

Anglophone nations experience severe orthographic disadvantage, precipitated by the complex learning and high cognitive load English orthographic complexity creates for children learning to read and write, and do literacy tasks. Nations differ in orthographic complexity (spelling regularity). This impacts ease and speed of reading and writing development, numbers and extent of risk factors, child and teacher workload, and the complexity, efficiency and effectiveness of teaching, learning, and SLP intervention for school-aged children.

Most Finnish children read and write with adult-level accuracy by mid-Grade 1 (Eklund et al., 2016), children with difficulties catch up quickly and effectively. In contrast, English-orthographic-complexity severely impedes early-literacy development, instruction and intervention (Galletly, 2023; Knight et al., 2017).

Cognitive load and cognitive-processing efficiency underlie crosslinguistic differences (Knight & Galletly, 2020). Regular orthographies exemplify simple, unimpeded, logical learning, with low cognitive load across early literacy (Cossu et al., 1993; Poskiparta et al., 1999). Anglophone difficulties build from complex learning demands and high cognitive load impacting 5-year-olds' immature cognitive-processing skills.

Importantly, orthographic disadvantage impacts vulnerable Anglophone children most severely, e.g., those with language-skills weakness, intellectual disability or strong family history of literacy difficulties.

Orthographic disadvantage is expensive, with costs currently paid in the written-communication and learning struggles of Anglophone children. Innovative solutions are needed.

Considerable research shows word-reading and spelling, and independent reading and writing develop markedly more slowly in children who learn to read and write English than in children of nations that use regular orthographies, e.g., Finland, Estonia, Taiwan, Poland, Iceland, Italy, China, Japan, Korea and Taiwan (Galletly, 2023; Knight et al., 2017; Seymour et al., 2003).

While high-achieving English readers read well, Anglophone nations have embarrassingly large numbers of weak readers (Wanzek et al., 2018). Overwhelmingly, speech-language-pathologists' caseloads are weak in language skills, word reading and spelling, or both areas.

Galletly (2023a) and Knight et al., (2017) discuss crosslinguistic research findings, e.g., of

- Far slower reading and writing development, e.g., 31% vs 90-98% word-reading accuracy at end-Grade 1 for UK vs regular-orthography children of ten European nations (Seymour et al., 2023).
- Intellectual disability having minor vs major impacts on regular-orthography vs English readers' word-reading (Cossu et al., 1993; Poskiparta et al., 1999).
- Impressive effectiveness of regular-orthography early-literacy intervention (Hanley et al., 2004; Landerl et al., 1997; Poskiparta et al., 1999), vs low effectiveness of English interventions (e.g., Torgesen et al., 1997).
- Markedly low ranges and standard deviations in regular-orthography cohorts of word-reading studies, contrasting with particularly high English ranges and standard deviations (Caravolas, 2018; Frith et al., 1998; Galletly, 2023; Hanley et al., 2004; Landerl et al., 1997), with indications regular-orthography 'weaker' readers read better than at least half of English readers.
- Healthy-progress English readers in later elementary and high school making large numbers of errors on vowels and unfamiliar words, particularly long multisyllabic words, in contrast to very few of these errors by regular-orthography children (Frith et al., 1998).

Anglophone nations may benefit from regular-orthography role models. Many European nations hold back formal instruction until age 7-8 years, when executive-function and learning skills are well-developed. Additionally, similar to Anglophone 2-Stage handwriting (children initially printing, then transitioning to cursive script), Asian nations introduced 2-Stage reading-writing development last century now initially using fully-regular beginners' orthographies, with strong advantaging experienced (Knight et al., 2017, 2019; Tseng, 2006).

Building from the research knowledge-base, Galletly, Knight and colleagues have developed multiple models, tools supporting reflection on crosslinguistic difficulties and means of achieving positive gains. Detailed in *The Research Tours: The Impacts of Orthographic Disadvantage* (Galletly, 2023?), they include *Orthographic Advantage Theory* (Knight, Galletly & Gargett, 2019), *Differential Disadvantage* (Galletly & Knight, 2011a), the *Transition from Early to Sophisticated Literacy (TESL)* model (Galletly & Knight, 2011b), the *Literacy Component Model* (Knight, Galletly & Aprile, 2021), and *The 10 Changes* (Galletly, 2022).

The available research, while powerful, can be considered useful preliminary research. Innovative research on orthographic-complexity impacts is needed. There are many worthy areas for future research, e.g., Galletly (2023a) lists 100 research questions as examples.

Galletly, Knight and colleagues have developed key models for exploring orthographic impacts. Galletly's (2023) book, *The Research Tours: The Impacts of Orthographic Disadvantage*, explores pertinent research on orthographic disadvantage and *The 10 Changes*, strategic, evidence-based changes suggested for Australia and Anglophone nations.

