' meaning-making of graphic novels. *Language and Education*, 32(3), 242-256.

The article presents a qualitative study that examined Year 4 students' classroom-based participation in reading and discussion of, and writing about, graphic novels. Students engaged in activities that focused on elements of visual art and design and conventions of the medium of comics. The content analysis of their responses to graphic novels revealed that learning about images and the comics medium shaped their aesthetic understanding of and critical thinking about the graphic novels.

12. Kress, G. R. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Taylor & Francis.

Kress, who founded the field of multimodality as an approach to extending the study of communication and focus of literacy education beyond language, provides an accessible and richly illustrated social semiotic framework for understanding how different modes and media of meaning-making interact in everyday communication.

13. Jewitt, C. (2008). Multimodality and literacy in school classrooms. *Review of Research in Education*, 32, 241-267. <https://doi.org/10.2307/20185117>

Focusing on school classrooms as a key site of literacy and learning, this review discusses expanded approaches to literacy education by examining research literature in new literacies studies, multiliteracies, and multimodality. It then explores contemporary conceptualisations of literacy in the school classroom by focusing on multimodal perspectives on pedagogy, design, efforts to build on the literacy worlds of students, and different ways of representing curriculum knowledge and learning. The paper concludes with a discussion of future directions for multiliteracies pedagogies, curriculum policy and schooling.

14. Mills (2016) and Mills & Unsworth (2017) review approaches to teaching and researching literacies from multimodal and critical perspectives.

Mills, K. A. (2016). *Literacy theories for the digital age: Social, critical, multimodal, spatial, material and sensory lenses*. Channel View Publications.
<http://ebookcentral.proquest.com/lib/mqu/detail.action?docID=4090983>

This book critically reviews a range of classic and more recent paradigms that acknowledge the role of multimodality, place, the senses, materiality and digital media in literacy education and research: socio-cultural literacy theory (known as New Literacy Studies), critical literacies, multimodal literacies, socio-spatial literacies, socio-material literacies, and sensory literacies. The author proposes 'sensory literacies' as an approach based on principles of experiential learning from cultural anthropology and social geography.

Mills, K., & Unsworth, L. (2017). Multimodal literacy. In G. W. Noblit (Ed.), *The Oxford Research Encyclopedia, Education*. doi:10.1093/acrefore/9780190264093.013.232.

This article offers a definition of multimodality and multimodal literacy, and overviews multimodal semiotic theory, with a specific focus on the interaction between multimodal literacy theory and educational practice. It introduces foundational concepts in multimodality and a synthesis of research on multimodality and technology, writing, and writing in contemporary teaching and assessment practices.

15. Unsworth, L. (2006). Towards a metalanguage for multiliteracies education: Describing the meaning-making resources of language-image interaction. *English Teaching: Practice and Critique*, 5(1), 55-76. Retrieved from education.waikato.ac.nz/research/files/etpc/files/2006v5n1art4.pdf

Unsworth offers an accessible framework for describing visual-verbal relationships that can be applied to texts from different genres and disciplines, and argues for the need to introduce students to a language for discussing these relationships, in addition to tools for separately attending to and analysing language use and visual design.

16. Callow, J. (2020). Visual and verbal intersections in picture books – multimodal assessment for middle years students. *Language and Education*, 34(2), 115-134. doi:10.1080/09500782.2019.1689996.

This article focusses on 11 middle years students (Year 6) who participated in a larger study as they read and discussed a range of features from an award-winning picture book. A framework for discussing visual-verbal relationships and principles and strategies for assessing students' multimodal knowledge, comprehension and use of visual metalanguage are discussed. The assessment strategies used in the study included discussion, questioning and an activity in which students created visual texts. The findings have implications for planning effective strategies for assessing multimodal literacy in the classroom.

17. The following sources offer examples of students engaging critically with visual and multimodal texts in primary classrooms.

French, R. (2017). 'The picture is pleading to us to help': Primary school children interpret a persuasive online video. *Practical literacy: The early and primary years*, 22(3), 29–31.

Rankine, A., & Callow, J. (2017). "It's all lighted up, because this is a happy ending." Beginning critical literacy – young children's responses when reading image and text. *Scan* 36 (4), 46-54.

Walsh, M. (2011). *Multimodal literacy. Researching classroom practice*. Primary English Teachers Association.

18. Unsworth, L., & Macken-Horarik, M. (2015). Interpretive responses to images in picture books by primary and secondary school students: Exploring curriculum expectations of a 'visual grammatics'. *English in Education*, 49(1), 56-79.
<https://doi.org/10.1111/17548845.2015.11912522>

This study investigated how students in Grades 4, 5, 7 and 10 – following an intensive professional learning program undertaken by their teachers - were introduced to and used a visual metalanguage for discussing visual design in their oral and written interpretations of picture books. Students' responses to visual images in picture books varied from tactical (not engaging with key themes in the text) to diegetic (referring to the story world) to semiotic (using semiotic knowledge and appropriate metalanguage). The authors argue that students need to be taught explicitly how to write interpretive responses to multimodal literary texts, drawing on an articulated visual and verbal metalanguage appropriate to the teaching of English in primary and secondary schools.

19. Leading multiliteracies scholars Anstey & Bull's two complementary volumes that offer rich knowledge and ideas for multiliteracies pedagogies and research.

Anstey, M., & Bull, G. (2018). *Foundations of multiliteracies: Reading, writing and talking in the 21st century*. Routledge.

This volume presents foundational knowledge about the new and continuously changing literacies of the 21st century; overview of how the five key semiotic systems (linguistic, visual, auditory, gestural and spatial) contribute to the reading and writing of complex multimodal and/or dynamic multimedia texts; and the concept of dialogic talk as means of developing effective pedagogies for the teaching and learning of multiliteracies and multimodality.

Bull, G., & Anstey, M. (2019). *Elaborating multiliteracies through multimodal texts: Changing classroom practices and developing teacher pedagogies*. Routledge.

This volume offers a more comprehensive treatment of multiliteracies, classroom talk, planning, pedagogy and practice, and introduces an action learning model, which educators can be employed to explore classroom practices around multiliteracies, collect and critically analyse data about their pedagogy, and transform teaching and learning practices.

20. Jones, P., Turney, A., Georgiou, H., & Nielsen, W. (2020). Assessing multimodal literacies in science: semiotic and practical insights from pre-service teacher education. *Language and Education*, 34(2), 153-172. <https://doi.org/10.1080/09500782.2020.1720227>

This paper reports on a study of the digital media artefacts created by preservice science teacher education students as assessment tasks. The analysis of these artefacts demonstrates that to

complete the tasks successfully, students require not only science content knowledge but also understanding of multimodal meaning-making and familiarity with discipline-specific representational practices. The authors offer theoretical and practical insights with a view to contributing to efforts to develop both analytical frameworks and multimodal literacy assessment methods.

21. Storytelling across media A. Simpson & Walsh (2015) and Thomas (2012) demonstrate how storytelling across media can be employed to enhance primary students' appreciation of multimodal literature and multimodal authoring skills, respectively.

Simpson, A., & Walsh, M. (2015). Children's literature in the digital world. *English Teaching: Practice & Critique*, 14(1), 28-43. doi:10.1108/ETPC-12-2014-0005

Thomas, A. (2012). Children's writing goes 3D: a case study of one primary school's journey into multimodal authoring. *Learning, Media and Technology*, 37(1), 77-93. doi:10.1080/17439884.2011.560160

22. Storytelling across media B. Barton & Unsworth (2014) and Unsworth (2013, 2014a, b, c) argue that comparing how the same narrative is adapted to different media can develop students' appreciation of the affordances, limitations and interaction of different modes and their craftedness, and thereby enhance their critical multimodal literacy.

Barton, G., & Unsworth, L. (2014). Music, multiliteracies and multimodality: Exploring the book and movie versions of Shaun Tan's 'The lost thing'. *Australian Journal of Language and Literacy*, 37(1), 3-20.

Unsworth, L. (2013). Re-configuring image-language relations and interpretive possibilities in picture books as animated movies: A site for developing multimodal literacy pedagogy. *Ilha do Desterro*, 0(64), 15-48. doi:10.5007/2175-8026.2013n64p15

Unsworth, L. (2014a). Investigating point of view in picture books and animated movie adaptations. In K. Mallan (Ed.), *Picture books and beyond* (pp. 92-107). PETAA.

Unsworth, L. (2014b). Point of view in picture books and animated film adaptations: Informing critical multimodal comprehension and composition pedagogy. In E. Djonov & S. Zhao (Eds.), *Critical multimodal studies of popular discourse* (pp. 202-216). Routledge.

Unsworth, L. (2014c). Interfacing visual and verbal narrative art in paper and digital media: Recontextualising literature and literacies. In G. Barton (Ed.), *Literacy in the arts: Rethorising learning and teaching* (pp. 55-76). Springer International Publishing.

Evidence

Barbot, B., Randi, J., Tan, M., Levenson, C., Friedlaender, L., & Grigorenko, E. L. (2013). From perception to creative writing: A multi-method pilot study of a visual literacy instructional approach. *Learning and individual differences*, 28, 167-176.

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Lopatovska, I., Hatoum, S., Waterstraut, S., Novak, L., & Sheer, S. (2016). Not just a pretty picture: visual literacy education through art for young children. *Journal of Documentation* 72(6), 1197-1227.

Pantaleo, S. (2017). Critical thinking and young children's exploration of picturebook artwork. *Language and Education*, 31(2), 152-168.

Pantaleo, S. (2018). Elementary students' meaning-making of graphic novels. *Language and Education*, 32(3), 242-256.

Simpson, A., & Walsh, M. (2015). Children's literature in the digital world. *English Teaching: Practice & Critique*, 14(1), 28-43. doi:10.1108/ETPC-12-2014-0005

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Unsworth, L., & Macken-Horarik, M. (2015). Interpretive responses to images in picture books by primary and secondary school students: Exploring curriculum expectations of a 'visual grammatics'. *English in Education*, 49(1), 56-79. <https://doi.org/10.1111/17548845.2015.11912522>

Resources for ITE providers

Anstey, M., & Bull, G. (2018). *Foundations of multiliteracies: Reading, writing and talking in the 21st century*. Routledge.

Barton, G., & Unsworth, L. (2014). Music, multiliteracies and multimodality: Exploring the book and movie versions of Shaun Tan's 'The lost thing'. *Australian Journal of Language and Literacy*, 37(1), 3-20.

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Resources for preservice teachers

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- Callow, J. (2013). *The shape of text to come*. Primary English Teaching Association Australia (PETAA).
- Callow, J. (2020). Visual and verbal intersections in picture books – multimodal assessment for middle years students. *Language and Education*, 34(2), 115-134. doi:10.1080/09500782.2019.1689996.
- French, R. (2017). 'The picture is pleading to us to help': Primary school children interpret a persuasive online video. *Practical literacy: The early and primary years*, 22(3), 29–31.
- Kress, G., & Van Leeuwen, T. (2020 [2006,1996]). *Reading images: The grammar of visual design* (2nd ed.). Routledge.
- Mills, K., & Unsworth, L. (2017). Multimodal literacy. In G. W. Noblit (Ed.), *The Oxford Research Encyclopedia, Education*. doi:10.1093/acrefore/9780190264093.013.232
- Rankine, A., & Callow, J. (2017). "It's all lighted up, because this is a happy ending." Beginning critical literacy – young children's responses when reading image and text. *Scan* 36 (4), 46-54.
- Serafini, Frank. (2014). *Reading the visual: an introduction to teaching multimodal literacy*. Teachers College Press.
- Unsworth, L. (2001). *Teaching multiliteracies across the curriculum*. Open University Press.
- Unsworth, L. (2014a). Investigating point of view in picture books and animated movie adaptations. In K. Mallan (Ed.), *Picture books and beyond* (pp. 92-107). PETAA.
- Unsworth, L. (2014c). Interfacing visual and verbal narrative art in paper and digital media: Recontextualising literature and literacies. In G. Barton (Ed.), *Literacy in the arts: Retheorising learning and teaching* (pp. 55-76). Springer International Publishing.
- Walsh, M. (2011). *Multimodal literacy. Researching classroom practice*. Primary English Teachers Association.

Module 22: Digital Literacy

Module 22 introduces preservice teachers to technology for learning. It will critically introduce educational technologies as situated learning. Preservice teachers are introduced to the roles of ICT for communication, investigation, and creation of content, and to the development of teaching strategies accordingly.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
22.Digital Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> Digital practices in the classroom^{1, 2, 3, 4, 5} Technological Pedagogical Content Knowledge model (TPACK) and literacy teaching^{6, 7, 8} Principles of communicating with ICT^{9,10} Principles of investigating with ICT^{11, 12} Principles of creating with ICT^{13,14, 15} 	<p>Workshop focused on how to:</p> <ul style="list-style-type: none"> interpret, appreciate, evaluate and create literary texts in digital/online forms³ develop strategies to teach the layout and navigation of digital /screen texts⁹ develop strategies to teach critical thinking skills when researching and gathering digital information and resources online¹¹ develop strategies to create texts.^{8,14,15,} 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> interpret, appreciate, evaluate and create literary texts in digital / online forms discuss conventions and structures commonly used in digital texts develop teaching strategies to teach layout and navigation of digital / screen texts develop teaching strategies to teach text creations with technologies. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Burnett, 2014 Scherer & Siddiq, 2019 Neumann et al., 2017 Kupiainen et al., 2019 Kalantzis & Cope, 2020 Graham, 2011 Koehler et al., 2013 Oakley, 2020 Hill, 2010 Selwyn, 2020 Pilgrim et al., 2019 Zhang, 2013 Mills et al., 2020 Barone & Wright, 2008 Rowsell et al., 2016

Evidence and Resources

Documents referenced in the outline

1. Burnett, C. (2014). Investigating pupils' interactions around digital texts: a spatial perspective on the "classroom-ness" of digital literacy practices in schools. *Educational Review*, 66 (2), 192-209.

This article uses examples of primary students' interaction around digital texts to argue for the acknowledgement and incorporation of students' everyday digital practices into the classroom.

2. Scherer, R., & Siddiq, F. (2019). The relation between students' socioeconomic status and ICT literacy: Findings from a meta-analysis. *Computers & Education*, 138, 13 – 32.

This meta-analysis synthesized the correlation between socioeconomic status and ICT literacy, and there is an indication of an existence of a digital divide. The study points to implications for teachers, especially in focusing on the use of ICT to actively generate and retrieve information, generate knowledge and its application in problem-solving situations.

3. Neumann, M.M., Finger, G., & Neumann, D.L. (2017). A conceptual framework for emergent digital literacy. *Early Childhood Education Journal*, 45, 471 – 479.

This article provides an introduction to digital literacy in kindergarten and lower primary education, with a focus on children's interaction with digital texts. It also provides a discussion of the developmental pathway from emergent to proficient digital literacy.

4. Kupiainen, R., Kulju, P., Mäkinen, M., Wiseman, A., Jyrkiäinen, A., & Koskinen-Sinisalo, K-L. (2019). Future pedagogical approaches to digital and multimodal practice in early childhood education. In O. Erstad, R. Flewitt, B. Kümmerling-Meibauer, and Í. Pires Pereira (Eds.). *The Routledge Handbook of Digital Literacies in Early Childhood*. London: Routledge.

This chapter used a systematic review of research on pedagogy of multiliteracies in primary classrooms to highlight possible future pedagogies of digital literacy – pedagogy for social change, pedagogy for social diversity and multilingual classrooms, and pedagogy for exploring third spaces.

5. Kalantzis, M., & Cope, W. (2020). *Works & Days*. <https://newlearningonline.com/>

This website hosts the work by Mary Kalantzis and Bill Cope. It includes a lot of textbook supporting materials and resources on new learning, literacies, and multiliteracies. These materials can be used as standalone and additional learning.

6. Graham, C. R. (2011). Theoretical considerations for understanding technological pedagogical content knowledge (TPACK). *Computers & Education*, 57 (3), 1953–1960.

Graham provides a thorough discussion of the technological pedagogical content knowledge (TPACK) framework. He asks three fundamental questions about the 'what', 'how' and 'why' of expanding and using the TPACK framework.

7. Koehler, M. J., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, 193 (3), 13–19.

This study details the three bodies of knowledge required when using technology in education: content, pedagogy, and technology. It also provides approaches for teacher development.

8. Oakley, G. (2020). Developing pre-service teachers' technological, pedagogical and content knowledge through the creation of digital storybooks for use in early years classrooms. *Technology, Pedagogy and Education*, 29 (2), 163-175.

This study investigates preservice teachers' views on creating digital storybooks and their reflections on how the process of creating and using these storybooks help their TPACK development.

9. Hill, S. (2010). The Millennium Generation: Teacher-Researchers Exploring New Forms of Literacy. *Journal of Early Childhood Literacy*, 10 (3), 314-340.

The study explored teacher-researchers' understanding of kindergarten students' home-based multimodal funds of knowledge. This calls for an understanding of the home-school connection when integrating ICT-oriented literacy instructions.

10. Selwyn, N. (2020). Children's engagement with ICT in primary school (Chapter 6). *Telling tales on technology: Qualitative studies of technology and education*. London: Routledge.

This chapter discusses the ways children use technology in the real world of school, home and community. Selwyn argues for an understanding of complicated, 'messy' and inconsistent school contexts when implementing educational technologies.

11. Pilgrim, J., Vasinda, S., Bledsoe, C., & Martinez, E. (2019). Critical thinking is critical: Octopuses, online sources, and reliability reasoning. *The Reading Teacher*, 73 (1), 85 – 93

Pilgrim and colleagues replicated a study of misinformation to evaluate primary school students' (Grade 1 – 5) critical web literacy skills. Findings suggest that critical literacy required to determining information credibility and reliability depends on prior knowledge and schema.

12. Zhang, M. (2013). Prompts-based scaffolding for online inquiry: Design intentions and classroom realities. *Journal of Educational Technology & Society*, 16 (3), 140-151.

This study used Primary 6 students' online inquiry for a science project to examine their critical evaluation of websites and online information, and how these students utilised teachers' prompts. The study provided practical advice and strategies for cultivating critical thinking skills.

13. Mills, K. A., Stone, B.G., Unsworth, L., & Friend, L. (2020). Multimodal language of attitude in digital composition. *Written Communication*, 37 (2), 135-166.

This study focuses on an important aspect of digital communication – attitude expression. The research team used upper primary students' digital comics to explore their use of affect, judgment, and appreciation in multimodal texts.

14. Barone, D., & Wright, T.E. (2008). Literacy instruction with digital and media technologies. *The Reading Teacher*, 62 (4), 292-302.

Barone and Wright examined a Year 4 teacher's use of technology in the classroom for literacy instructions. The article provided a detailed discussion of the classroom routines. The strategies implemented are highly applicable, and many of the software and websites used are still used widely in contemporary classrooms.

15. Rowsell, J., Burke, A., Flewitt, R., Liao, H. T., Lin, A., Marsh, J., ... & Wohlwend, K. (2016). Humanizing digital literacies: A road trip in search of wisdom and insight. *The Reading Teacher*, 70 (1), 121-129.

Rowsell and her colleagues shared a collection of classroom-based digital literacy projects from around the world and what researchers and teachers learned from these projects. This is an insightful short read to further introduce preservice teachers to explore the full publications of these projects.

Module 23: Language and Literacy Development for EAL/D Learners

Module 23 introduces preservice teachers to thinking of the classroom as a multicultural and multilingual space of learning. It will introduce language policies and education in Australia, and the bilingual model for literacy instruction. Preservice teachers are introduced to viewing languages other than English as learning resources, and to the effective use of EAL and translanguaging teaching strategies. Finally, Module 23 will cover approaches to inclusive communication with culturally and linguistically diverse families.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
23. Language and Literacy Development for EAL/D Learners (2-4; M3-M14)	<ul style="list-style-type: none"> EAL/D students and their learning^{1, 2} EAL/D students and oral language³ Bilingual and immersion model for literacy instruction^{5, 6} Understanding multilingualism in Australian education^{7, 8} Languages as learning resources^{9, 10, 11} Home-school connection^{13, 14, 15} 	<p>Workshop focused on:</p> <ul style="list-style-type: none"> exploring the linguistic diversity of a multicultural classroom by using a language silhouette, or a timeline⁴ examining translanguaging strategies for literacy instruction¹² supporting at-risk EAL/D students.¹⁶ 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> use strategies to understand students' literacy competences in home languages discuss home-school connection and linguistic resources in literacy instruction understand translanguaging as a literacy pedagogy develop language awareness for diverse classroom develop inclusive literacy instruction. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Creagh et al. (2019) Cheung & Slavin (2012) De Courcy et al. (2012) Prasad (2018) Molyneux et al. (2016) Cummins (1998) Heugh (2014) Lo Bianco w Slaughter (2009) Fielding (2016) Premier & Parr (2019) Hornberger & Link (2012) Heugh et al. (2019) Tuafuti & McCaffery (2005) Schneider & Arnot (2018) Marshall & Toohey (2010) Hammond & Miller (2015)

Evidence and Resources

Documents referenced in the outline

1. Creagh, S., Kettle, M., Alford, J., Comber, B., & Shield, P. (2019). How long does it take to achieve academically in a second language? : Comparing the trajectories of EAL students and first language peers in Queensland schools. *Australian Journal of Language and Literacy*, 42 (3), 145-155.

This study uses longitudinal school data on NAPLAN reading results from two large regions in Queensland (2009 – 2015) to examine the trajectories of English language learners. The findings suggest that it takes the whole of primary school education for EAL students to achieve the same level as their English-speaking peers. The findings support the provision of high-quality language support programs.

2. Cheung, A. C. K., & Slavin, R. E. (2012). Effective Reading Programs for Spanish-Dominant English Language Learners (ELLs) in the Elementary Grades: A Synthesis of Research. *Review of Educational Research*, 82 (4), 351–395.

This review paper provides a synthesis of research on English reading outcomes of all types of programs for Spanish-dominant English language learners in primary schools. Though bilingual education indicates a general positive effect, there is no strong evidence of long-term effects. However, Cheung and Slavin identified that whole-school and whole-class interventions, and phonics and small group teaching have positive impact. They also found professional development is instrumental in optimising learning outcomes.

3. de Courcy, M. Dooley, K., Jackson, R., Miller, J. & Rushton, K. (2012). *Teaching EAL/D learners in Australian classrooms*. PETAA Paper 183. Newtown, NSW: PETAA.

This paper outlines theoretical and practical trends in EAL/D teaching and learning, with a discussion on the importance of developing EAL/D students' oral language in early years. The paper also provides strategies to support effective pedagogies.

4. Prasad, G. (2018). How does it look and feel to be plurilingual?': analysing children's representations of plurilingualism through collage. *International Journal of Bilingual Education and Bilingualism*. doi: 10.1080/13670050.2017.1420033

Prasad invited primary school students to visually represent their plurilingual repertoires by making collages. The strategies are readily usable and highly adaptable to cater for students of different ages and languages.

5. Molyneux, P., Scull, J. & Aliani, R. (2016). Bilingual education in a community language: lessons from a longitudinal study, *Language and Education*, 30 (4), 337-360.

This study indicates the literacy growth when an emerging community language (Karen) is used for bilingual learning in early primary education. The study includes work samples for reference. Parents' and teachers' perspectives have been included to further demonstrate the benefits to home-school connection.

6. Cummins, J. (1998). Immersion education for the millennium: What we have learned from 30 years of research on second language immersion. In M. R. Childs & R. M. Bostwick (Eds.), *Learning through two languages: Research and practice. Second Katoh Gakuen International Symposium on Immersion and Bilingual Education* (pp. 34–47). Japan: Katoh Gakuen.

Cummins reviews the Canadian French immersion education model and highlights the most useful strategies, which include making comprehensible input, developing critical literacy, and conducting critical analysis of language forms and uses. He also urges teachers to focus on using language to generate new knowledge, create literature and art, and act on social realities.

7. Heugh, K. (2014). Turbulence and dilemma: implications of diversity and multilingualism in Australian education. *International Journal of Multilingualism*, 11 (3), 347-363. doi: 10.1080/14790718.2014.921180

Heugh critically discusses the trends in multilingualism and multilingual education in the greater framework of Indigenous and community languages. This article is an essential introduction to rethinking languages in education with reference to national and international debates on languages and socially just education.

8. Lo Bianco, J., with Slaughter, Y. (2009). *Second languages and Australian schooling*. Camberwell, Vic: Australia Council for Educational Research.

This report provides an overview of language policies and language education in multicultural Australian schooling. It is an essential introduction to multilingualism in education.

9. Fielding, R. (2016). Students' use of their plurilingual resources in Australian schools. *Language and Education*, 30 (4), 361-377.

Fielding shows that bilingual education programs benefit students from both bilingual and monolingual backgrounds. Plurilingual students drew on knowledge of home language(s) as a resource, and showed an increased enjoyment of learning and developed learning strategies that built on their plurilingual experiences.

10. Premier, J. and Parr, G. (2019). Towards an EAL community of practice : A case study of a multicultural primary school in Melbourne, Australia. *Australian Journal of Language and Literacy*, 42 (1), 58-68. February 2019 [online]

This article showcases teachers' experiences when enacting a 'community of practice' approach to meet the needs of EAL students in multicultural classroom settings. It is a particularly useful reference on how to cater for highly diverse classrooms through informed use of EAL strategies and school-based professional development.

11. Hornberger, N.H. & Link, J. (2012). Translanguaging and transnational literacies in multilingual classrooms: a biliteracy lens. *International Journal of Bilingual Education and Bilingualism*, 15 (3), 261-278.

Hornberger and Link used classroom observation episodes of bilingual children in the US and UK to demonstrate the benefits of applying translanguaging pedagogies for literacy advancement.

12. Heugh, K., French, M., Armitage, J., Taylor-Leech, K., Billinghamurst, N., & Ollerhead, S. (2019). *Using multilingual approaches: moving from theory to practice: a resource book of strategies, activities and projects for the classroom*. London: British Council.

This is a very helpful resource book designed to support teachers who teach English and use English as the medium of instruction in classrooms, especially for those resource-poor communities. The teaching strategies are highly adaptable.

13. Tuafuti, P. & McCaffery, J. (2005). Family and Community Empowerment through Bilingual Education. *International Journal of Bilingual Education and Bilingualism*, 8 (5), 480-503.

Tuafuti and McCaffery used a longitudinal Samoan bilingual education program in New Zealand to demonstrate how Pasifika families are empowered when home languages are acknowledged and incorporated in formal educational contexts.

14. Schneider, C. & Arnot, M. (2018). An exploration of school communication approaches for newly arrived EAL students: applying three dimensions of organisational communication theory. *Cambridge Journal of Education*, 48 (2), 245-262.

This article focuses on modes of school communication with families from culturally and linguistically diverse backgrounds. The findings suggest a combination of interactional and transactional models of communication and take into consideration the school structures and content of communication.

15. Marshall, E., & Toohey, K. (2010). Representing family: Community funds of knowledge, bilingualism, and multimodality. *Harvard Educational Review*, 80 (2), 221-242.

This study used Canadian primary school students' retelling of their grandparents' migration and life stories to develop understanding of community funds of knowledge. Marshall and Toohey provide a very useful project prototype for dual-language book production with young learners and in the process, encourage teachers and schools to rethink the visibility of bilingual children.

16. Hammond, J. & Miller, J. (Eds.) (2015). *Classrooms of possibility: Supporting at-risk EAL students*. Newtown NSW: Primary English Teaching Association Australia (PETAA).

This edited volume focuses on the needs and challenges of 'at risk' EAL/D students. The volume provides practical pedagogical advice and strategies for addressing not just EALD but also those from refugee backgrounds with disrupted education.

Module 24: Supporting All Readers

Module 24 introduces preservice teachers to differentiation of literacy instruction. It builds on learnings from previous units and examines in more detail how to differentiate literacy instruction for students with different cultural and linguistic backgrounds, background knowledge, reading skills and motivation, as well as for disciplines. The focus will be on examining effective differentiation, assessment, and engagement practices for students with diverse learning capabilities and needs, including high-performing students and students with specific reading difficulties, such as dyslexia.

The module focuses on literacy practices and assumes that differentiated instruction theory, evidence, and legal requirements are already covered in an inclusive education course. If this is not the case, then the first three items in the content list require more time.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
24.Supporting All Readers (2-4; M3-M14)	<ul style="list-style-type: none"> Why differentiate ^{1,2,4} and why all teaching is differentiated instruction (DI) DI concept map, pyramid, and within-class differentiation model ^{1,2,3} Differentiation <i>for</i> and <i>by</i> in different school contexts Organizing your literacy instruction to include differentiation – the necessary components ^{5,6,7,8} Examples of differentiated literacy instruction ^{4,9,10,11,12} 	<p>Workshop on:</p> <ul style="list-style-type: none"> building a graphic organiser of different within-class differentiation needs (who needs differentiation) and options (how can instruction be aligned to match the needs of all students) ^{1,2,3} identifying five critical questions that individual preservice teachers have about differentiation. 	<p>After completing this module, preservice teachers will be able to:</p> <ol style="list-style-type: none"> explain why they need to differentiate instruction and for whom explain how they can differentiate literacy teaching locate and use published resources for planning differentiated instruction. 	<p>Weight = 1-2</p> <p>Flexible unit; could be part of any inclusive education or special education unit</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Deunk et al., 2018 & Smale-Jacobse et al., 2019 Tomlinson, 2014 Jang et al., 2018 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Tobin & McInnes, 2008 Reutzel & Clark, 2011 Foorman & Wanzek, 2016 Coyne et al., 2006 Hurst, nd Piasta, 2014 Watts-Taffe et al., 2012 Spear-Swerling, 2016 Baker et al., 2014, plus others

Evidence and Resources

Evidence and Theory

1. Deunk, M. I., Smale-Jacobse, A. E., de Boer, H., Doolaard, S., and Bosker, R. J. (2018). Effective differentiation practices: A systematic review and meta-analysis of studies on the cognitive effects of differentiation practices in primary education. *Educational Research Review*, 24, 31–54. doi: 10.1016/j.edurev.2018.02.002

This systematic review gives an overview of the effects of differentiation practices on language and math performance in primary education, synthesizing the results of empirical studies ($n = 21$) on this topic since 1995. It finds that using computerized systems as a differentiation tool and using differentiation as part of a broader program or reform had small to moderate positive effects on students' performance. Between- or within-class homogeneous ability grouping had a small negative effect on low-ability students, but no effect on others. The finding that computer technology can be a useful tool to facilitate differentiated instruction is not covered in earlier reviews. The finding that homogeneous ability grouping alone is not effective stresses the importance of embedding differentiation practices in a broader educational context.

2. Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M. & Maulana, R. (2019). Differentiated instruction in secondary education: A systematic review of research evidence. *Frontiers in Psychology*. doi: 10.3389/fpsyg.2019.02366.

This second systematic review from the same group focuses on the secondary students and also shows positive effects. However, for the purpose of primary education the most interesting part of this review is the within-class differentiation model.

3. Tomlinson, C. A. (2014). *The differentiated classroom: Responding to needs of all learners* (2nd ed.) Alexandria, VA: ASCD.

In this updated second edition of her classic book, Tomlinson explains the theoretical basis of differentiated instruction, explores the variables of curriculum and learning environment and how they affect differentiation, shares dozens of instructional strategies, and provides examples of how practicing teachers are applying differentiation principles and strategies to respond to the needs of their students

4. Jang, B. G., Henretty, D., & Waymouth, H. (2018). A Pentagonal Pyramid Model for Differentiation in literacy instruction across the disciplines. *Journal of Adolescent & Adult Literacy*, 62 (1), 45–53. doi: 10.1002/jaal.757.

To address the rationale and pedagogy of differentiation, Jang et al. present a new model which can guide teachers in maximizing learning by accommodating a broad range of student cultures, interests, abilities, and disciplines. While developed for secondary schools, we believe this model can be adapted (but not adopted) for use in upper primary years as well.

Resources for ITE providers and preservice teachers

5. Tobin, R. & McInnes, A. (2008). Accommodating differences: Variations in differentiated literacy instruction in grade 2/3 classrooms. *Literacy*, 42 (1), 3-9.

Tobin and McInnes report on compelling evidence from Year 2/3 classrooms in which teachers differentiated instruction in a variety of ways to benefit all students. In particular, teachers provided additional scaffolding for struggling literacy learners by offering a menu of tiered work products, expert tutoring and additional supports. At the base of instruction were common essential understandings grounded in best literacy practices: shared reading and writing, guided reading, excellent texts and literacy centres. The article emphasises the critical importance of responding to the needs of diverse and at-risk learners in the regular classroom. Differentiated instruction is suggested as a powerful organising framework in the language arts classroom.

6. Reutzel, D. R. & Clark, S. (2011). Organizing literacy classrooms for effective instruction. *The Reading Teacher*, 65 (2), 96–109. doi:10.1002/TRTR.01013.

Reutzel and Clark answer questions beginning teachers likely have about organizing and managing effective classroom literacy environments, including planning (1) the classroom environment and management, (2) assessment, (3) instruction, (4) parent and community involvement efforts, and (5) personal growth and continued professional development.

7. Foorman, B. R. & Wanzek, J. (2016). Classroom reading instruction for all students. In S. R. Jimerson et al. (eds.), *Handbook of Response to Intervention* (pp. 235-252). New York: Springer. doi 10.1007/978-1-4899-7568-3_14.

In this chapter, Foorman and Wanzek present a dense overview of what classroom reading instruction in primary years needs to include to cover all learners, including EAL and children who are struggling with reading acquisition. This chapter is not recommended for preservice teachers.