(References available with handout at www.susangalletly.com.au, as are the poster and video of key models.)

The High Cost of Orthographic Disadvantage

What's an orthography?
The spelling system a nation uses.

Orthographic complexity dictates how hard it is to learn to read and write. English is one of the world's hardest orthographies - it's damaging for at-risk children. Most nations use highly regular spelling - their at-risk children have strong success.

Kid in regular orthography nations take just months to read and spell well.

+ Many have adult-level accuracy from Grade 1.



Kids in Anglophone nations take ≥ 6-9 years to read and spell well.

+ Many children & adults have major difficulties.

Orthographic Impacts	Awesome Foursome Them! 😊	Awful Foursome Us! 😞
EARLY LITERACY DEVELOPMENT	<ul style="list-style-type: none"> • Easy & Rapid • Low Cognitive Load 	<ul style="list-style-type: none"> • Difficult & Slow • Massive Cognitive Load
TEACHING AND LEARNING	<ul style="list-style-type: none"> • Minimal Difficulties • Maximised Literacy 	<ul style="list-style-type: none"> • Maximised Difficulties • Impeded Literacy
SCHOOL EFFECTIVENESS	<ul style="list-style-type: none"> • Time-Rich Schools • Low Support Needs 	<ul style="list-style-type: none"> • Very Time-Poor Schools • Very High Support Needs
ACADEMIC LEARNING	<ul style="list-style-type: none"> • Empowered Subject Learning 	<ul style="list-style-type: none"> • Impeded Subject Learning

How can Australia fix this?



Do as Taiwan, Japan and China do and implement a beginners' orthography! They changed to 2-Stage early literacy in the 1940-50s with overwhelming success!



It's research time!

We need to explore English beginner orthographies, e.g. ITA and Flexispel.

For more information visit www.susangalletly.com.au

The Roles of Orthographic Impacts in Optimising Literacy Acquisition from First Steps to Full Literacy in Typical and Atypical Learners

Symposium 1, 45th IARLD Conference, Florida, Wednesday 25 Oct, 2023

Presenters Heikki Lyytinen, Chunhui Hsuan and Susan Galletly
with Discussant Annmarie Urso

At-risk children in regular-orthography nations experience far less major word-reading and spelling difficulties than similar English-reading children in Anglophone nations. What roles do orthographic impacts play in wide crosslinguistic early-literacy differences?

Australia's Susan Galletly's 2023 book, *The Research Tours: The Impacts of Orthographic Disadvantage*, explores crosslinguistic differences, Anglophone nations' difficulties optimising early-literacy development, and useful research directions into the future.

Finland's Heikki Lyytinen knows well Finland's 1-Stage Early Literacy with a highest-regularity orthography, and, through GraphoLearn research, the challenges of preventing and overcoming word-reading and spelling difficulties in children of many nations.

Taiwan's Chunhui Hsuan knows well Taiwan's 2-Stage Early Literacy, with a highest-regularity orthography used first, and the difficulties Asian nations resolved by moving to 2-Stage Early Literacy.

Discussant Annmarie Urso knows well word-reading and spelling interventions for English readers, and the extent these are effective.

What roles might orthographic differences play in research focused on overcoming early-literacy difficulties in diverse nations?

Presenter 1, Australia's Susan Galletly, will summarise research on crosslinguistic differences, and pose key questions:

Q1. What directions show strongest effectiveness for optimising word-reading and spelling in weakest English readers, e.g., the weakest 10% of achievers?

Q2. To what extent are current intervention methods for optimising word-reading and spelling in the weakest 10% of English readers able to achieve the intervention effectiveness that regular-orthography nations routinely achieve with weakest readers?

Q3. What factors impede achieving this level of effectiveness in at-risk English-readers?

Q4. Given the strong success of Taiwan, Japan and China's 2-Stage early literacy, should Anglophone nations explore 2-Stage Early Literacy (initially reading and writing an English regular orthography then transitioning to usual English)?

Q5. Given that 7 to 8 year olds have stronger executive-function and cognitive-processing skills than 4 to 5 year olds, should Anglophone nations explore starting formal reading and writing instruction at age 7.5 (mid-Grade-2), the age many European children are when learning to read far more regular orthographies, with the first 2.5 school-years focused on language and learning enrichment?

Q6. Are there ethical issues which should be considered, in at-risk children in Anglophone nations being far more likely to develop ongoing, severe word-reading and spelling difficulties?

Q7. To what extent should Anglophone children be entitled to word-reading and spelling development as easily developed as is routinely achieved across Taiwan, Japan and China, nations using 2-Stage Early Literacy?