8. Coyne, M. D., Zipoli, R. P., & Ruby, M. F. (2006). Beginning reading instruction for students at risk for reading disabilities: What, how, and when. *Intervention in School and Clinic*, 41 (3), 161–168.

In this article, the authors offer a conceptual framework for thinking about beginning reading instruction and intervention across three dimensions: the content of instruction (what to teach), the delivery of instruction (how to teach), and the timing of instruction (when to teach). They discuss each of these dimensions and describe how teachers can use them to help organise and make sense of what we know about beginning reading instruction for students experiencing reading difficulties.

9. Hurst, S. (nd). 6 elements of effective differentiated reading instruction. <https://www.readinghorizons.com/blog/six-necessary-components-of-effective-differentiated-instruction>

This preservice teacher-friendly summary is provided here as a teacher perspective on the ingredients needed for effective differentiated reading instruction.

10. Piasta, S. B. (2014). Moving to assessment-guided differentiated instruction to support young children's alphabet knowledge. *The Reading Teacher*, 68 (3), 202–211. doi: 10.1002/trtr.1316

Piasta's purpose with this article is to encourage early childhood educators to move beyond whole-class instructional approaches and instead provide alphabet instruction that is aligned with current emphases on assessment-driven decision making. First, she briefly reviews the importance of alphabet knowledge with respect to theory, research, and the current educational context. Next, she presents research evidence suggesting that children's alphabet knowledge development is affected not only by differences among children but also by inter-letter differences that make some letters easier or more difficult to learn. Finally, she presents a framework in which assessment guides differentiated alphabet instruction and empirically-validated practices to support such instruction.

11. Watts-Taffe, S., Laster, B.P., Broach, L., Marinak, B., Connor, C. M., & Walker-Dalhouse, D. (2012). Differentiated instruction: Making informed teacher decisions. *The Reading Teacher*, 66 (4), 303–314. doi:10.1002/TRTR.01126

In this article, Watts-Taffe et al. begin by examining the following questions: What does differentiation mean? Why is it important in literacy instruction? What does the extant research suggest about what works for differentiation in literacy instruction? They then present in some detail two case studies of effective differentiation practices in primary school and the decision making behind the chosen practices.

12. Spear-Swerling, L. (2016). Common types of reading problems and how to help children who have them. *The Reading Teacher*, 69 (5), 513-522. doi:10.1002/trtr.1410.

In this paper, Spear-Swerling discusses the three most common types of reading problems and how to identify and differentiate classroom instruction for each problem type.

Additional resources for preservice teachers

13. Numerous papers and reports have examined either specific strategies of differentiated instruction or summarized evidence for particular instructional approaches. The following is a partial list of papers and reports reviewed for this module:

Baker, S., Lesaux, N., Jayanthi, M., Dimino, J., Proctor, C. P., Morris, J., Gersten, R., Haymond, K., Kieffer, M. J., Linan-Thompson, S., & Newman-Gonchar, R. (2014). *Teaching academic content and literacy to English learners in elementary and middle school* (NCEE 2014-4012). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: http://ies.ed.gov/ncee/wwc/publications_reviews.aspx.

Based on current research evidence and expert opinion, this report provides four best practice recommendations for differentiating for EAL students:

- (1) teach a set of academic vocabulary words intensively across several days using a variety of instructional activities (strong evidence);
- (2) integrate oral and written English language instruction into content-area teaching (strong evidence);
- (3) provide regular, structured opportunities to develop written language skills (minimal evidence), and;
- (4) provide small-group instructional intervention to students struggling in areas of literacy and English language development (moderate evidence).

Gersten, R., Baker, S.K., Shanahan, T., Linan-Thompson, S., Collins, P., & Scarcella, R. (2007). *Effective literacy and English language instruction for English learners in the elementary grades: A practice guide* (NCEE 2007-4011). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc/publications/practiceguides>.

This evidence review recommended five best practices for teaching literacy skills to EAL students:

- (1) conduct formative assessments with English learners using English language measures of phonological processing, letter knowledge, and word and text reading. Use these data to identify English learners who require additional instructional support and to monitor their reading progress over time;
- (2) provide focused, intensive small-group interventions for English learners determined to be at risk for reading problems. Although the amount of time in small-group instruction and the intensity of this instruction should reflect the degree of risk, determined by reading assessment data and other indicators, the interventions should include the five core reading elements (phonological awareness, phonics, reading fluency, vocabulary, and comprehension). Explicit, direct instruction should be the primary means of instructional delivery;
- (3) provide high-quality vocabulary instruction throughout the day. Teach essential content words in depth. In addition, use instructional time to address the meanings of common words, phrases, and expressions not yet learned;
- (4) ensure that the development of formal or academic English is a key instructional goal for English learners, beginning in the primary grades. Provide curricula and supplemental curricula to accompany core reading and mathematics series to support this goal. Accompany with relevant training and professional development, and

(5) ensure that teachers of English learners devote approximately 90 minutes a week to instructional activities in which pairs of students at different ability levels or different English language proficiencies work together on academic tasks in a structured fashion. These activities should practice and extend material already taught.

Evidence was identified as strong for everything else but 4 (low).

Gillespie, A., & Graham, S. (2014). A meta-analysis of writing interventions for students with learning disabilities. *Exceptional Children*, 80 (4), 454-473.

This meta-analysis shows that strategy instruction, goal setting, explicitly taught process writing, dictation and pre-writing were also effective for students with a learning disability.

Gilson, C. M., Little, C. A., Ruegg, A. N., & Bruce-Davis, M. (2014). An Investigation of elementary teachers' use of follow-up questions for students at different reading levels. *Journal of Advanced Academics*, 25 (2), 101-128.

This study identified several different question types teachers can use with students who have diverse reading comprehension instruction needs.

Hughes, M. T. & Parker-Katz, M. (2013). Integrating comprehension strategies into social studies instruction. *Social Studies*, 104 (3), 93-104. doi:10.1080/00377996.2012.691570

This article presents scenarios and research-based resources to help middle school teachers integrate comprehension strategy instruction for students with LD into teaching social studies.

Reis, S. M., McCoach, D. B., Coyne, M., Schreiber, F. J., Eckert, R. D., & Gubbins, E. J. (2007). Using planned enrichment strategies with direct instruction to improve reading fluency, comprehension, and attitude toward reading: An evidence-based study. *Elementary School Journal*, 108 (1), 3-23.

This paper presents the School-wide Enrichment Model in Reading Framework (SEM-R) that provides enriched reading experiences by exposing students to books in their areas of interest, daily supported independent reading of challenging self-selected books using differentiated reading instruction, and interest-based choice opportunities in reading.

Begeny, J. C., Levy, R. A. & Field, S. A. (2018). Using small-group instruction to improve students' reading fluency: An evaluation of the existing research. *Journal of Applied School Psychology*, 34 (1), 36-64. doi: 10.1080/15377903.2017.1328628.

In this paper, Begeny et al. review repeated reading fluency interventions delivered for small groups and conclude that they can be as effective as one-on-one intervention.

Spencer, E. J., Goldstein, H., & Kaminski, R. (2012). Teaching vocabulary in storybooks: Embedding explicit vocabulary instruction for young children. *Young Exceptional Children*, 15 (1), 18-32. doi:10.1177/1096250611435367.

Spencer et al. review the evidence base for principles of vocabulary instruction for young children, including children with disabilities and provide evidence-based recommendations to guide practitioners in explicit teaching of vocabulary embedded in storybooks.

Erickson, K. A. & Koppenhaver, D. A. (2020). *Comprehensive literacy for all: Teaching students with significant disabilities to read and write*. Baltimore, MA: Paul H. Brookes.

In this book written for teachers, Erickson and Koppenhaver assert first that with the right instruction and supports, all students can learn to read and write. They then go on to provide a practical guide on what high-quality literacy instruction to students with significant disabilities should include. The book covers all Big Six aspects of reading instruction and includes sample teaching scenarios, how-to strategies, and other resources for teachers of students with significant disabilities.

The following Australian resource on differentiating for EAL students may also be relevant, and is included as a resource in the EAL/D module.

Hammond, J. & Miller, J. (Eds.) (2015). *Classrooms of possibility: Supporting at-risk EAL students*. Newtown NSW: Primary English Teaching Association Australia (PETAA).

Modules 25 and 26: Children's Literature

These two modules develop preservice teachers' understanding of principles and practices for selecting and making imaginative use of authentic children's literature for literacy development and aesthetic appreciation in F–2 classrooms (Module 25) and Year 3–6 classrooms (module 26). Both modules develop preservice teachers' capacity to foster a love of reading through cultivating enthusiasm for quality literature and building confident knowledge of a range of texts.

Both modules develop understanding of quality literature, including poetry, picture books, novels, film, and new media formats. Preservice teachers will learn to evaluate texts for their literary merit and potential to support literacy learning, taking into account text structure, language features and print–image relations. They will understand the role of literature for expanding children's understanding, including the development of general capabilities of critical and creative thinking, personal and social capability, ethical behaviour, and intercultural understanding.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
25. Children's Literature F-2 (2-4; M3)	<ul style="list-style-type: none"> Literary elements and characteristics of quality fictional picture books and poetry for F-2 including 'tell-tale gaps' i.e. inferential aspects of texts^{1 2} Features of quality information picture books which qualify them as 'literary'/aesthetic texts Literature in film and new media formats for F-2 Analysis of a range of text structures, language features, images and print-image relations in literature for F-2 Role of literature for expanding children's understanding, including critical and creative thinking, personal and social capability, ethical behaviour and intercultural understanding³ Ways for teachers to foster in children a love of reading^{4 5 6 7 8} including the importance of strong teacher familiarity with a wide range of texts^{9 10} 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> engage in wide and close reading of a range of texts including poetry and picture books prepare for and participate in literature response and appreciation activities suitable for adaptation to the F-2 classroom, such as read-alouds with discussion and literature circles work in groups or individually to compile an annotated bibliography of texts suited to a theme / sequence of connected learning experiences and suggest activities which would engage students in the joy of reading. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> identify quality literature for F-2 classrooms and justify their choices in light of text features and curriculum document requirements express an informed appreciation of select texts which have been the subject of close reading and analysis select a range of related, quality texts suitable for a connected series of learning experiences / unit of work. 	<p>Weight = 2-3</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Williams (1991) Spencer (1988) Adam & Harper (2016) Akins et al. (2018) Cremin et al. (2014) Flint (2020) Kozak & Martin-Chang (2018) O'Sullivan & McGonigle (2010) <p><u>Resources:</u></p> <ol style="list-style-type: none"> Lowe (2016) Serafini (2011) <p>Both modules would use a wide range of literature as the most substantial resource.</p>

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
26. Children's Literature 3–6 (2-4; M25)	<ul style="list-style-type: none"> Principles of selecting and using quality texts (e.g. relating to Aboriginal cultures and experiences, Asian engagement, and sustainability) for reading development in Years 3 – 6. Programming for reading development through literature Relevance of¹¹ and ways to support engagement and enjoyment of struggling readers in the later primary school years ^{6 7} (including the use of ICT) 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> engage in wide and close reading of a range of texts including poetry, picture books for older readers and novels prepare for and participate in literature response and appreciation activities suitable for 3–6 classes, including drama and literature circles compose literature themselves (e.g. poetry, a short story) plan some creative learning activities for engaging a class or group of children in reading a novel, longer picture book or other appropriate literary text. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> identify quality literature for 3–6 classrooms and justify their choices in light of text features and curriculum document requirements express an informed appreciation of select texts which have been the subject of close reading and analysis design learning experiences suitable for a class or group program based on a literary text. 	<p>Weight = 2-3</p> <p>Most evidence and resources are relevant for both modules.</p> <p><u>Evidence:</u></p> <p>Thomson et al (2017)</p> <p><u>Resources:</u></p> <p>6. Lowe (2016) 7. Serafini (2011)</p> <p>Both modules would use a wide range of literature as the most substantial resource</p>

Evidence and Resources

Evidence

1. Williams, G. (1991). 'Space to play': The use of analyses of narrative structure in classroom work with children's literature. In M. Saxby and G. Winch (eds.), *Give Them Wings: The Experience of Children's Literature* (2nd ed., pp. 355–368). Macmillan.

The metaphor of an adventure playground is used in this book chapter to evoke the agentive role of young readers in making meaning of literary texts. It is argued that quality literature offers spaces in which readers can engage in making inferences and in questioning/wondering.

The rest of this book is also relevant to these modules.

2. Spencer, M. M. (1988). *How texts teach what readers learn*. Thimble Press.

This is a short but very well-known monograph in the field of literacy and children's literature. It argues that quality literary texts offer readers opportunities to learn 'reading lessons' beyond basic skills: lessons in learning to make inferences and to understand how literature works. Children's literature examples are used to establish that different kinds of texts afford different opportunities for readers in terms of interpretive work, with quality literature by its nature anticipating a reader who will participate in actively making meaning of the text, e.g. filling in what may be merely implied by the writer and illustrator.

3. Adam, H. & Harper, L. (2016). *Educating for values and diversity through culturally inclusive children's literature* (PETAA Paper 205). PETAA.

This short monograph outlines ways in which culturally inclusive literature can support the teaching of several of the key general capabilities of the Australian Curriculum: English, namely: critical and creative thinking; personal and social capability; ethical behaviour, and intercultural understanding. The paper takes as its starting point a brief summary of research on the importance of literature for developing understanding of others. Ways to evaluate texts for cultural inclusivity are outlined, and some examples of suitable literature provided.

4. Akins, M., Tichenor, M., Heins, E. & Piechura, K. (2018). Teachers' knowledge of children's literature: what genres do teachers read? *Reading Improvement*, 55(2), 63-66.

This study surveyed 56 school teachers in a district in the USA to determine the children's literature they had read across a range of literary genres. It was found that teachers had read a somewhat limited range of mostly very well-known children's literature, and that a considerable proportion of the titles they had read would have been familiar from their own childhoods. Books from the study's categories of 'historical' and 'multicultural' literature were identified as much less familiar to teachers, despite the relevant schools servicing multicultural populations. Wider reading for teachers was recommended in order for teachers to be better equipped to make appropriate recommendations for their students.

5. Cremin, T., Mottram, M., Collins, F. M., Powell, S. & Safford, K. (2014). *Building communities of engaged readers: Reading for pleasure*. Routledge.

This book arises from a study and professional learning program enacted in the UK. A survey of 1200 primary school teachers found that "teacher knowledge of children's literature was narrow" (p.22) and

that classroom use of literature was similarly impacted by narrow selection. The professional learning program sought to address these issues to foster a love of reading for teachers and their students.

8. Flint, T. (2020). Responsive play: Creating transformative classroom spaces through play as a reader response. *Journal of Early Childhood Literacy*, 20(2), 385-410.

Based on a case-study in a Year 1 classroom in the USA, this paper argues for play as a form of response to literature. Children were invited to engage in play and talk around storybooks that had been read to the class. It is argued that forms of response to literature need to include play as a legitimate response and not be limited to more traditional responses, e.g., written responses.

9. Kozak, S. & Martin-Chang, S. (2018). Preservice teacher knowledge, print exposure, and planning for instruction. *Reading Research Quarterly*, 54(3), 323–338. doi:10.1002/rrq.240.

This is a Canadian study of 106 preservice teachers. Survey measures of preservice teachers' reading habits and analysis of their plans for a week of teaching language arts found that "teachers who read more children's and young adult literature are also more inclined to allocate time for student reading, for explicit teaching, and potentially for reading to their students" (p.329). The argument is advanced that "although it is obvious that learning to read is necessary for optimal development, there is a complementary view that learning to read in and of itself is not sufficient... Children should also be inspired to read for pleasure in order to gain access to the cognitive and emotional benefits of reading" (p.331).

10. O'Sullivan, O. & McGonigle, S. (2010). Transforming readers: Teachers and children in the Centre for Literacy in Primary Education Power of Reading project. *Literacy*, 44(2) 51–59. doi: 10.1111/j.1741-4369.2010.00555.x.

This paper reports findings from the charity-funded Power of Reading project in England, which seeks to improve motivation for reading in primary schools, focusing on disadvantaged areas. A total of 900 schools and 1350 teachers were involved in the program in the first four years, those being the years upon which this paper is based. Professional learning for teachers was combined with books for the classroom and ideas for teaching literature with "creative pedagogies". Positive outcomes included much stronger teacher knowledge of literature, for example, in the period 2008–2009 teachers considering themselves knowledgeable about children's literature went from 16% at the start of the program to 95% of respondents at the end. Analysis of case studies indicated that teachers identified student motivation to read as improved, which they attributed to higher teacher knowledge, use of literature, creative teaching, and the "transformational role of texts themselves" (p.55), including emotional involvement in stories which motivated even reluctant readers. Measures of children's attitudes to reading confirmed motivation to read had indeed improved significantly. Measures of reading attainment indicated gains which exceeded national average rates of progress.

11. Thomson, S., Hillman, K., Schmid, M., Rodrigues, S. & Fullarton, J. (2017). *PIRLS 2016: Reporting Australia's results*. Australian Council for Educational Research. Available from: <https://research.acer.edu.au/cgi/viewcontent.cgi?article=1000&context=pirls>

This report of the latest results (2016) for the 5-yearly 'Progress in International Reading Literacy Study' (PIRLS) indicates a correlation between children's attitudes to reading, confidence in their own reading ability, and measured skills in reading ability. PIRLS reports on children in Year 4. Children with very positive attitudes to reading (enjoying reading "very much") constituted 43% of surveyed Australian students, a figure consistent with other international figures. Enjoyment in reading was

correlated with having many books in the home (typically this is linked with socioeconomic status), while having few books was correlated with lacking confidence in reading and on average lower reading skills. For example, “The proportion of students with a few books in the home who were classified as not confident readers was more than twice the proportion of students with either an average number of books or many books at home who were not confident in their reading abilities” (p.83). The PIRLS data on reading attitudes and reading achievement are consistent with theories that attitudes and motivation have a bi-directional relationship with attainment.

Resources for ITE Providers and Preservice Teachers

The main readings for module 25 will be a wide range of literature suitable for children in F–2 classes, and for module 26 for 3–6 classes.

Reading lists will incorporate (at least) poetry and books from world and Australian literature, and will be inclusive of Aboriginal and Torres Strait Islander peoples (both in terms of contemporary literature and literary heritage), and also texts which emphasise Australia’s links to Asia. Dual language books may be included as examples of ways to support and celebrate linguistic diversity in the classroom. Literature in film and new formats should be included.

Published recommended lists are a valuable source of suitable literature choices. For example: AustLit. <https://www.austlit.edu.au/>

A wealth of historical and contemporary literature and related resources including film. The section on children’s and YA literature includes Aboriginal and Torres Strait Islander resources, as well as reading lists and resources from the Asian-Australian Children’s Literature and Publishing project.

Children’s Book Council of Australia <https://cbca.org.au/>

Award-winning, short-listed and notable Australian books listed on the website, and new books reviewed in the journal *Reading Time*.

Reading Australia. <https://readingaustralia.com.au/>

Booklists with teaching resources for a wide selection of Australian literature.

University of Sydney. Children’s and Young Adult Literature (Education): Aboriginal and Torres Strait Islander Children’s and YA Literature.

<http://libguides.library.usyd.edu.au/c.php?g=508205&p=3477377>

Quality reading list of literary texts on this topic.

A range of books provide examples of quality literature and related teaching ideas for the Australian classroom. For example:

Johnston, R. R. (2017). *Australian literature for young people*. Oxford University Press, Australia.

Mallan, K (Ed.) (2014). *Picture books and beyond*. Primary English Teaching Association Australia.

McDonald, L. (2017). *A literature companion for teachers* (2nd ed.). Primary English Teaching Association Australia.

Textbooks on teaching literacy typically include some dedicated content on quality literature for the classroom, often with book lists. For example:

Ewing, R., Callow, J., & Rushton, K. (2016). *Language & literacy development in early childhood*. Cambridge University Press. **Chapters 7 and 10.**

Fellowes, J. & Oakley, G. (2020). *Language, literacy and early childhood education* (3rd ed.). Oxford University Press. **Chapter 2.**

Flint, A. S., Kitson, L., Lowe, K., Shaw, K., Vicars, M., Feez, S. & Humphrey, S. (2017). *Literacy in Australia: Pedagogies for engagement* (2nd ed.). John Wiley & Sons Australia. **Chapter 10.**

Resources about literature, and practical strategies for independent reading of literature and response in the English/literacy classroom

6. Lowe, K. (2016). *For the love of reading: Supporting struggling readers*. Primary English Teaching Association Australia (PETAA).

This book is a resource for teachers seeking to engage and support all children in reading independently for pleasure. Justification of the importance of this is established in chapter 1 by reference to research.

7. Serafini, F. (2011). Creating space for children's literature. *The Reading Teacher*, 65(1), 30–34.

This short article suggests ten practical strategies for ensuring children's literature is not crowded out of the English curriculum. Examples include limiting 'response' activities (e.g. dioramas), especially when they do not require much reading or re-reading, and teachers reading to the class regularly. It is also recommended that teachers read to extend their own knowledge of a range of literature, in order for them to enthuse children about reading and introduce them to appropriate titles.

Gibson, R. & Ewing, R. (2011). Chapter 5: Leading with quality literature. In *Transforming the curriculum through the arts*. Palgrave Macmillan.

Literature-based, creative activities, including use of drama and art with writing as a response to poetry.

Janks, H. (ed.) (2014). *Doing critical literacy: Texts and activities for students and teachers*. Routledge.

A valuable resource for developing preservice teachers' consciousness of the potential to read 'against the grain' i.e. developing skills and dispositions for critical literacy, including for awareness of [lack of] diversity in texts for the classroom. Includes practical suggestions for teaching.

Saxby, M. (1997). *Books in the life of a child: Bridges to literature and learning*. Macmillan Education Australia.

A resource on the importance of literature for imagination, language, and literacy. It includes examples of quality literature and is written by a highly respected author and expert on Australian children's literature and its use in classrooms.

Short, K.G., Lynch-Brown, C.M. & Tomlinson, C.M. (2017). *Essentials of children's literature* (9th ed.) Pearson.

Useful and wide-ranging text designed to be used for a course on children's literature. US-origin but contents are not limited to that region; includes a focus on texts which represent diversity.

Module 27: Handwriting and Keyboarding

This module develops understanding of the role of handwriting in the context of learning to read and write, and of relevant, quality practices for teaching handwriting to children. Preservice teachers will learn to use, model, and teach handwriting in the relevant script for their jurisdiction. They will also appreciate the contemporary relevance of developing students' keyboarding skills.

The module supports the compulsory content on handwriting and keyboarding in the Australian Curriculum: English.

Module (year, prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
27.Handwriting and Keyboarding (any)	<ul style="list-style-type: none"> Rationales for teaching handwriting: relationship between handwriting and learning to read; handwriting for legibility and fluency in writing texts^{1, 2, 3, 4, 5, 6} Knowledge about language diversity relevant to handwriting: handwriting in English compared with handwriting in other languages (including appreciating how English language learners may already have written literacy in a language other than English) Principles and practices for teaching handwriting: <ul style="list-style-type: none"> Pencil grip – development of grip; the importance of grip for writing stamina The basis of Australian handwriting scripts in natural hand movements including drawing as a precursor to handwriting (and drawing, mark-making as important in early literacy) Teaching unjoined letters: groupings of letters based on like formation, teaching for fluency, software for teaching handwriting Teaching joined script Purposes of handwriting – linking to the writing process (e.g. neatness in ‘published’ final drafts) Advice for teaching keyboarding^{1, 3} 	<p>Preservice teachers will:</p> <ul style="list-style-type: none"> participate in activities suitable for classroom application in teaching handwriting, including playful mark-making activities for young children^{7, 8, 9, 10} practise forming numerals as well as both upper- and lower-case letters, as appropriate to the script taught in their state or territory. Letters should be practised both in unjoined and joined script.¹¹ 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> articulate some engaging activities for teaching handwriting explain how fluency in handwriting reduces the cognitive load in writing for students describe examples of languages with different written scripts from English explain the role of handwriting and keyboarding in writing development and make links to relevant curriculum documents handwrite fluently and legibly the appropriate script for their jurisdiction, in both unjoined and joined forms, including correct letter formation. Pre-service teachers should also be able to handwrite the numerals with correct letter formation. 	<p>Weight = .5-1</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Berninger et al. (2009) Graham (2018) Mangen & Balsvik (2016) McMaster & Roberts (2016) Santangelo & Graham (2016) Wolf et al. (2017) <p><u>Resources:</u></p> <ol style="list-style-type: none"> ACARA. (2020) Mackenzie & Spokes (2018). Spear-Swerling (2006) State Government of Victoria, Australia (n.d.) Resources specific to each of the states and territories, as appropriate to the handwriting script taught in that area.

Evidence and Resources

Evidence

1. Berninger, V.W., Abbott, R.D., Augsburger, A. & Garcia, M. (2009). Comparison of pen and keyboard transcription modes in children with and without learning disabilities. *Learning Disability Quarterly*, Vol. 32(3), 123-141 Stable URL: <http://www.jstor.com/stable/27740364>

This is an account of a study in which children were evaluated for text production at the letter, sentence and 'essay' level using handwriting and keyboarding. Comparisons were drawn between typically developing children and those with learning disabilities in handwriting and spelling, but with comparable verbal IQ scores. A key finding is that "Second, fourth, and sixth graders wrote longer essays (number of words) and wrote essays faster (seconds per word) by pen than by keyboard" (p.130). It is argued that *automaticity* in the low-level writing skill of transcription (whether children use handwriting or typing) is very important to writing fluency, and that teachers should not assume that keyboarding will necessarily make writing easier for students who struggle with handwriting. Automaticity is important for both modes and requires explicit teaching, and practice, in both modes. The paper also links automaticity to the role of working memory in the writing process.

2. Graham, S. (2018). Handwriting instruction: a commentary on five studies. *Reading and Writing*, 31(6), 1367-1377. <https://doi.org/10.1007/s11145-018-9854-5>.

This paper usefully summarises research from this special issue of the journal, in which all papers focus on handwriting. The importance of handwriting is discussed, and effective practices for teaching outlined. Interested readers can refer to the rest of the special issue.

3. Mangen, A. & Balsvik, L. (2016). Pen or keyboard in beginning writing instruction? Some perspectives from embodied cognition. *Trends in Neuroscience and Education*, 5, 99–106. <http://dx.doi.org/10.1016/j.tine.2016.06.003>

This paper reviews a range of research on handwriting and use of keyboards. It argues for the benefits of handwriting over keyboarding for learning to read as well as learning to write. The argument from neuroscience is that the 'embodied cognition' involved in the haptic activity of tracing, copying, and forming letters by hand provides a multiplicity of sensory inputs that enhances letter learning. While this may be more effortful than keyboarding for entry into learning to write, longer-term benefits from automaticity in handwriting are likely to pertain.

4. McMaster, E. & Roberts, T. (2016). Handwriting in 2015: A main occupation for primary school-aged children in the classroom? *Journal of Occupational Therapy, Schools, & Early Intervention*, 9(1), 38–50. <http://dx.doi.org/10.1080/19411243.2016.1141084>

This recent Australian study establishes that handwriting remains an important skill in 21st century classrooms. Observational studies of time spent on different activities in a sample of classes in Victoria from Prep, Year 3 and Year 5, found that fine motor activities occupied on average 96 minutes a day, of which 81 minutes involved handwriting. Activities using technology averaged 30 minutes per day. The authors conclude that handwriting remains important and that automaticity in handwriting reduces cognitive load and therefore supports learning more generally.

5. Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review*, 28, 225–265. doi 10.1007/s10648-015-9335-1.

A meta-analysis which endorses the importance of teaching handwriting, including benefits for quality, length, and fluency of students' writing. It is argued that handwriting instruction supports students in writing longer and better texts because as handwriting improves, "attentional resources" are freed to focus on ideas rather than letter formation.

6. Wolf, B., Abbott, R.D. & Berninger, V.W. (2017). Effective beginning handwriting instruction: Multi-modal, consistent format for 2 years, and linked to spelling and composing. *Reading and Writing* 30, 299–317. <https://doi.org/10.1007/s11145-016-9674-4>

This is a quasi-experimental study using a specific method, yet with findings that the authors claim are generalisable beyond that method. Teaching of handwriting is argued to be important for related literacy practices including reading, spelling, and aspects of written composition. Recommended best practices include “always embedding handwriting instruction in writing and reading instruction” (p.299), such as learning to handwrite letters along with related phonic knowledge for reading words that use those letters, and then practising handwriting purposefully to compose texts using those words. A ‘multimodal’ approach is recommended, in which children learn handwriting through “multiple sensory and motor methods all linked with language” (p.301).

Resources for ITE Providers and Preservice Teachers

7. Australian Curriculum, Assessment and Reporting Authority (ACARA). (2020). *National literacy learning progression* (Handwriting and keyboarding sub-element). Available from: <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/writing/?subElementId=50988&scaleId=0>

Provides guidance about expected usual progressions for children in learning handwriting and keyboarding in line with the outcomes of the Australian Curriculum: English.

8. Mackenzie, N.M. & Spokes, R. (2018). The why, who, what, when and how of handwriting instruction. *Practical Literacy*. 23(1), 17–20.

Useful short article suitable to set as a reading for preservice teachers. Includes practical advice and links to the Australian Curriculum: English.

9. Spear-Swerling, L. (2006). The importance of teaching handwriting. Reading rockets. Available from: <https://www.readingrockets.org/article/importance-teaching-handwriting>

Useful short article suitable to set as a reading for preservice teachers.

10. State Government of Victoria, Australia. Literacy Teaching Toolkit: Handwriting <https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/writing/Pages/litfocushandwriting.aspx#link17>

Excellent website with links to other relevant resources. Almost all the content is relevant to the teaching of handwriting generally and is not merely jurisdiction-specific. For example, one valuable resource is a short film on ‘Writing systems of the world’, which would support preservice teachers’ understanding of different writing systems and the community expertise that is likely to exist in schools serving culturally diverse populations.

11. Jurisdiction-specific resources

11 (a) New South Wales and ACT Handwriting style taught: NSW Foundation style

Department of Education NSW. (1987). *Writing K – 12*. Author.

Despite being out of print and no longer downloadable from the Dept. of Education’s website, this document is important in New South Wales for its detailed section dedicated to understanding and teaching ‘NSW Foundation style’ handwriting. The book is held in many university libraries in New

South Wales so it is recommended that ITE providers make the relevant excerpt (pp.147–200) available to preservice teachers.

State of New South Wales through the Department of Education and Training (2009). *NSW Foundation style handwriting*. Retrieved May 31 2020 from <https://newcastleearlycareerteachers.files.wordpress.com/2015/09/handwritinginfo.pdf>

This information sheet provides a summary of the basis of the NSW Foundation script in natural hand movements. Formerly available from the NSW Department of Education, it is currently only available in re-posted form.

11 (b) Queensland **Handwriting style taught: QCursive**

Curriculum Development Services, Department of Education, Queensland. (1990). The teaching of handwriting in Years 4 to 7: A handbook. Author. Available from <https://learningplace.eq.edu.au/cx/resources/file/94184208-1ee0-b069-d40b-dd4f2b7f694a/1/Years%204-7.pdf>

Department of Education, Queensland. (1984). The teaching of handwriting: A handbook. Author. Available from: <https://learningplace.eq.edu.au/cx/resources/file/7dfae909-95bf-3c0b-6bac-45972898a788/1/Handbook.pdf>

State of Queensland, The (Department of Education, Training and Employment). (2013). QCursive: A Queensland handwriting resource for lower primary. Available from: <https://learningplace.eq.edu.au/cx/resources/file/6ec3c227-4ee7-9d60-91cc-1eb43021a9d4/3/index.html>

11 (c) South Australia **Handwriting style taught: South Australian Modern Cursive**

Department of Education & Children's Services SA (2006). *ABC Handwriting in the South Australian Curriculum*. Author.

An excerpt of this book is available here:
https://www.education.sa.gov.au/sites/default/files/handwritingprogram.pdf?acsf_files_redirect

11 (d) Tasmania **Handwriting style taught: Tasmanian Handwriting Style**

The State of Tasmania, Department of Education. (2016 [2009]). *Handwriting* (updated). Available from: <https://publicdocumentcentre.education.tas.gov.au/Documents/Handwriting.pdf>

11 (e) Victoria, Western Australia, NT **Handwriting style taught: Victorian Modern Cursive**

State Government of Victoria, Australia. Literacy Teaching Toolkit: Handwriting; Handwriting fonts. Available from: <https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/Pages/handwriting.aspx>

Government of Western Australia. (2017). *Handwriting guidelines Revised*. Available with Department of Education login from: <http://det.wa.edu.au/curriculumsupport/primary/detcms/school-support-programs/primary/news/handwriting-guidelines-revised.en>

No WA-specific documents in the public domain could be located in the review process.