Presenter 2, Finland's Heikki Lyytinen, building from the *Jyväskylä Longitudinal Study of Dyslexia (JLD)*, is researching *GraphoLearn* intensive computer-game intervention that uses ongoing dynamic assessment to tailor instruction, in many nations, with over 2-million children now using *GraphoGame*.

GraphoGame builds *Basic Literacy* skills, of accuracy then fluency with letter sounds, word-reading and spelling. *ComprehensionGame* supports development of *Full Literacy*, building reading comprehension and analytical reasoning.

While regular-orthographies use a single orthographic-grainsize (phonemes), English uses multiple grainsizes, thus English GraphoGame has two forms: *GraphoGame Phoneme* and *GraphoGame Rime*.

Further, for regular-orthography children, learning to read and write (*Basic Literacy*) and reading and writing to learn (*Full Literacy*) can often be largely sequential, given most children have proficiently-accurate word-reading and spelling early in Grade-1.

That's far less the case for English readers, given that word-reading and spelling take many years to develop.

Q8. To what extent will progress made by English readers using GraphoLearn technology differ from that of regular-orthography readers?

Q9. What factors underlie these differences in progress?

Q10. Will GraphoLearn intervention be as successful with English readers as with regular-orthography readers?

Q11. Will it be more effective than other Anglophone interventions?

Q12. What differences in findings would Anglophone nations find in replicating the JLD's longitudinal study of children's development and its strategic assessments?

Q13. Whereas the JLD showed intervention at the time of letter knowledge and phonemic recoding to be the intervention point for children in nations with highly regular orthographies, might different points of intervention be relevant for Anglophone nations using English with its particularly high orthographic orthography?

Presenter 3, Taiwan's Chunghui Hsuan, will discuss Taiwanese education's 2-Stage Early Literacy, with children first reading and writing fully-regular ZhuYin FuHao (Tzuyin), which expedites word-reading, spelling, literacy, self-teaching and cognitive-processing; reduces likelihood of difficulties; plus supports transitioning to highly-complex morphologographic Hanzi.

Chunghui's work researching early literacy development in Taiwan provides useful insights on regular-orthography and complex-orthography education relevant to Anglophone nations and future research focused on optimising early-literacy development of at-risk children in all nations.

Q14. In nations with highly complex orthographies, to what extent does use of 2-Stage early literacy, and children learning to read and write a highly regular beginners' orthography, expedite transitioning and mastery of the nation's complex orthography, reduce activation of risk factors, and expedite successful word-reading and reading comprehension in at-risk children?

Q15. To what extent might Taiwan be a valuable role model for Anglophone nations exploring 2-Stage early-literacy development and use of a fully-regular beginners' orthography, prior to learning to read and write a complex orthography?

Discussant, USA's Annmarie Urso, is principal investigator for New York State Education Department's *Scaffolding for Students with Disabilities* project, with research interests including the development of effective reading interventions for students with dyslexia who have failed to respond to intervention, the role of processing speed and other cognitive correlates in poor readers, and the role of cognitive profiles in Response to Intervention models, with strong involvement in school-level instruction.

Q16. How best might Anglophone nations achieve instruction and interventions as effective as those of regular-orthography nations?

With the presenters' and discussant's interesting contrast in backgrounds and perspectives, this symposium will promote useful discussion and reflection.

Needs for strategic research and exploration by Anglophone nations to reduce current negative impacts of severe orthographic disadvantage

Dr Susan Galletly

Pre-Conference Seminars prior to
45th Annual IARLD Conference
Gainesville, Florida
Tuesday 24 October, 2023

1

It's a regular-orthography world.

Most nations use regular orthographies. English spelling is so complex that researchers consider it an outlier on the continuum of orthographic complexity.

	No of letters	No of sounds	No of Spelling Patterns (GPCs)
English	26	44	>>560 - >1100
Finnish	23	23	23
Italian	22	25	33
Korean	24	24	~24
Welsh	29	29	~29

2

Anglophone nations are struggling with too-slow and too-difficult early-literacy development.

Research shows

1. Word-reading and spelling development are excessively drawn out.
2. Too many children and adults have word-reading & spelling weakness.
3. Difficulties far more severe than those of regular-orthography children.
4. Orthographic impacts are far more major than other factors.
5. Executive-function skills, impeded statistical learning, and Acquired Helplessness seem pivotal underlying factors.
6. Potentially powerful directions include
 1. 2-Stage Early Literacy (a beginners' orthography then Standard English).
 2. Starting instruction when children are older (7.5yrs not 4-5yrs) with better-developed cognitive-processing skills.
7. Research is needed exploring these areas.

3

We Need Research on 10 Changes areas, e.g.