Module 28: Science Literacy

This module is positioned in between what is traditionally known as content area reading and the newer approach termed disciplinary literacies. Typically, content area reading covers study techniques and reading approaches that can help students to comprehend or to remember text better (with little regard to the type of text), whereas disciplinary literacy emphasises the unique features of texts and their implications to literacy use within the various disciplines (Shanahan & Shanahan, 2012). In this module, content area reading approaches that combine science and literacy instruction in primary school (e.g., Connor et al., 2017; Romance & Vitale, 2001) as well as disciplinary literacy practices for primary students (e.g., Parkin & Harper, 2018) are covered. The theoretical position taken, supported by the studies cited below, is two-fold: (1) literacy instruction could be combined with, and could benefit from being combined with, content instruction in science as early as in Foundation, and (2) disciplinary reading practices are not only a useful but also socially just addition to content area instruction already in primary schools.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
28.Science Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> Integrating literacy and science instruction^{1,2,3,4} Knowledge development and comprehension⁵ Nominalisation and agency in science texts^{6,7,8} Science vocabulary: Polysemy and morphology^{9,10} How a scientist reads science?⁸ Specific reading strategies for comprehending science text^{11,13} 	<p>Workshop on:</p> <ul style="list-style-type: none"> using morphological strategies to learn science vocabulary^{10,14} identifying, unpacking and teaching nominalisations⁷ designing focus texts and structured note-taking sheets for different science genres.^{11, 12} 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> integrate some literacy instruction with science instruction explain the difference between general reading strategies and disciplinary reading strategies identify and unpack nominalisations in science texts explain why science words can be difficult to learn and use morphological strategies to teach them. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Billman & Pearson, 2013 Pearson et al., 2010 Romance & Vitale, 2001 Connor et al., 2017 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Cervetti & Hiebert, 2015 Halliday, 2004 NSW & VIC Education Shanahan et al., 2011 Cervetti et al., 2015 Zoski et al., 2018 Shanahan & Shanahan, 2008 Parkin & Harper, 2018 Cervetti & Pearson, 2018 Bowers & Cooke, 2012

Evidence and Resources

Evidence summaries and original studies

1. Billman, A. & Pearson, P. D. (2013). Literacy in the disciplines. *Literacy Learning: The Middle Years*, 21 (1), 25-33.

Billman and Pearson discuss what characterises instruction that fosters facility with language in particular domains. They present five fundamental principles for understanding disciplinary literacy, consider challenges that educators face, and then provide suggestions for supporting students as they learn to use reading, writing, talking, and thinking in the pursuit of acquiring disciplinary knowledge. The five fundamental principles they promote are: (1) Throughout the K-12 curriculum, students should acquire literacy (reading, writing, and oral language) expertise while in the pursuit of disciplinary knowledge and inquiry skill; (2) Attention to disciplinary literacy instruction should begin as soon as students enter school; (3) When travelling into the world of disciplinary knowledge, it is best to situate literacy as a set of tools and not as a set of goals; (4) Text should never bear the entire burden for delivering knowledge in a discipline, and (5) Participation in a disciplinary community is key to acquiring disciplinary expertise and literacy.

2. Pearson, P. D., Moje, E., & Greenleaf, C. (2010). Literacy and science: Each in the service of the other. *Science*, 328, 459-463.

In this review of early research programs integrating science and literacy teaching, Pearson, Moje and Greenleaf use conceptual and empirical lenses to examine synergies between inquiry science and literacy teaching and learning of K-12 (kindergarten through high school) curriculum. They focus first on two questions: (1) how can reading and writing be used as tools to support inquiry-based science, and (2) how do reading and writing benefit when embedded in an inquiry-based science setting? After elaborating on the theoretical framework, they provide a review of the empirical support for several different approaches.

3. Romance, N. R. & Vitale, M. R. (2001). Implementing an in-depth expanded science model in elementary schools: Multi-year findings, research issues, and policy implications. *International Journal of Science Education*, 23 (4), 373-404. doi: 10.1080/09500690116738

Romance and Vitale summarize their research findings obtained over a five-year period (51 teachers, 1200 students) from the implementation of an in-depth expanded applications of science (IDEAS) model with average, above average, and at-risk students in Years 2-5. The IDEAS model replaced the time allocated for traditional reading/language arts instruction with a daily two hour time-block dedicated solely to in-depth science concept instruction which encompassed reading comprehension and language arts skills (e.g. concept-focused teaching, hands-on activities, utilization of science process skills, reading of science print materials, concept map construction, journal writing). The multi-year results revealed a consistent pattern of the model's effectiveness in improving both the science understanding and reading achievement. Participating students also consistently displayed significantly more positive attitudes and self-confidence toward both science and reading.

4. Connor, C. et al. (2017). Acquiring science and social studies knowledge in Kindergarten through fourth grade: Conceptualization, design, implementation, and efficacy testing of Content-Area Literacy Instruction (CALI). *Journal of Educational Psychology*, 109 (3), 301-320. <http://dx.doi.org/10.1037/edu0000128>

Connor et al. describe how they developed content-area literacy instruction (CALI) as an individualized (or personalized) instructional program for kindergarteners through to Year 4 to build science and social studies knowledge. CALI was developed to be implemented in general education classrooms, over multiple iterations, using principles of design-based implementation research. The aims were to develop CALI as a usable and feasible instructional program that would, potentially, improve science and social studies knowledge, and could be implemented during the literacy block without negatively affecting students' reading gains (i.e., no opportunity cost). They evaluated the efficacy of CALI in a randomized controlled field trial with 418 students in kindergarten through Year 4. Results show that CALI demonstrates promise as a usable and feasible instructional individualized

general education program, and is efficacious in improving social studies ($d = 2.2$) and science ($d = 2.1$) knowledge, with a small positive effect on oral and reading comprehension skills ($d = .125$).

8. Shanahan, C., Shanahan, T., & Mischia, C. (2011). Analysis of expert readers in three disciplines. *Journal of Literacy Research*, 43 (4), 393-429. doi: 10.1177/1086296X11424071.

In this paper Shanahan et al. make a case that each discipline possesses specialized genre, vocabulary, traditions of communication, and standards of quality and precision, and each requires specific kinds of reading and writing to an extent greater than has been recognised by teachers or teacher preparation programs. They then argue for teaching disciplinary literacy skills as opposed to content area reading skills. They describe a study aimed at describing educationally relevant differences in literacy use among three subject-matter disciplines—history, chemistry, and mathematics. To conduct this investigation, three teams were assembled, one for each discipline, including two disciplinary experts (historians, chemists, and mathematicians), two teacher educators who prepare high school teachers to teach those disciplines, and two high school teachers from each discipline. Using think-aloud protocols, transcripts from focus group discussions, a recursive process of member checking, and a cross-disciplinary consideration of reading approaches identified in each discipline, the study identified important differences in the reading behaviours of the six disciplinary experts. Although much of the work was based on think-aloud protocols and interviews with the disciplinary experts, the teachers and teacher educators participated with the disciplinary experts in focus-group discussions of the protocols, and their reactions and insights helped the disciplinary experts to articulate their approaches and to determine implications of the reading behaviours that were observed. Differences were evident in sourcing, contextualization, corroboration, close reading and rereading, critical response to text, and use of text structure or arrangement and graphics. Table 1 in the paper provides a useful summary of the differences between the disciplines.

Resources for ITE providers

5. Cervetti, G. N. & Hiebert, E. H. (2015) The sixth pillar of reading instruction: Knowledge development. *The Reading Teacher*, 68 (7), 548–551 doi: 10.1002/trtr.1343

The reciprocal relationships between knowledge and reading is covered in many of the references, but in this paper Cervetti and Hiebert present the arguments and evidence in a manner accessible to students.

6. Halliday, M.A.K. (2004). *The language of science*. London: Continuum

In this classic work, Halliday explores the semantic character of scientific discourse. The chapters are organized into two sections, one being on grammatical metaphor, the other dealing with scientific English. In language, there exists the potential for constructing new discourses, among them scientific discourse.

7. NSW Department of Education (<https://education.nsw.gov.au/teaching-and-learning/student-assessment/smart-teaching-strategies/literacy/writing/stage-3/spelling/nominalisation>)

Victoria Education and Training has a webpage resource “Introducing scientific language” that also includes an explanation of nominalisation

(<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/Pages/scientificlanguage.aspx>)

9. Cervetti, G. N., Hiebert, E. H., Pearson, P. D., & McClung, N. A. (2015). Factors that influence difficulty of science words. *Journal of Literacy Research*, 47 (2), 153-185.

This study examines the characteristics of words that predict word knowledge and word learning of Grade Year 2 to 4 students in science. The authors identified a set of word characteristics—length, part of speech, polysemy, frequency, morphological frequency, domain specificity, and concreteness—that, based on earlier research, were prime candidates to explain variation in word knowledge and word learning. Three characteristics were predictive of word knowledge (pre-test

score) at two or more grade levels; frequency, polysemy, and length predicted word difficulty independent of instruction. In addition, frequency and polysemy explained students' vocabulary growth scores (post-test controlling for pre-test) over the course of instruction at two of three year levels.

10. Zoski, J. L., Nellenbach, K. M., & Erickson, K. A. (2018). Using morphological strategies to help adolescents decode, spell and comprehend big words in science. *Communication Disorders Quarterly*, 40 (1), 57-64. <https://doi.org/10.1177/1525740117752636>

While this paper is written with speech and language pathologists and adolescents in mind, it is equally relevant for teachers and upper primary students who also require strategies that are tailored to the specific linguistic demands of curricular vocabulary to support their decoding, spelling, and comprehension of novel big words encountered in texts. In this article, Zoski et al. describe a morphological instruction approach for helping students navigate big words in science. Reasons why big words in science are particularly challenging for many students are described, and guidelines for selecting and prioritizing high utility science morphemes for targeted instruction with adolescent readers are provided. Specific strategies and examples are given, including a detailed example of a lesson that teaches students how and why to use morphological strategies to assist in their decoding and comprehension of unknown big words in science texts.

11. Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter? *Topics in Language Disorders*, 32 (1), 7-18.

This article compares disciplinary literacy with content area literacy and provides an analysis of the growing research base underlying the disciplinary literacy construct. Research studies on disciplinary literacy are drawn from expert–novice comparisons in which think-aloud data are collected during reading, from experts (i.e., mathematicians, chemists, historians) and students, and from functional linguistics analyses of the features of the grammars in disciplinary texts to identify the purposes and cognitive and communicative approaches that these grammars reveal. Finally, implications for school programs and instruction are considered.

12. Parkin, B., & Harper, H. (2018). Teaching with intent: *Scaffolding academic language with marginalised students*. Newtown, NSW: Primary English Teaching Association Australia.

In this book, Parkin and Harper argue that it is essential to develop a pedagogic approach that can support primary school teachers to engage with the literacy demands of 21st century participatory citizenship. They continue that this is a clear social justice issue as educationally marginalised students are likely to require explicit access to discipline-specific language and literacy skills to succeed at the secondary level. They note that each discipline has its own powerful texts, grammar, and vocabulary, and if active citizenship and choice in life trajectories is the goal of our education system, then all students are entitled to learn this language. They go on to present examples of classroom science and math instruction using “focus texts” that identify the discipline specific language to be learned, provide a scope and sequence for each topic, and help structure oral and written tasks.

13. Cervetti, G. N., & Pearson, P. D. (2018). Reading and understanding science texts. In A. Bailey, L. Wilkinson, & C. Maher (eds.), *Language, literacy, and learning in the STEM disciplines: How language counts for English learners*. New York, NY: Routledge

In this book chapter, Cervetti and Pearson summarise effective instructional routines both for English-only students and for EAL students.

14. Bowers, P.N., & Cooke, G. (2012). Morphology and the common core building students' understanding of the written word. *Perspectives on Language and Literacy*, 38 (4), 31-35.

Bowers and Cooke provide a short review of the literature establishing morphology as an important construct in reading development and then present Word Sumas and Morphological Matrix as teaching tools.

Resources that could be used with preservice teachers

1. Billman, A. & Pearson, P. D. (2013). Literacy in the disciplines. *Literacy Learning: The Middle Years*, 21 (1), 25-33.
4. Cervetti, G. N. & Hiebert, E. H. (2015) The sixth pillar of reading instruction: Knowledge development. *The Reading Teacher*, 68 (7), 548–551 doi: 10.1002/trtr.1343
7. NSW Department of Education (<https://education.nsw.gov.au/teaching-and-learning/student-assessment/smart-teaching-strategies/literacy/writing/stage-3/spelling/nominalisation>)

Victoria Education and Training has a webpage resource “Introducing scientific language” that also includes an explanation of nominalisation

(<https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/Pages/scientificlanguage.aspx>)

10. Zoski, J. L., Nellenbach, K. M., & Erickson, K. A. (2018). Using morphological strategies to help adolescents decode, spell and comprehend big words in science. *Communication Disorders Quarterly*, 40 (1), 57-64. <https://doi.org/10.1177/1525740117752636>
12. Parkin, B., & Harper, H. (2018). Teaching with intent: *Scaffolding academic language with marginalised students*. Newtown, NSW: Primary English Teaching Association Australia
13. Cervetti, G. N. & Pearson, P. D. (2018). Reading and understanding science texts. In A. Bailey, L. Wilkinson, & C. Maher (eds.), *Language, literacy, and learning in the STEM disciplines: How language counts for English learners*. New York, NY: Routledge
14. Bowers, P.N., & Cooke, G. (2012). Morphology and the common core building students' understanding of the written word. *Perspectives on Language and Literacy*, 38 (4), 31-35.

Module 29: Historical Literacy

Module 29 introduces preservice teachers to 'Historical literacy' for the primary school context. The development of historical literacy requires discrete and discipline specific reading and writing strategies (Bickford, 2018; Muetterties, Slocum, & Masterson, 2020; Shanahan, Shanahan & Mischia, 2011) supported by scaffolded critical historical processes, for example: historical inquiry, historical thinking and historical argumentation (Muetterties, Slocum, & Masterson, 2020; Wissinger et al. 2020; Wissinger, De La Paz & Jackson, 2020).

This module covers what is meant by historical literacy, how historians read history texts and the use of scaffolds to enable primary school students to build the historical thinking skills required for critical understandings of historical texts, and communication of historical arguments. Historical literacy is important because History is uniquely placed to facilitate children's shift from concrete narrativised understandings of people and events to a critical, multi-perspective understanding of past and present worlds.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
29. Historical Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> What is meant by historical inquiry, historical thinking, historical argumentation, historical literacy?^{1,3,4,6,7,9,10} How a historian reads history texts^{3,4,5,7,8,10} Examine the literature discussing the use of scaffolds to enable historical literacy in primary school students^{1,2,3,6,8,10} Historical source analysis scaffolds^{1,3,7,8} Writing for History Scaffolds^{1,7,8,10} Discuss and explain how the results of source analysis support historical writing and why historical writing is a discrete form of written communication^{1,3,4,7,8,9,10} 	<p>Workshop focused on designing, trialling, and evaluating historical source analysis scaffolds and writing for history scaffolds will include:</p> <ul style="list-style-type: none"> workshop preparations wherein preservice teachers will: <ul style="list-style-type: none"> locate a range of source analysis scaffolds and writing for history scaffolds; consider features and stage appropriateness of each scaffold. Select ONE scaffold (note reasons for choice) and design a stage appropriate worksheet.^{1,3,7,8,11,12,13} workshop activities wherein preservice teachers will: <ul style="list-style-type: none"> work in small groups and with reference to sources, preservice teachers trial and evaluate each group member's scaffolds. Peers provide evaluative feedback.^{3,8,9,10} workshop consolidation wherein preservice teachers will: <ul style="list-style-type: none"> reflect on their peer evaluations and make amendments to both worksheets. Preservice teachers complete a formal self-evaluation in which they justify their decisions to modify aspects of their worksheets and/or defend their decisions to make no amendments.^{3,8,9,10} 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> define historical inquiry, historical thinking, historical argumentation, historical literacy describe the discipline specific skills a historian draws on to explain how a historian reads history texts locate, describe, and evaluate historical source analysis scaffolds locate, describe and evaluate writing for history scaffolds describe and demonstrate how source analysis is embedded in historical writing explain why historical writing is a discrete form of literacy. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Bickford, 2018 İflažoglu, & Çaydaş, 2005 Muetteties et al., 2020 Nokes, 2014 Shanahan et al., 2011 Waring & Bentley, 2012 Wissinger & Ciullo, 2018 Wissinger et al., 2020 Wissinger, Ciullo & Shiring, 2018 Wissinger et al., 2020 <p><u>Resources:</u></p> <ol style="list-style-type: none"> https://www.archives.gov/education/lessons/worksheets http://ergo.slv.vic.gov.au/teachers/student-templates-source-analysis https://www.sl.nsw.gov.au/learning/what-history-guide-primary-teachers

Evidence and Resources

Evidence

1. Bickford III, J.H. (2018) Primary Elementary Students' Historical Literacy, Thinking and Argumentation about Helen Keller and Anne Sullivan. *The History Teacher*. 51(2), 269-292.

In this paper, Bickford reports on how a second-grade teacher positioned students to engage in inquiry, historical literacy, historical thinking, and historical argumentation. The pedagogical approach included: the use of multiple and differentiated literacy circles to investigate the accuracy of trade books (school history textbooks); use of broad inquiry questions to guide discussion and student investigations; primary source (document) analysis; and scaffolded evidence-based responses to inquiry questions. Students created: *Biography Notecards* in which they communicated their historical knowledge; Venn diagrams in which they communicated their understanding of the similarities and differences between sources; and, a *Biography Postal Stamp* in which they made a judgement of value based on historical evidence. Results from the study demonstrated that the highest levels of criticality (developed through history literacy, historical thinking, and historical argumentation) are well within the grasp of primary elementary students, who can be trained in these more critical historical processes.

2. İlaçzıoğlu, A. & Çaydaş, E. (2005). An Assessment of 4th and 7th grade Social Studies instruction in terms of historical thinking skills. *Mediterranean Journal of Educational Studies*, 10(1), 17-43.

The objective of this study was to assess the learning activities used by Year 4 and 7 teachers in order to improve elementary school pupils' historical thinking skills. The study found that the majority of teachers in the sample group relied on narrative and descriptive methods of historical instruction and that this method of instruction does not improve the historical thinking or writing skills of primary school students. The findings reported that activities encouraging the development of historical thinking skills were not adequately emphasized by the teachers, and that the teachers utilized only the course book as their material for course presentations.

3. Muetterties, C., Slocum, C., & Masterson, E. (2020). What is a Vote Worth? A Focused Inquiry to Scaffold Elementary Historical Thinking. *The Social Studies*, 111(3), 133-142.

In this paper, Muetterties et al. designed and implemented a Year 5 inquiry on the Suffrage Movement using a focused version of the Inquiry Design Model (IDM) Blueprint. Using source analysis scaffolds coupled with discussion and organisational tasks, students used primary and secondary sources to create complex evidence-based claims. Results illustrate how focussed and discipline specific inquiry practices support rigorous source work and historical thinking in elementary classrooms.

4. Nokes, J. (2014). Elementary Students' Roles and Epistemic Stances During Document-Based History Lessons. *Theory & Research in Social Education*, 42(3), 375-413.

This article reports on a study that repositioned elementary students in new roles as active, critical participants in historical inquiry. It reports Year 5 students' responses to instructional methods intended to help them understand the nature of historical knowledge, appreciate the work of historians, read and reason with greater historical sophistication, and view themselves in more historian-like roles within a school setting. Qualitative data from the study revealed a shift in students' epistemic stance (from objective to subjective historical understanding); and, a shift in student understanding of the work of the historian (from simply reporting the past, to looking for clues and piecing together the past from sources of evidence). Students showed some modest yet significant differences from the start to the end of the school year in the way they viewed texts and themselves in the process of learning history.

5. Shanahan, C., Shanahan, T., & Misischia, C. (2011). Analysis of expert readers in three disciplines. *Journal of Literacy Research*, 43 (4), 393-429.

In this paper Shanahan et al. make a case that each discipline possesses specialised genre, vocabulary, traditions of communication, and standards of quality and precision, and each requires specific kinds of reading and writing to an extent greater than has been recognised by teachers or teacher preparation programs. They then argue for teaching disciplinary literacy skills as opposed to content area reading skills. They outline a study aimed at describing educationally relevant differences in literacy use among three subject-matter disciplines—history, chemistry, and mathematics. To conduct this investigation, three teams were assembled, one for each discipline, including two disciplinary experts (historians, chemists, and mathematicians), two teacher educators who prepare high school teachers to teach those disciplines, and two high school teachers from each discipline. Using think-aloud protocols, transcripts from focus group discussions, a recursive process of member checking, and a cross-disciplinary consideration of reading approaches identified in each discipline, the study identified important differences in the reading behaviours of the six disciplinary experts. Although much of the work was based on think-aloud protocols and interviews with the disciplinary experts, the teachers and teacher educators participated with the disciplinary experts in focus-group discussions of the protocols, and their reactions and insights helped the disciplinary experts to articulate their approaches and to determine implications of the reading behaviours that were observed. Differences were evident in sourcing, contextualization, corroboration, close reading and rereading, critical response to text, and use of text structure or arrangement and graphics.

6. Waring, S. M., & Bentley, C. C. (2012). Constructing historical profiles with digital natives. *Contemporary Issues in Technology and Teacher Education*, 12(2), 184-208.

The purpose of this study was to examine a group of fifth graders' experiences, beliefs, and opinions during the construction of digital historical agent profiles. This research study examined a project in which students were engaged in the learning of historical content and were asked to convey information about the life of someone from the past through the medium of the present and future using a social networking profile page. Scaffolded instruction was provided for the use of relevant technologies to complete the project. This study was constructed to gain a better understanding of how students engage critical historical thinking skills through investigating and developing conclusions about the history and lives of historical agents while utilising technology. It was found that authentic historical inquiry was achieved, historical thinking primarily occurred at a novice level, and students engaged with the technology and found the creation of a digital historical profile to be a more interesting way to convey their knowledge of the content.

7. Wissinger, D., & Ciullo, S. (2018). Historical Literacy Research for Students with and at Risk for Learning Disabilities: A Systematic Review. *Learning Disabilities Research & Practice*, 33(4), 237-249.

A systematic review of Historical Literacy interventions conducted during the past 17 years (2000–2017) with students at risk for Learning Disability is presented in this article. Studies under review were conducted in inclusive social studies classrooms and interventions were delivered as instructional methods to mainstream, inclusive classes. Wissinger and Ciullo define Historical Literacy as the skills required to reason, read, write, and learn with historical evidence from the past. Results are synthesized and reported according to three themes: (1) disciplinary reading, (2) historical writing, and (3) classroom research projects. They report that: (1) a combination of discipline-specific (e.g., sourcing, contextualization) and content-area strategies (e.g. building background knowledge, reviewing vocabulary) supports students as they read from source documents; (2) schematic instruction (on, for example, historical reasoning and critical questions) and procedural facilitators (e.g., graphic organizers, mnemonics) to delineate processes used by experts assist young students in historical writing; and (3) project-based inquiry provides learners an opportunity to engage in collaborative discussion, create presentations to present claim statements and present historical findings to an audience.

8. Wissinger, D., De La Paz, S., Barnett, A., Connelly, V., & Miller, B. (2020). Effects of Discipline-Specific Strategy Instruction on Historical Writing Growth of Students With Writing Difficulties. *Journal of Learning Disabilities*, 53(3), 199-212.

This article reports the results from a study investigating the effects of a discipline-specific reading and writing intervention (I3C/PROVE IT!) with Year 4 and 5 students. Participants included 237 students with writing difficulties (WD) from an initial pool of 608 upper elementary school students in a larger study. Teachers and students were randomly assigned to I3C/PROVE IT! or business-as-usual conditions and then provided instruction on reading historical documents and writing evidence-based arguments. Instruction occurred over 25 school days and included five one-week historical investigations. Lessons occurred during students' regular 40- to 50-minute social studies block. All instruction was delivered by 11 general education teachers. Special education teachers and speech-language pathologists supported routine duties but did not provide additional instruction to students with, or at risk of having, disabilities.

The materials for each of the five investigations contained a central historical question, two conflicting primary sources, a secondary source, and a map, a timeline, a photograph, or a political cartoon. Findings indicated that over a period of almost 3 months, the historical writing growth trajectories of students with WD in I3C/PROVE IT! classrooms were significantly greater than their peers in business-as-usual classrooms. Significant findings favouring I3C/PROVE IT! students also generalized to domain-general measures. This study provides evidence for the benefits of discipline-specific interventions in social studies for students with writing difficulties.

9. Wissinger, D., Ciullo, S., & Shiring, E. (2018). Historical Literacy Instruction for All Learners: Evidence From a Design Experiment. *Reading & Writing Quarterly*, 34(6), 568-586.

In this study, the authors used a design-based research model to examine a historical literacy intervention in Year 6 classrooms. The article describes the results across two separate instructional cycles and for students grouped into four categories: (a) high-achieving students (n=23 and n=24 for Cycle I and Cycle II, respectively), (b) average-achieving students (n=39 and n=44), (c) low achieving students (n=17 and n=23), and students with disabilities (n=9 and n=8). The findings suggest that the intervention enhanced students' ability to read historical sources and produce more sophisticated historical writing. Although comparisons of measures of reading comprehension suggest that high-achieving students outperformed students with disabilities in two separate instructional cycles (all $p < .05$), students with disabilities earned comparable comprehension scores as their average-achieving and low-achieving peers in both instructional cycles; moreover, all four groups of learners constructed essays at post-test in the second instructional cycle that were statistically similar.

10. Wissinger, D., De La Paz, S., & Jackson, C. (2020). The Effects of Historical Reading and Writing Strategy Instruction With Fourth- Through Sixth-Grade Students. *Journal of Educational Psychology*.

In this quasi-experimental study, 608 Year 4, 5 and 6 students explored five historical investigations. In the experimental condition, teachers used a cognitive apprenticeship model to teach students historical reading and writing strategies. Comparison teachers used the same materials to deliver a business-as-usual form of instruction. Random assignment was at the individual level for Year 4 and 5 students and at the classroom level for Year 6. After controlling for gender, ethnicity, and pre-test scores, the findings indicated that experimental students outperformed their peers in control classrooms on measures of essay length ($ES=0.25$), holistic writing quality ($ES=0.59$), and argumentative historical writing ($ES=0.67$). Differences in students' argumentative historical writing remained after six weeks ($ES=0.71$). Finally, students with disabilities as well as those who did not meet annual reading proficiency benchmarks on state-administered assessments all benefited from experimental instruction. These results suggest that with appropriate supports and the opportunity to engage in meaningful historical content, students in Years 4 through 6 can analyse primary and secondary source documents and write evidence-based historical arguments.

Resources for ITE Providers

11. Bickford III, J.H. (2018) Primary Elementary Students' Historical Literacy, Thinking and Argumentation about Helen Keller and Anne Sullivan. *The History Teacher*. 51(2), 269-292.
12. <https://www.archives.gov/education/lessons/worksheets>
13. <http://ergo.slv.vic.gov.au/teachers/student-templates-source-analysis>
14. <https://www.sl.nsw.gov.au/learning/what-history-guide-primary-teachers>

The three websites referenced above are provided as example resources for historical source analysis scaffolding. None of these scaffolds is referenced in the scholarly literature.

Resources for Preservice Teachers

15. <https://www.archives.gov/education/lessons/worksheets>
16. <http://ergo.slv.vic.gov.au/teachers/student-templates-source-analysis>
17. <https://www.sl.nsw.gov.au/learning/what-history-guide-primary-teachers>

Module 30: Health and Physical Literacy

This module introduces preservice teachers to 'Health and physical literacy'. These are applied literacies that are important for preservice teachers to understand not only for their important content but also for their conceptualisation of literacy as understanding information that includes print (the conceptualisation followed in most other modules), or alternatively, as a competency in how people understand information about health and health care, and how they apply that information to their lives, use it to make decisions and act on it. The health and physical literacies are important because they shape people's health and affect safety and quality of life. This module will examine different positions of teachers, health workers, and public health offices using a strengths-based, inclusive, and culturally responsive approach to health and physical literacy education. It will also examine the current evidence about developing early literacy skills to ensure people can move from functional to critical consumers of health-care and make positive lifestyle choices.

The module aligns with Australian Professional Standards for Teachers (1.1.1, 1.2.1, 1.5.1, 2.1.1, 2.2.1, 2.5.1) and also with Australian Curriculum: Health and Physical Education.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
30. Health & Physical Literacy (2-4; M3-M14)	<ul style="list-style-type: none"> Importance of health & physical literacy^{1,2} Metalanguage of health, sport and physical activity^{3,4} Literacy skills in applied, practiced and situated health contexts^{4,5} Interrogating the power discourses that enable and marginalise various groups^{4,5} Evidence-informed approaches to teaching health and physical literacy^{6,7,8} Strengths-based approaches to instruction⁹ 	<p>Workshop on:</p> <ul style="list-style-type: none"> examining the UNESCO Literacy Framework¹⁰ and the World Health Organization position statements on Health Literacy¹¹ to justify the teaching of metalanguage and understand the power discourses associated with language examining ‘strengths-based’ approaches to Health and Physical Education Curriculum standards/outcomes¹² in order to develop practice-based teaching strategies that engage students in health/physical literacies exploring the family backgrounds and the alignment of community health assets to those needs. 	<p>After completing the module, preservice teachers can:</p> <ol style="list-style-type: none"> research and apply information relating to knowledge and services to respond to a health-related question apply advanced knowledge, understanding and skills to actively and independently engage with a health issue apply new information to changing circumstances, life stages, and contexts selectively access and critically analyse health information from a variety of sources to take action to promote health, safety, and wellbeing for themselves and others. 	<p>Weight = 1</p> <p>Should be included in Health and Physical Education pedagogy unit</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Nutbeam, 2000 Cairney et al., 2019 Wilson et al., 2005 Segrave et al., 2006 Wagner, 2011 Peralta et al., 2017 Peralta & Rowling, 2018 <p><u>Resources:</u></p> <ol style="list-style-type: none"> Dudley et al., 2017 McCuaig et al., 2013 United Nations Educational, Scientific, and Cultural Organization, 2006 World Health Organization, 2016 ACARA, 2019. Health and Physical Education.

Evidence and Resources

Evidence

The literature on student outcomes is still lacking in this field and the following documents mostly discuss different conceptual models and their implementations.

1. Nutbeam, D. (2000). Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15(3), 259-267.

Nutbeam examines the concept of health literacy as distinctions between functional health literacy, interactive health literacy and critical health literacy. Through this analysis, improving health literacy means more than transmitting information, and developing skills to be able to read pamphlets and successfully make appointments. By improving people's access to health information and their capacity to use it effectively, improved health literacy is critical to empowerment. The implications for the content and method of contemporary health education and communication can then be considered. Emphasis is given to more personal forms of communication, and community-based educational outreach, as well as the political content of health education, focussed on better equipping people to overcome structural barriers to health.

2. Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical literacy, physical activity and health: Toward an evidence-informed conceptual model. *Sports Medicine*, 49(3), 371-383.

Cairney et al. argue that physical literacy provides a powerful lens for examining movement in relation to physical activity and motor skill outcomes, environmental context, and broader social and affective learning processes. This conceptual framework positions the learning processes (cognitive, social, physical, and affective) of physical literacy as a health determinant.

3. Wilson, E., Chen, A. H., Grumbach, K., Wang, F., & Fernandez, A. (2005). Effects of limited English proficiency and physician language on health care comprehension. *Journal of general internal medicine*, 20(9), 800-806.

Wilson et al. examine the relationship between English proficiency and medical comprehension. A growing body of research suggests that language barriers encountered in health care settings may compromise the quality of care for limited English-proficient (LEP) patients. Language barriers appear to decrease access to primary and preventive care, impair patient comprehension, decrease patient adherence, and diminish patient satisfaction.

4. Segrave, J. O., McDowell, K. L., & King, J. G. (2006). Language, gender, and sport: A review of the research literature. In *Sport, rhetoric, and gender* (pp. 31-41). Palgrave Macmillan, New York.

In this paper, Segrave et al. examine the way in which language associated with organized sport serves as a powerful cultural arena for constructing and perpetuating the ideology and practices of privilege and dominance, sport assuming a profound role in the production and maintenance of male hegemony, contributing to historical patterns of male empowerment and female disadvantage.

5. Wagner, D. A. (2011). What happened to literacy? Historical and conceptual perspectives on literacy in UNESCO. *International Journal of Educational Development*, 31(3), 319-323.

At its founding in 1946, UNESCO put literacy at the top of its education and human rights agenda. More than eight decades later, UNESCO maintains (on its website) the mission statement: "UNESCO is at the forefront of global literacy efforts and is dedicated to keeping literacy high on national, regional and international agendas." Wagner uses this position to explore how the concept of 'literacy' now permeates into the scope of physical and health literacy in several UN mandates to achieve the 2030 Sustainability Goals

6. Peralta, L., Rowling, L., Samdal, O., Hipkins, R., & Dudley, D. (2017). Conceptualising a new approach to adolescent health literacy. *Health Education Journal*, 76(7), 787-801.

Health literacy research for adolescents and young people has been growing in importance. However, conceptualisation has been largely limited to concepts of adult health literacy in healthcare and disease prevention settings. Peralta et al. suggest that the challenge for the future lies in developing a coherent concept that combines adolescent development, educational theory, whole-school action and change, and critical health literacy. They continue that such an approach needs to be both enabling and positive for students currently, and should also help facilitate health literacy outcomes in the future.

7. Peralta, L. R., & Rowling, L. (2018). Implementation of school health literacy in Australia: A systematic review. *Health Education Journal*, 77(3), 363-376.

The development of school health literacy through school-based programs is attracting international interest. However, there exist competing definitions, models, and understandings of how these programmes should be conceptualised, implemented, and evaluated. Australian Curriculum documents such as those relating to health and physical education currently focus on health literacy both in terms of learning outcomes and subject matter.

Resources that can be used with preservice teachers

8. Dudley, D., Telford, A., Stonehouse, C., Peralta, L., & Winslade, M. (2017). *Teaching quality health and physical education*. Cengage AU.

This book explores the emergence of health and physical literacy in our understanding of Health and Physical Education. Dudley et al. argue that to adequately function in the 21st Century, a person must possess a wide range of abilities and competencies (literacies) that are multiple, dynamic, and malleable.