***Change 1.** Understand how orthographies matter: English spelling is dragging us down.*


***Change 3.** Weigh workload: Our children and teachers are working far too hard.*

***Change 7.** Insist on easier early-literacy development: Reach regular-orthography nations' achievement levels.*

***Change 8.** Investigate the potential of fully-regular beginners' orthographies: Research shows they're key.*

***Change 9.** First, play to learn: Start Standard English word-reading instruction from mid-Year 2.*

***Change 10.** Build needed research knowledge as quickly as possible: Use collaborative school-based research.*



4

We need to be discussing orthographies. Their impacts on education are often overlooked. While many nations use highly transparent orthographies, English is highly complex. Orthographic impacts and crosslinguistic differences are major, with widespread ramifications.

Prof Heikki Lyytinen
UNESCO Chair: Inclusive Literacy
Learning for All, 2015-2023

5

English word-reading development is excessively slow, with major child, teacher & school workload impacts

	Regular-Orthography Cohorts	Standard English Cohorts
1 Word-Reading in 14 European Nations - Tour 1	Children in 10 nations: 90-98% accuracy at End-Grade-1 (and probably much earlier)	UK cohorts: Only 31% accuracy End-Grade-1 Only 69% accuracy End-Grade-2

Word-Reading in 14 European Nations (Seymour et al., 2003)

6

While Age Might Seem A Key Factor ...

(Seymour, Aro, & Erskine, 2003, discussed in Galletly, 2023, Tour 1; Knight & Galletly, 2017, Knight, Galletly & Gargett, 2017).

Note re References:

A reference list is provided in both the handout and pdf of slides on my website, www.susangalletly.com.au.

All studies and figures discussed are explored in Galletly (2023) *The Research Tours: The Impacts of Orthographic Disadvantage*.

Nation	Orthographic Regularity	Word-Reading Results			Age Levels	
		All Words	Frequent Real Words	Unfamiliar Words	Age	Age-Gap UK Yr1
Finland	Extremely Regular	96.7%	98.2%	95.0%	7.9	2.3
Greece		94.8%	97.6%	92.1%	6.8	1.2
Italy		92.4%	95.3%	89.4%	6.9	1.3
Spain		91.8%	94.7%	88.8%	6.8	1.2
Austria		94.7%	97.8%	93.3%	7.6	2.0
Germany		96.0%	97.7%	94.4%	7.4	1.8
Norway		91.3%	91.8%	90.8%	7.9	2.3
Ireland		90.3%	94.1%	86.2%	6.9	1.3
Portugal		73.2%	73.8%	76.9%	7.0	1.4
Sweden		91.4%	95.1%	87.7%	7.5	1.9
Netherlands	88.8%	95.4%	82.2%	7.0	1.4	
Denmark Yr1	Highly Regular	82.4%	71.7%	33.7%	7.5	2.1
Denmark Yr2		86.9%	92.6%	81.3%	8.6	3.0
France Yr1	Moderately Regular	82.0%	79.1%	84.9%	6.7	1.1
France Yr2		98.3%	99.2%	97.4%	7.9	2.3
UK Yr1	Highly Complex	81.6%	93.9%	29.3%	9.6	...
UK Yr2		79.0%	76.4%	63.3%	6.6	...

7

Orthographic Complexity Has Vastly Stronger Impacts!

- Spencer and Hanley's longitudinal studies controlled for age and environment:
- Differences in word-reading and phonemic awareness start early, and expand over time.
- Even becoming multilingual didn't rescue struggling English readers.
- Anglophone nations have a *long sad tail*. (Hanley et al., 2004; Spencer & Hanley 2003, 2004)

8

Phonemic awareness develops as slowly as word-reading. Reading unfamiliar words is an issue even for stronger readers.

	Regular-Orthography Cohorts	Standard English Cohorts
Welsh vs English Word-Reading Development - Tour 2	<p>Learned to read Welsh: Much stronger word-reading in Grades 1, 2 & 5. Strong phonemic awareness from Grade 1. Very few weak readers.</p>	<p>Learning to read English: At-risk readers developed severe word-reading difficulties. Phonemic awareness still weak in Grade 5. Most v. weak reading unfamiliar words</p>

(Hanley et al., 2004; Spencer & Hanley, 2003, 2004)

9

The spread of English weak readers is alarming!

(Caravolas, 2018; Frith et al., 1998, Galletly, 2023; Hanley et al., 2004, Knight & Galletly, 2006)

10

An appreciable number have extremely severe difficulties!