9. McCuaig, L., Quennerstedt, M., & Macdonald, D. (2013). A salutogenic, strengths-based approach as a theory to guide HPE curriculum change. *Asia-Pacific Journal of Health, Sport and Physical Education*, 4(2), 109-125

The Australian Health and Physical Education (HPE) curriculum takes a strengths-based approach that emphasizes questions such as 'What keeps me healthy and active?' rather than 'What risks, diseases and behaviours should I learn to avoid?'. A salutogenic approach to a health literacy unit provides some initial insight into the possibilities and challenges posed by the implementation of a strengths-based orientation to HPE. Questions of relative emphases and potential weaknesses are raised in this paper as means of identifying the influence of curriculum interpretation, design, and pedagogical practice in securing the implementation of a strengths-based oriented Australian HPE.

10. United Nations Educational, Scientific, and Cultural Organization (2006). *Education for all: Literacy for Life*. UNESCO: Paris

Literacy is a term that most people in society have come to understand as an essential part in an individual's education and a necessary component to participate in society. In recent years, though, literacy as a concept—and its propagation into numerous disciplines of knowledge—has proved to be both complex and disputed, and is continuing to be interpreted and demarcated in a variety of ways. Theories of literacy have evolved from those focused solely on changes in an individual to more complex views encompassing the broader social contexts (i.e., the "literate society"), and even within specific disciplines of knowledge (e.g., physical literacy, health literacy, computer literacy, financial literacy) that embolden and enable literacy activities and practices to occur. As a result of these and other developments, there has been an evolution from viewing literacy as a simple process of acquiring basic skills to using these skills in ways that contribute to socio-economic development, to developing the capacity for social awareness, and critical reflection as a basis for personal and social change.

11. World Health Organization (2016). *The Mandate for Health Literacy. 9th Global Conference on Health Promotion*. Shanghai: China

Health literacy is also not just a personal resource; higher levels of health literacy within populations yield social benefits, too, for example by mobilising communities to address the social, economic, and environmental determinants of health. This understanding, in part, fuels the growing calls to ensure that health literacy not be framed as the sole responsibility of individuals, but that equal attention be given to ensure that governments and health systems present clear, accurate, appropriate and accessible information for diverse audiences

12. ACARA (2019). Health and Physical Education. <https://www.australiancurriculum.edu.au/f-10-curriculum/health-and-physical-education/>

The national HPE curriculum ties in two important propositions concerning building literacy. The first, rather than focusing only on potential health risks or a deficit-based model of health, has a stronger focus on supporting students to develop the knowledge, understanding and skills they require to make healthy, safe and active choices that will enhance their own and others' health and wellbeing. This approach affirms that all students and their communities have particular strengths and resources that can be nurtured to improve their own and others' health, wellbeing, movement competence and participation in physical activity. The second is consistent with a strengths-based approach, in that health literacy is a personal and community asset to be developed, evaluated, enriched and communicated.

Module 31: Mathematical Literacy

This module introduces preservice teachers to mathematical (or maths) literacy. Mathematical literacy is defined as the ability to “analyse, reason, and communicate ideas effectively as [students] pose, formulate, solve, and interpret mathematical problems in a variety of situations” (OECD/PISA, 2018).¹ Mathematical literacy refers to the specific written, oral, and symbolic language that needs to be mastered in order to learn and communicate mathematics. This module will introduce preservice teachers to the specific features of mathematical literacy and its contribution to mathematical achievements. Preservice teachers will learn how to explicitly teach mathematical literacy and how to differentiate their teaching to the needs of a diverse classroom of learners.

The module can be taught together with the other disciplinary literacies. Some aspects also fit well with the vocabulary module and general reading comprehension. It can also be a part of a mathematics course.

¹ OECD (2018). "PISA for Development Mathematics Framework", in *PISA for Development Assessment and Analytical Framework: Reading, Mathematics and Science*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264305274-5-en>.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weights)
31.Introduction to mathematical literacy (2-4; M3-M14)	<ul style="list-style-type: none"> What are the specific spoken language, reading/writing and graphic/symbolic skills required for understanding and communicating mathematics and mathematical problem solving?^{1, 2} Why is teaching mathematical language, discourse, and disciplinary literacy important?^{3,4} Read like a mathematician: expert processing of multimodal mathematical texts⁵ Mathematical literacy in context: discuss statements referring to mathematical literacy in key policy guidelines [Australian and relevant state/territory curricula] Effective approaches to teaching mathematics vocabulary and language with reference to explicit vocabulary teaching^{2, 4, 6, 7, 8} Effective reading comprehension strategies for solving word problems including effective interpretation of semantic structure^{9, 10} Mathematical writing: effective strategies, including promising new approaches like self-regulated strategy development^{11, 12} Specific challenges of teaching mathematical literacy to students from diverse linguistic, cultural and SES backgrounds, EAL/D, Aboriginal and Torres Strait Islander students, students with learning difficulties, Developmental Language Disorder (DLD) and some promising teaching approaches^{4,5,7,13,14, 15} 	<p>Workshop on:</p> <ul style="list-style-type: none"> examining the different types of mathematical vocabulary and what challenges they pose for different learners planning explicit mathematical vocabulary teaching sequences for students across different stages examining the different types of mathematical vocabulary, semiotic representations and grammatical constructions required to solve and understand mathematics planning a session to teach reading strategies to solve word problems in small groups. Different groups can work on the different stages and focus on a variety of learners examining different mathematical writing approaches; consider features of each approach and stage appropriateness critically evaluating ACARA learning progressions with regards to mathematical literacy teaching examining error types for different word problems. 	<p>After completing the module, students can:</p> <ol style="list-style-type: none"> define the term mathematical literacy and provide examples in teaching and learning describe the contributions of foundational literacy skills vs specific spoken and written language skills required to succeed in learning mathematics recognise importance of semantic structure in word problems integrate core mathematical teaching with teaching mathematical literacy be able to plan effective and engaging mathematical literacy sequences for learners across the stages plan effective and engaging mathematical literacy sequences for diverse learners. 	<p>Weight = 1-2</p> <p><u>Evidence:</u></p> <ol style="list-style-type: none"> Schleppegrell, 2007 DiCerbo et al., 2014 Homburg et al., 2018 Fuchs et al., 2019 Shanahan et al., 2011 Hassinger-Das et al., 2015 Purpura et al., 2017 Monroe & Orme, 2002 Powell, 2011 Verschaffel et al., 2020 Powell et al., 2017 Hughes & Lee, 2020 Powell et al., 2020 Herbert et al., 2019 Harper & Parkin, 2018

Evidence and Resources

Evidence and Resources for ITE Providers

1. Schleppegrell, M. J. (2007). The linguistic challenges of mathematics teaching and learning: A research review. *Reading & Writing Quarterly*, 23(2), 139-159.

This highly influential paper describes the linguistic challenges of the “mathematical register” (first attributed to the work of Halliday). This paper gives a great overview of mathematical language and the challenges it poses for different learners.

2. DiCerbo, P. A., Anstrom, K. A., Baker, L. L., & Rivera, C. (2014). A review of the literature on teaching academic English to English language learners. *Review of Educational Research*, 84(3), 446-482.

This review focuses on the concept of Academic English, its teaching practices and teacher preparation and training to teach Academic English. The authors suggest that the evidence reviewed highlights that explicit teaching of the specific linguistic features and discourse structures used in each discipline are essential to be able to understand and communicate both orally and in writing.

3. Hornburg, C. B., Schmitt, S. A., & Purpura, D. J. (2018). Relations between preschoolers' mathematical language understanding and specific numeracy skills. *Journal of Experimental Child Psychology*, 176, 84-100.

This paper contributes to our understanding of how mathematical language is critical for numeracy skill development. Three to six-year olds' mathematical language was found to be significantly related to most numeracy skills, including verbal counting, one-to-one correspondence, numeral identification, cardinality, comparisons of sets and/or numerals, ordering numerals, and story problems. However, mathematical language was not significantly related to either subitizing or formal addition which are independent of general language ability. Importantly, mathematical language was generally more proximal to each of these numeracy skills than was general language. These results indicate the importance of focused teaching of mathematical language within early mathematics teaching and interventions.

4. Fuchs, L. S., Fuchs, D., Seethaler, P. M., Cutting, L. E., & Mancilla-Martinez, J. (2019). Connections between reading comprehension and word-problem solving via oral language comprehension: Implications for comorbid learning disabilities. *New Directions for Child and Adolescent Development*, 165, 73-90.

This paper describes a model which connects reading comprehension and word-problem solving development via oral language comprehension. A brief overview of research exploring these connections is provided. The paper then outlines a promising approach for investigating and treating the concurrent difficulties in reading and word-problem solving via dedicated comprehension training.

5. Shanahan, C., Shanahan, T., & Misichia, C. (2011). Analysis of expert readers in three disciplines. *Journal of Literacy Research*, 43 (4), 393-429. doi: 10.1177/1086296X11424071.

In this paper Shanahan et al. make a case that each discipline possesses specialized genre, vocabulary, traditions of communication, and standards of quality and precision, and each requires specific kinds of reading and writing to an extent greater than has been recognised by teachers or teacher preparation programs. They then argue for teaching disciplinary literacy skills as opposed to content area reading skills. They describe a study aimed at highlighting educationally relevant differences in literacy use among three subject-matter disciplines—history, chemistry, and mathematics. Table 1 in the paper provides a useful summary of the differences between the disciplines.

6. Hassinger-Das, B., Jordan, N. C., & Dyson, N. (2015). Reading stories to learn math: Mathematics vocabulary instruction for children with early numeracy difficulties. *Elementary School Journal*, 116 (2), 242–264. doi:10.1086/683986

This paper is an example of a successful mathematical vocabulary teaching approach for the early primary school years. The randomised controlled trial examined the efficacy of a storybook reading intervention targeting mathematics vocabulary (e.g., equal, more, less) and associated number concepts. Kindergarteners with early numeracy difficulties (N = 124) were recruited from four schools. Random assignment occurred to one of three groups: a storybook number competencies intervention, a number sense intervention, or a business-as-usual control. Group interventions occurred over 8 weeks (24 thirty-minute sessions). The storybook intervention group outperformed the other groups on measures of mathematics vocabulary, including both words that were very similar to the intervention targets and those that were not.

7. Purpura, D. J., Napoli, A. R., Wehrspann, E. A., & Gold, Z. S. (2017). Causal connections between mathematical language and mathematical knowledge: A dialogic reading intervention. *Journal of Research on Educational Effectiveness*, 10 (1), 116-137.

The authors report on an intervention study that aimed at evaluating the teaching of mathematical language in a randomised controlled trial. Children in the experimental group participated in a mathematical language storybook reading intervention. The intervention used the principles and techniques of dialogic reading to focus on mathematical language, but not mathematical content knowledge. Results from the study show a significant difference in favour of the intervention group on post-test measures of mathematical language and mathematical knowledge (with substantial effect sizes), but no between-group differences on expressive vocabulary.

8. Monroe, E. E., & Orme, M. P. (2002). Developing mathematical vocabulary. *Preventing school failure: Alternative education for children and youth*, 46(3), 139-142.

This short paper reviews different methods of effective mathematical vocabulary teaching.

9. Powell, S. R. (2011). Solving word problems using schemas: A review of the literature. *Learning Disabilities Research & Practice*, 26(2), 94-108.

This systematic review includes intervention studies that targeted problem solving by incorporating explicit teaching through a schema in second and third grade students with learning disabilities. Successful schema teaching can include two different approaches: 1) Schema-based instruction teaches students to choose a schematic diagram that fits the problem in order to solve addition and subtraction word problems. An addition to this approach has been the inclusion of using mathematical equations after filling the diagram. 2) Schema-broadening instruction also teaches students to select a schema that fits their problem and use mathematical equations, but it adds explicit teaching regarding the transfer of this knowledge to allow students to recognize problem types regardless of new or unknown features. Five and seven intervention studies were included for each approach respectively. The results from the review suggest that using schemas can be beneficial for students, including those that may be at risk of developing a learning disability.

10. Verschaffel, L., Schukajlow, S., Star, J., & Van Dooren, W. (2020). Word problems in mathematics education: a survey. *ZDM*, 1-16.

This paper provides a recent and comprehensive overview of the research literature on word problem solving. It discusses research looking at word problems primarily as problems of comprehension. Strategies for word problem solving are reviewed.

11. Powell, S. R., Hebert, M. A., Cohen, J. A., Casa, T. M., & Firmender, J. M. (2017). A synthesis of mathematics writing: Assessments, interventions, and surveys. *Journal of Writing Research*, 8(3), 493-526. doi [10.17239/jowr-2017.08.03.04](https://doi.org/10.17239/jowr-2017.08.03.04)

This review focuses on mathematics writing, defined as any writing that is related to mathematics. Based on an existing classification, Powell and colleagues differentiate the following types of mathematics writing: exploratory, informative and explanatory, argumentative and creative. The review included studies related to mathematics writing assessments, mathematics writing interventions and surveys on opinions about mathematics writing practices or experiences. Regarding the assessments, results show that students do mathematics writing across a variety of mathematical

domains, but that they mostly write explanations and to a lesser extent use argumentative or creative writing. Results from journal writing interventions show positive effects of mathematics journal writing both on mathematical knowledge and mathematics writing assessments. Finally, the surveys showed that teachers recognise that students are given fewer opportunities to engage with writing in mathematics compared to other disciplines, and that when they do engage, they are not taught how to do it. However, students who engage in mathematics writing reflect positively on this practice, and express a desire to continue with it.

12. Hughes, E. M., & Lee, J. Y. (2020). Effects of a mathematical writing intervention on Middle School students' performance. *Reading & Writing Quarterly*, 36(2), 176-192.

This paper describes a self-regulated strategy development (SRSD) intervention on mathematics writing for sixth grade students using a quasi-experimental design. The SRSD technique includes teaching of general and genre-specific writing strategies as well as self-regulation strategies for writing. The authors use the PRISM-✓ strategy for problem solving that focuses on the connections between mathematics and writing. The results show that students who participated in the intervention improved the length and quality of their written expressions for their mathematical reasoning and demonstrated independent use of the strategies.

13. Powell, S. R., Berry, K. A., & Tran, L. M. (2020). Performance differences on a measure of mathematics vocabulary for English learners and non-English learners with and without mathematics difficulty. *Reading & Writing Quarterly*, 36(2), 124-141.

This study examined mathematical vocabulary knowledge in students with mathematical difficulty who were either English learners, or non-English learners. Results are consistent with the interpretation that both English learners and students with mathematical difficulties have limited mathematics vocabulary knowledge and thus require focussed teaching of the language of mathematics.

14. Hebert, M. A., Powell, S. R., Bohaty, J., & Roehling, J. (2019). Piloting a mathematics-writing intervention with late Elementary students at-risk for learning difficulties. *Learning Disabilities Research & Practice*, 34(3), 144-157.

This paper describes a pilot study for a mathematics writing intervention conducted with fourth and fifth year students at risk of learning difficulties. In this randomised controlled trial, students were either assigned to a mathematics writing condition or an informational text writing condition. The results show that students in the mathematics writing group outperformed the comparison group in the mathematics writing total score and writing organization, but not in the mathematics content. Moreover, it also showed significant improvements on the percentage of mathematics writing sequences.

15. Harper, H. & Parkin, B. (2018) Parkin, B., & Harper, H. (2018). *Teaching with intent: Scaffolding academic language with marginalised students*. Newtown: PETAA.

Harper and Parkin describe frameworks and actual sessions of teaching mathematical language to students from marginalised backgrounds.

Resources for preservice teachers

Carter, M. & Quinnell, L. (2012). Jabberwocky: The complexities of mathematical English, *Australian Primary Mathematics Classroom*, Vol. 17, No. 2, 3-9.

This short and easy-to-read paper gives an overview of the complexities of mathematical literacy.

DiCerbo, P. A., Anstrom, K. A., Baker, L. L., & Rivera, C. (2014). A review of the literature on teaching academic English to English language learners. *Review of Educational Research*, 84(3), 446-482.

This review focuses on the concept of Academic English, its teaching practices and teacher preparation and training to teach Academic English. The authors suggest that the evidence reviewed

highlights that explicit teaching of the specific linguistic features and discourse structures used in each discipline are essential to be able to understand and communicate both orally and in writing.

Harper, H. & Parkin, B. (2018). Parkin, B., & Harper, H. (2018). *Teaching with intent: Scaffolding academic language with marginalised students*. Newtown: PETAA.

Harper and Parkin describe frameworks and actual sessions of teaching mathematical language to students from marginalised backgrounds.

Monroe, E. E., & Orme, M. P. (2002). Developing mathematical vocabulary. *Preventing school failure: Alternative education for children and youth*, 46(3), 139-142.

This short paper reviews different methods of effective mathematical vocabulary teaching.

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This highly influential paper describes the linguistic challenges of the “mathematical register” (first attributed to the work of Halliday). This paper gives a great overview of mathematical language and the challenges it poses for different learners.