Age	Word-Reading			Comprehension		Spelling	
	Very common words	Unfamiliar (pseudo) words	Meaningful Texts word-reading	Text Comprehension	Spelling		
	TOWRE SWE Age	TOWRE PDE Age	Neale RA Age	Neale RC Age	SAST Age		
1 Cr	13y 2m	7y 6m	7y 3m	7y 7m	7y 10m		
2 Ub	9y 6m	6y 0m	< 6y 0m	6y 4m	< 6y 0m		
3 Dh	9y 0m	7y 6m	6y 6m	6y 11m	6y 8m		7y 2m
4 Qh	17y 0m	11y 6m	8y 9m	11y 7m	7y 5m		10y 11m
5 Ss	14y 1m	11y 0m	9y 0m	9y 6m	9y 2m		10y 0m
6 Lo	16y 6m	9y 3m	7y 10m	8y 6m	10y 11m		6y 11m
7 Mu*	6y 7m	6y 3m	6y 6m	< 6y 0m	< 6y 0m		< 6y 0m
7 Mu*	12y 10m	10y 9m	8y 0m	12y 10m	>13y 0mth		9y 6m

The children in the table are healthy intelligence. Two have IQ >130. Two are gifted athletes.

11

Anglophone nations are not showing appreciable improvement in instruction and intervention methods

Standard-English struggles have not diminished. Al Otaiba and Fuchs' 2006 comment of English readers is equally relevant today:

The gap between proficient and less proficient readers widens over the elementary years (Stanovich, 1986), and remediation of reading problems becomes increasingly difficult after third grade ... We join a growing number of researchers and educators who have expressed concern that as many as 30% of children at risk for reading difficulties ... may not benefit from generally effective early literacy interventions ... These students have been called "Treatment Resisters" or "Nonresponders" ... Our work and investigations by others ... have suggested that the percentage of nonresponders among children with learning disabilities may be as high as 50%.

12

Most Children with Intellectual Disability Are Destined to Experience Extreme Difficulties

	Regular-Orthography Cohorts	Standard English Cohorts
Italian Vs English Readers with Down Syndrome - Tour 4	High word-reading accuracy: 94% real words, 88% unfamiliar words. Mean IQ 44, Range 40-56 Difficulty finding subjects who weren't already highly accurate	One child reading well. Most at low level, and 30% of control group omitted, as unable to score on tests. Lists other studies showing similarly.

(Cossu et al., 1993; Groen et al., 2006)

13

English reading difficulties are vastly more severe

	Regular-Orthography Cohorts	Standard English Cohorts
German Vs English Weak Word-Readers - Tour 13	Highly accurate reading of both real words and unfamiliar words. Read 3-syll pseudowords (<i>quadratisch, miktanie</i>) highly accurately, better than the English cohort could read 1-syll pseudowords (<i>foo, bish</i>).	Severely weak word-reading, with many at very low levels. Major weakness on real words and pseudowords. Major weakness on vowels: 16 times more vowel errors (342:20 errors).

(Landerl, Wimmer & Frith, 1997)

14

And regular-orthography instruction & intervention are vastly more effective

	Regular-Orthography Cohorts	Standard English Cohorts
Word-Reading Interventions Finnish Vs English Readers - Tour 14	Weakest word-readers catch up to adult level with relatively minimal intervention (e.g., GraphoGame): most children by/in Grade 2, those with more severe difficulties by Grade 5	Even with highly intensive, ongoing intervention, most children make gains, but not to age-level, and an appreciable number make very limited progress.

(Lyytinen, 2023, Lyytinen et al., 2021; Torgesen et al., 1997)

15

Taiwan, Japan & China use 2-Stage Early Literacy, with a regular orthography first

- Their main orthography is hugely complex, but they succeed brilliantly, by using 2-Stage early literacy.
- We do 2-Stage handwriting: first printing, then cursive.
- They do it for reading & writing! It works brilliantly:
 - Super low cognitive load for earliest reading & writing.
 - Children build strong cognitive-processing, skills and confidence, self-teaching to read & write new words.
 - They then transition very effectively to reading & writing their complex orthography.

Taiwan, Japan & China are great role models!

16

Few children have word-reading difficulties and difficulties are minor by Anglophone standards

Levels of word-reading & writing difficulties in Japanese children (Uno et al., 2009):

- **Hiragana: the beginners' orthography**
 0.2% with reading difficulties,
 1.6% with writing difficulties.
- **Kanji: the complex orthography**
 6.9% with reading difficulties,
 6% with writing difficulties.

In strong contrast, Anglophone nations have

- **One third** of children struggling, by Anglophone norms, and
- **Quite likely two thirds** struggling, by regular-orthography norms.

17

Impressed by its effectiveness in Asian nations, Anglophone nations explored 2-Stage Early Literacy extensively in 1960s *Initial Teaching Alphabet* research

	Regular-Orthography Cohorts	Standard English Cohorts
Word-Reading Development ITA vs Standard-English Cohorts - Tour 5	Reading & writing developing very quickly & easily. Transitioning done easily. Very few weak word-readers. Much lower child and teacher workload.	Far slower development. Many struggling readers, often severe difficulties. High child and teachers workload.

(Downing, 1969a, 1969b; Mazurkiewicz, 1971, 1973; Warburton & Southgate, 1969)
 There is masses of ITA Research, e.g., at eric.ed.gov.

18

There were a myriad of ITA studies, e.g., Mazurkiewicz (1971, 1973)

- Mazurkiewicz (1971, 1973) reports on the 11 year study of 14,000 Pennsylvania children, half in ITA classes, half in Standard-English classes.
- Findings highly in keeping with other ITA studies (e.g., Block & ITA Foundation, 1968; Downing, 1969a; Warburton & Southgate, 1969).
- Numbers reading above grade level: 75% (ITA) vs. 6% (Standard-English).
- Three times more Standard-English children repeating a year-level due to low achievement, twice as many receiving remedial intervention.
- Definite differences in remedial needs, with
 - ITA children needing support just with comprehension not word-reading.
 - Standard-English children needing intervention in both areas.
- Workload was reduced and teaching was empowered.

"The most dramatic flowering of all is evident in the large numbers of free, self-expressive, six-year-old writers. They write more abundantly and about many more subjects. They write alone, without help or editing."

19

Teachers in regular-orthography nations teach to highly literate learners from Gr 2

- Children are independent readers, writers & learners.
- Time saved through not supporting weak literacy skills can be used for subject area learning.
- They don't have Anglophone work pressure: our *Find the Learning Time & Find the Caring Time* challenges.
- Their orthographic advantage proliferates easily when 97-99% children are strong readers & writers.

20

Learning to Read & Write a Beginners' Orthography Builds Powerful Phonemic Awareness

Children rapidly strong phonemic awareness as they learn to read and write their beginners' orthography (Aro, 2004; Huang & Hanley,1997):

- In the 4 weeks it takes Finnish children to read (Aro, 2004).
- In the 10 weeks Taiwanese children master their beginners' orthography, prior to transitioning to their main orthography.

Just as Aro (2004) found, Huang and Hanley found very strong phonemic-awareness development in the 10-week period [of mastering their beginners' orthography, from being minimal, to now being quite proficient. This strong phonemic awareness would now support their learning of complex Hanzi.

Research Tour 1. Too Slow Word-Reading and Spelling Development

21

A Beginners' Orthography Is a Powerful Tool for Transitioning & Self-Teaching

As Huang and Hanley (1997) explain, of Taiwan,

Before they are taught any characters in school, all Taiwanese children learn Zhuyin Fuhao, an alphabetic script [of 37 symbols] ... is taught in the first 10 weeks of 1st Grade. ...

It is not permitted to teach any [Taiwanese] characters during [this time]... After 10 weeks, the children learn [Taiwanese Hanzi characters] via Zhuyin Fuhao: On the right side of the Hanzi characters in primary school textbooks [is] the word written in Zhuyin Fuhao appears. Knowing Zhuyin Fuhao thus helps children to pronounce new characters ... without assistance from the teacher.

Research Tour 1. Too Slow Word-Reading and Spelling Development Galletly (2023) The Research Tours: The Impacts of Orthographic Disadvantage

22

English Beginners' Orthographies at Age 5 prevent Acquired Helplessness

Warburton & Southgate's (1969) ITA review of 1500 UK schools found

- **Strong Success Inoculation** in beginning ITA word-readers,
- **Acquired Helplessness** of Standard-English weaker word-readers:

Even the youngest, [most delayed] child can have a go. ... Children feel on top of it instead of struggling. ... The shutters don't go down when the child meets a word he doesn't know. He'll try it. ... One doesn't now find children in the middle of infant school who have, as it were, given up. Even if a child is going slowly, he feels he is making progress.

Research Tour 5: The Power of Beginners' Orthographies Galletly (2023) The Research Tours: The Impacts of Orthographic Disadvantage

23

English Beginners' Orthographies at Age 5 prevent Acquired Helplessness

Warburton & Southgate's (1969) review of ITA in 1500 UK schools:

The majority of teachers interviewed appeared to consider the change in children's attitudes to reading to be at least as important, or even more important, than the increased progress in reading. ... Children don't get blockages as they did with traditional orthography. One doesn't now find children in the middle of infant school who have, as it were, given up. Even if a child is going slowly, he feels he is making progress.

Research Tour 5: The Power of Beginners' Orthographies Galletly (2023) The Research Tours: The Impacts of Orthographic Disadvantage

24

Pablo Freire's (1974) literacy empowerment similarly used a highly-regular orthography

Key learnings from Freire's work:

1. **Literacy is empowering, e.g., for socio-political emancipation in Brazil.**
2. **Teach word-reading strategically & explicitly, using isolated words & word parts.** Freire taught word-reading explicitly: *'Teaching men how to read and write a syllabic language like Portuguese means showing them how to grasp critically the way its words are formed, so that they themselves can carry out the creative play of combinations.'*

He used drills, using meaningful, relevant words, e.g., Favela (SLUM):
 Favela → Fa-ve-la → (3x. Fa-fe-fi-fo-fu → Va-ve-vi-vo-vu → La-le-li-lo-lu)
 → Fa-ve-la (Freire, 1974; Galletly, 2008).