Shanahan, C., Shanahan, T., & Misischia, C. (2011). Analysis of expert readers in three disciplines. *Journal of Literacy Research*, 43 (4), 393-429. doi: 10.1177/1086296X11424071

In this paper Shanahan et al. make a case that each discipline possesses specialized genre, vocabulary, traditions of communication, and standards of quality and precision, and each requires specific kinds of reading and writing to an extent greater than has been recognised by teachers or teacher preparation programs. They then argue for teaching disciplinary literacy skills as opposed to content area reading skills. They describe a study aimed at highlighting educationally relevant differences in literacy use among three subject-matter disciplines—history, chemistry, and mathematics. Table 1 in the paper provides a useful summary of the differences between the disciplines.

Teaching Toolkit, Victoria State Government

This resource, provided by the Victorian State Government, is an excellent resource for specific strategies on teaching mathematical vocabulary and problem solving.

https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/Pages/developing_mathematical_understanding.aspx#link2

Module 32: Literacy Assessment

Module 32 on Literacy Assessment will examine how to implement a cycle of ongoing assessment, planning, and instruction using the assessment tools from previous modules together with some additional tools designed specifically for progress monitoring. Preservice teachers will learn about screening for literary needs and progress monitoring for all students. The module will also introduce preservice teachers to interpreting school-based and system assessment data, such as NAPLAN, to inform pedagogy, with a special focus on catering to diverse learners.

Most of the material covered in this module is a review of earlier learned content. The focus is on putting the separate assessments together into a coherent assessment plan.

Module (year; prerequisite)	Content	Tutorials	Learning Outcomes	Evidence and Resources (weight)
32.Literacy Assessment (2-4; M3-M23)	<ul style="list-style-type: none"> What is NAPLAN good for?^{1,2,3} Screening and progress monitoring early reading development^{4,5,6,7,8,9} Monitoring comprehension development^{10,11,12,13} Monitoring spelling development^{14,15,16} Monitoring writing development¹⁷ Monitoring development of English language proficiency and how it affects literacy performance¹⁸ 	<p>Workshop on:</p> <ul style="list-style-type: none"> reviewing DIBELS and MOTIF:⁴ <ul style="list-style-type: none"> fluency assessments accuracy assessments. examining phonics screeners such as the UK Phonics Screening Check practising making and using CBM Mazes¹³ for different instructional content reviewing spelling assessments^{14,15,16} designing a classroom teacher's assessment plan for one year. 	<p>After completing this module, preservice teachers can:</p> <ol style="list-style-type: none"> use DIBELS and MOTIF confidently make CBM Mazes for different content areas design an assessment plan that a classroom teacher can use. 	<p>Weight = 1-2</p> <p>Flexible module; can be part of assessment course</p> <p><u>Resources:</u></p> <ol style="list-style-type: none"> Hempenstall, 2013 Wigglesworth et al., 2011 Perso, 2009 DIBELS & MOTIF Piasta, 2014 Ritchley & Speece, 2006 Jenkins et al., 2009 Ardoin & Christ, 2008 January et al., 2016 Keenan et al., 2008 Colenbrander et al., 2016 Muijselaar et al., 2017 https://www.interventioncentral.org/teacher-resources/test-of-reading-comprehension Kohnen et al., 2009 Kohnen et al., 2015 Daffern & Ramful, 2020 Graham et al., 2015 Various resources from State Education Departments

Evidence and Resources

Resources for ITE providers and preservice teachers

The first three papers focus on NAPLAN and how to interpret data it produces.

1. Hempenstall, K. (2013). What is the place for national assessment in the prevention and resolution of reading difficulties? *Australian Journal of Learning Difficulties*, 18 (2), 105-121

Controversy has surrounded the annual National Assessment Program-Literacy and Numeracy (NAPLAN) since its introduction in 2008. This initiative was designed to provide nationally consistent information on student progress in basic skills in Years 3, 5, and 7, replacing the various state-based tests that preceded it. A great deal of criticism has been generated, particularly by teacher organisations and education faculties, and published prominently in the media. Parents have been understandably concerned when they hear their children's teachers calling for the end to NAPLAN. This paper takes the position that, despite its current shortcomings, a national assessment program is an essential pre-requisite to the progress of education in Australia.

2. Wigglesworth, G., Simpson, J. & Loakes, D. (2011). NAPLAN language assessments for Indigenous children in remote communities: Issues and problems. *Australian Review of Applied Linguistics*, 34 (3), 320-343.

The National Assessment Program - Literacy and Numeracy (NAPLAN) assessments are designed to assess literacy and numeracy of all Australian school children in Years 3, 5, 7 and 9, and to act as diagnostics as to whether children are meeting intended educational outcomes. Tests began in May 2008 and have been run annually since then. Results of the 2008 tests indicated that Indigenous children in remote communities had the lowest test scores, and results were used to make a policy decision that effectively scrapped bilingual education in the Northern Territory. This paper evaluates the literacy component of the NAPLAN test for Year 3, and the language samples for each year level. Literacy components assess reading, writing and language conventions (grammar, spelling, and punctuation), and the article focuses on the reading and language conventions components. The authors argue that the NAPLAN tests need to be very carefully monitored for appropriateness for the assessment of children living in remote Indigenous communities because tests are standardised on groups of English language speaking children. The content of some sample tests relies on cultural knowledge which Indigenous children and EAL children cannot be expected to have. Spelling tests need to be monitored to ensure that they are testing spelling rather than grammatical knowledge. It is argued that it is difficult to create language convention tests which are truly diagnostic because of the mixed test population of native English speakers and EAL/D learners and learners in remote Indigenous communities.

3. Perso, T. (2009). Cracking the NAPLAN code: Numeracy and literacy demands. *Australian Primary Mathematics Classroom*, 14 (3) online.

In May 2008, the first National Assessment Program for Literacy and Numeracy (NAPLAN) test was administered across Australia to determine the standard of literacy and numeracy achievement of Australia's students in Years 3, 5, 7 and 9. One particular concern that has been raised in relation to the items on the tests relates to the literacy demands inherent in understanding the requirements of the tasks. This article looks at the literacy demands of the numeracy tests and draws attention to the importance of explicit teaching of the literacy skills that allow students to access what is being assessed in the questions.

4. As part of the assessment instruction, preservice teachers will be introduced to DIBELS (<https://dibels.uoregon.edu>) and MOTIF (<https://www.motif.org.au>). As both DIBELS and MOTIF include a selection of freely available assessment materials that teachers can use, preservice teachers will examine these for coverage of different aspects of reading development.

The next five items introduce some of the research behind tools in DIBELS and MOTIF and how they can be used productively to monitor progress.

5. Piasta, S. B. (2014). Moving to assessment-guided differentiated instruction to support young children's alphabet knowledge. *The Reading Teacher*, 68 (3), 202–211. doi: 10.1002/trtr.1316

Piasta's purpose with this article is to encourage early childhood educators to move beyond whole-class instructional approaches and instead provide alphabet instruction that is aligned with current emphases on assessment-driven decision making. First, she briefly reviews the importance of alphabet knowledge with respect to theory, research, and the current educational context. Next, she presents research evidence suggesting that children's alphabet knowledge development is affected not only by differences among children but also by inter-letter differences that make some letters easier or more difficult to learn. Finally, she presents a framework in which assessment guides differentiated alphabet instruction and empirically-validated practices to support such instruction.

6. Ritchley, K. D. & Speece, D. L. (2006). From letter names to word reading: The nascent role of sublexical fluency. *Contemporary Educational Psychology* 31 (3), 301-327. : 10.1016/j.cedpsych.2005.10.001.

This paper is provided here as early evidence of the importance of sublexical fluency skills at the beginning of reading instruction.

7. Jenkins, J. R., Graff, J.J., & Miglioretti, D. L. (2009). Estimating reading growth using intermittent CBM progress monitoring. *Exceptional Children* 75 (2), 151-163.

This study addressed three basic questions involving the amount of measurement needed to obtain valid estimates of reading growth. Participants were 41 students with learning disabilities from Years 3 to 8, monitored across ten weeks using curriculum-based measurement (CBM) of words read correctly (WRC). The authors compared growth slopes based on measurements taken weekly, every two weeks, every three weeks, and every four weeks to an estimate of "true slope." Results showed that frequency of progress monitoring could be significantly reduced without detracting from the validity of growth estimates. However, validity was negatively affected by minimizing the number of WRC scores collected at each measurement occasion and by employing only one rather than four scores to estimate baseline.

8. Ardoin, S. P. & Christ, T. J. (2008). Evaluating curriculum-based measurement slope estimates using data from triannual universal screenings. *School Psychology Review*, 37 (1), 109-125.

Schools are increasingly using curriculum-based measurement reading procedures to conduct universal screenings as a means of identifying students whose level and rate of growth are discrepant from peers. Despite abundant evidence supporting the reliability and validity of curriculum-based measurement-reading procedures, researchers have not fully evaluated the adequacy of universal screening procedures for curriculum-based measurement of reading. This study begins to address unanswered questions regarding how best to conduct and use universal screening data. Screenings were conducted with 86 second-grade students in the fall, winter, and spring of an academic year, using passages from the Dynamic Indicators of Basic Early Literacy Skills. Estimates of students' level and rate of growth were calculated using (a) a single probe across universal screenings, (b) students' median scores across universal screenings using the same passage set, and (c) students' median scores across universal screenings using a different passage set for each screening. Significant differences in estimates of student growth were found both as a function of the probe set(s) used and the semester for which estimates were calculated (fall to winter vs. winter to spring). Based upon differences in estimates of students' growth, as well as greater agreement in dual-discrepancy analyses, it is recommended that the same probe set be administered across universal screenings and that semester as opposed to annual rates of growth be used for evaluation purposes.

9. January, S. A., Ardoin, S. P., Christ, T. J., Eckert, T. L. & White, M-J (2016). Evaluating the interpretations and use of curriculum-based measurement in reading and word lists for universal screening in first and second grade. *School Psychology Review*, 45 (3), 310 –326.

Universal screening in elementary schools often includes administering curriculum-based measurement in reading (CBM-R); but in Year 1, nonsense word fluency (NWF) and, to a lesser extent, word identification fluency (WIF) are used because of concerns that CBM-R is too difficult for emerging readers. This study used Kane's argument-based approach to validation as a framework to evaluate the interpretations and use of scores resulting from screening 257 first and second-grade students. First, scores from three word lists (decodable WIF, high-frequency WIF, and whole-word NWF) were examined as indicators of reading achievement. Then, the use of these word list scores was evaluated regarding their ability to classify at-risk readers accurately and as supplements to CBM-R during the winter universal screening period. Participants were also concurrently administered a norm-referenced measure of early reading skills and global reading achievement. Results suggested that the word lists were good indicators of reading achievement and provided support for using CBM-R or a word list in conjunction with CBM-R to discriminate among at-risk readers. Findings have implications for the administration of universal screeners in first and second grade.

The next three papers focus on reading comprehension and the difficulties of assessing it reliably with one tool.

10. Keenan, J. M., Betjemann, R. S., & Olson, R. K. (2008). Reading comprehension tests vary in the skills they assess: Differential dependence on decoding and oral comprehension. *Scientific Studies of Reading*, 12, 281-300. doi: 10.1080/10888430802132279.

In this paper, the authors administer a number of standardised reading comprehension tests to a large sample of children. They find that the tests vary in whether they rely to a greater extent on decoding skills or listening comprehension skills, and the tests only correlated with each other to a moderate degree. They discuss how the format of a test influences the underlying skills measured. Their findings emphasise the complexity of the construct of reading comprehension and highlight the fact that reading comprehension assessment results must always be interpreted carefully with the features and characteristics of the assessment in mind.

11. Colenbrander, D. C., Nickels, L., & Kohnen, S. (2016). Similar but different: differences in comprehension diagnosis on the Neale Analysis of Reading Ability and the York Assessment of Reading for Comprehension. *Journal of Research in Reading*, 40, 403-419.

In this paper, the authors compare the York Assessment of Reading for Comprehension (YARC), a standardised assessment now widely used in Australia, to the Neale Analysis of Reading Ability (NARA), which was previously one of the most widely used reading comprehension assessments in Australia. They find that NARA scores are more dependent on decoding ability than YARC scores, and that tests differ quite widely in terms of whether or not children meet criteria for a diagnosis of reading comprehension difficulties. The authors discuss differences in test design which may contribute to these findings and suggest that scores on these tests should always be interpreted carefully in light of the strengths and weaknesses of the assessments.

12. Muijselaar, M. M. L., Kendeou, P., de Jong, P. F., & van den Broek, P. W. (2017). What does the CBM-Maze test measure? *Scientific Studies of Reading*, 21 (2), 120–132
<http://dx.doi.org/10.1080/10888438.2016.1263994>.

CBM-Maze test is established as a reliable and valid measure to assess reading comprehension progress. The test has a standardized cloze format where every seventh word is deleted and replaced with three multiple-choice alternatives—one correct and two incorrect words. This format is not strictly followed across different available CBM batteries but when these variations were directly compared in different experimental studies, no major differences were observed in reliability or predictive validity of the CBM-Maze test scores (for a review, see Pierce et al., 2010). This study showed that CBM-Mazes relied more on decoding skills and less on language comprehension skills than the Gates-MacGinitie reading comprehension assessment. However, the two tests were very highly correlated in Year 4 (.79). Given that CBM-Mazes took five to ten minutes to administer and Gates-MacGinitie 45 minutes, CBM-Mazes appears to provide a quick and reliable estimate of reading comprehension ability and can be used for progress monitoring with most students.

The following three papers focus on spelling assessment with freely available tools.

13. Kohnen, S., Nickels, L., & Castles, A. (2009). Assessing spelling skills and strategies: A critique of available resources. *Australian Journal of Learning Difficulties*, 14(1), 113-150.

This article provides an overview of the aspects that need to be considered when assessing children's spelling skills. Grounded in theory of the subprocesses involved in spelling, the authors critically discuss existing assessment tools and analyse what type of information can be retrieved from each tool. This resource can be used to introduce students to assessment and progress monitoring of spelling skills.

14. Kohnen, S., Colenbrander, D., Krajenbrink, T., & Nickels, L. (2015). Assessment of lexical and non-lexical spelling in students in Grades 1–7. *Australian Journal of Learning Difficulties*, 20(1), 15-38.

This study reports the development of two standardised spelling tests that can be used to assess spelling skills of Australian children in Years 1 to 7. The Diagnostic Spelling Test – nonwords (DiSTn) represents a tool to investigate children's domain of English sound-letter correspondences, while the Diagnostic Spelling Test – irregular words (DiSTi) provides information on word specific spelling knowledge. Together with the previously mentioned resources by Kohnen et al. (2009) it may serve as an example of two evidence-based spelling assessment instruments with norms for Australian primary school students.

15. Daffern, T., & Ramful, A. (2020). Measurement of spelling ability: Construction and validation of a phonological, orthographic and morphological pseudo-word instrument for students in Grades 3–6. *Reading and Writing*, 33 (3), 571-603.

This study introduces the development of the Components of Spelling Test (CoST): Pseudo-word version, a spelling test that provided information on children's reliance on phonological, orthographic, and morphological knowledge involved in spelling. This article complements the previously mentioned resource by Kohnen et al. (2015) by introducing a locally developed spelling assessment tool that also provides information on children's use of morphological knowledge.

The last paper included here notes the complexity of writing assessments and emphasises daily formative assessment and feedback.

16. Graham, S., Hebert, M., & Harris, K. R. (2015). Formative assessment and writing: A meta-analysis. *The Elementary School Journal*, 115 (4), 523-547.

Graham et al. report a meta-analysis of true and quasi-experiments conducted with students in Years 1 to 8. They found that feedback to students about writing from adults, peers, self, and computers statistically enhanced writing quality, yielding average weighted effect sizes of 0.87, 0.58, 0.62, and 0.38, respectively. They did not find support for teachers' monitoring of students' writing progress using measures such as CBM writing or implementation of the 6 + 1 Trait Writing model meaningfully enhanced students' writing. The findings from this meta-analysis provide support for the use of formative writing assessments that provide feedback directly to students as part of everyday teaching and learning.

Finally, EAL/D students require specific considerations when assessing their literacy development. Departments of Education in different States have resources available for English language learners, including language and literacy assessments

17. EAL/D resource portals:
 - a. NSW: <https://education.nsw.gov.au/teaching-and-learning/curriculum/multicultural-education/english-as-an-additional-language-or-dialect>
 - b. Victoria: <https://www.education.vic.gov.au/school/teachers/teachingresources/practice/Pages/tools.aspx>
 - c. Queensland: <https://education.qld.gov.au/students/inclusive-education/english-language-support>

- d. South Australia: <https://www.education.sa.gov.au/teaching/curriculum-and-teaching/numeracy-and-literacy/english-additional-language-or-dialect>
- e. Western Australia: <http://det.wa.edu.au/curriculum-support/eald/detcms/navigation/assessment-and-reporting/>