25

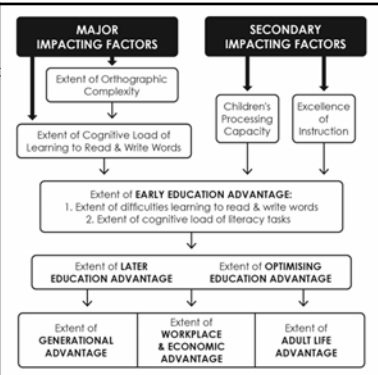
Lack of Awareness of Orthographic Impacts Has Led to Major Confusion in Literacy Instruction

- Anglophone nations' Reading Wars build from lack of awareness of orthographic impacts and our severe orthographic disadvantage.
- Whole Language inappropriately ignored orthographic impacts .
- ITA research was cupboarded and ignored when Whole Language swept through the Anglophone world.
- Had Whole Language combined with ITA (2-Stage Early Literacy), Anglophone nations would now have strong literacy and learning.
- The Sociocultural Model replaced Whole Language: Unaware of orthographic impacts, it misinterpreted Freire's work, emphasising that empowerment produces literacy (when literacy enables empowerment).

26

Regular orthographies produce Orthographic Advantage which impacts children, teachers, schools & the nation.

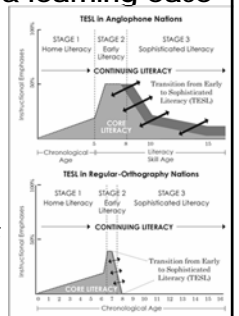
Knight, Galletly, & Gargett. (2019). **Orthographic Advantage Theory: National advantage and disadvantage due to orthographic differences.** *Asia Pacific Journal of Developmental Differences*, 6(1, January), 5-29.



27

Orthographic advantage vs disadvantage build from cognitive load, workload & learning ease

- Regular-orthography readers have low cognitive load and minimal learning, and transition easily to be confident readers, writers, self-teachers & learners.
- Anglophone children have high cognitive load across many years.
- Teachers & children have much higher workload for subject-area & literacy learning because of the extra time needed to build & support developing literacy skills: we've an enormous *Find the Learning Time Challenge*



28

Cognitive Load & Cognitive Processing Are Major Players In Learning To Read & Write

- **Cognitive load** = the amount we have to think on and process at any one time, and over time.
- **Cognitive-processing** = the skills we use in thinking about and processing information.
- **Cognitive load and cognitive processing work in tandem:**
 - Easy learning creates low demands for efficient cognitive processing.
 - Complex learning creates high demands.

29

High Cognitive Load Has Major Negative Effects

- English readers struggle to learn to read and write due to too-high
 - Too-high cognitive load across Early-Literacy development.
 - Too-high demands for effective cognitive-processing skills.
- Hayiou-Thomas et al.'s (2004) study showed that increasing cognitive load for Grade 1 & 2 UK children, who had healthy language skills, induced patterns of language disorder, i.e., patterns often present in children with Language Disorder, but not healthy-progress children.
- ALAS!!! English orthographic complexity creates particularly high cognitive load across our children's years of early-literacy development.

30

Should Anglophone nations add in a beginners' orthography? It's a key area to explore.

- We'd use Taiwan, Japan & China as role-models for 2-Stage early literacy.
- We'd choose a beginners' orthography, e.g., ITA or Fleksispel, my fully-regular English beginners' orthography is free for non-commercial use.
- There's many to choose from, plus we've already large numbers of regular orthographies used e.g., in our isolated Aboriginal communities.

41 Grapheme-Phoneme Correspondences (GPCS)

17 Vowel GPCS				22 Consonant GPCS			
ae	meɪt	ar	maɪt	b	bət	n	nət
a	mət	er	mɛt	d	dət	p	pət
ee	meɪt	or	mɔɪt	f	fət	r	rət
e	mɛt	ow	mɔʊ	g	gət	s	sət
ie	meɪt	oo	mɪʊ	h	hət	t	tət
i	mɪt	oo	mɪʊ	j	dʒət	v	vət
oe	mɔɪt	og	mɔɡ	k	kət	w	wət
o	mɔt	air	haɪr	l	lət	y	jət
ue	meɪt			m	mət	z	zət
u	mət						

Fleksispel - Stage 1

Wans upon u tiem thair wez three lital pigs hooz livd in u kotuɪ with thair moths.

Wan dae muthu pig sed tooz hez kids, "It's tiem for yooz tooz bild yoz oen hegzuz." Soz of thaz went.

Thu fozst lital pig met u farmz with a looz of struz.

"Plez ooz I hav sum ov yoz struz?" thu pig azskt pulletiez.

"Sertunlez, yooz fiem yung pig," ansuz thu farmz, hooz guez thu lital pig az much struz az woz wantuz.

31

Anglophone Nations Use 2-Stage Early Literacy for HandWriting. Let's explore it for reading & writing too

- Anglophone nations use 2-Stage early-literacy for handwriting: 1. Printing 2.Cursive.
- It's highly likely we also need it for reading and writing.
- Taiwan, Japan, China & Korea are powerful role models, for:
 1. 2-Stage early literacy: now used for >6 decades, with outstanding success.
 2. Showing the enormous power of
 - (a) lowering cognitive load, and
 - (b) reducing demands for strong cognitive-processing skills.

32

Anglophone blindspots are a major issue

THAT DOES NOT SOUND RIGHT!

I HAVEN'T COME ACROSS THAT BEFORE.


ARE YOU SURE?

Despite the evidence of many studies, most Anglophone educators and academics seem unaware of

1. How well children in regular-orthography nations read, write and learn.
2. How severely behind English readers are.
3. The strong effectiveness of regular-orthographies and 2-Stage early literacy.
4. How serious the effects of ignoring orthographies are, as regards, e.g., Reading Wars issues.

33

Bunyip in the Room



An important issue people aren't aware of, that's extremely obvious once pointed out.

Bunyip in the Classroom

Key education issues well worth considering and exploring.

Blindspots grow Bunyips!

34

Have we some blindspots?

IT SURE SEEMS SO!

IT'S AN ANGLOPHONE THING.


WE'VE LOTS OF BUNYIPS IN OUR CLASSROOMS.

EXPLORING THE RESEARCH CAN END BLINDSPOTS. ISSUES BECOME CLEAR.



35

We've Anglophone blindspots & bunyips about

1. Orthographies & their impacts.
 2. How they ease vs impede learning to read & write.
 3. The very high cognitive load our children and teachers live with.
 4. Very low vs extremely high needs for effective cognitive processing.
 5. Low vs massive child and teacher workload, in all school years.
- 

36

The facts are in: Anglophone nations mismanage English orthographic complexity badly

- The problem is not English orthographic complexity.
- It's how we manage that complexity for beginning readers.
- Children cope vastly better using two orthographies when the first is fully-regular, than they do, learning a single, highly-complex orthography.
- **2-Stage Early Literacy, with a beginners' orthography used first, are a strong solution that's well worth exploring.**
- That evidence has been there since the 1950s, e.g., the 1960's ITA research grew from awareness of the major positive effects Asian nations were achieving, by using 2-Stage early literacy.

37

We Don't Need Spelling Reform! We May Need 2-Stage Early Literacy and A Beginners' Orthography

- We'd use Taiwan, Japan & China as role-models for 2-Stage early literacy.
- e.g., *Fleksispel*: my free-to-use fully-regular English beginners' orthography.
- Very low content load & cognitive load for beginners and struggling readers.
- Available free for non-commercial use to educators & researchers.

41 Grapheme-Phoneme Correspondences (GPCS)

19 Vowel GPCS				22 Consonant GPCS					
ae	meɪt	ar	meɪt	b	hət	n	mət	sh	ʃhət
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ee	meɪt	er	meɪt	f	fət	r	rət	th	ʃhət
e	meɪt	ow	noʊ	g	gət	s	sət	ng	tʌŋ
ie	meɪt	oo	fʊt	h	hət	t	tət		
i	meɪt	oo	moo	j	ʃət	v	vət		
oe	meɪt	ox	bɒx	k	kət	w	wət		
o	mət	air	heɪr	l	lət	y	yət		
ue	meɪt			m	mət	z	zət		
u	mət								
	sh	ʃhət							

38

A summary of the points I've made

1. With 26 letters for 40+ sounds, using >>500 spelling patterns, English orthography is so complex, it's an outlier.
2. Anglophone nations need to investigate under-explored factors that impact word-reading development, including
 - a. The impacts of orthographic complexity, through high cognitive load & needs for effective cognitive processing.
 - b. Our children being very young when learning to read.

39

3. English orthographic complexity is damaging in many ways, e.g., relative to regular-orthography nations, it produces

- a. Exceedingly slow early literacy development.
- b. Too many weak readers, many with severe difficulties.
- c. Insufficiently effective early intervention and catch-up intervention.
- d. Too busy schools, through
 - i. High child & teacher workload,
 - ii. Children's many years of weak literacy skills, and
 - iii. Teachers supporting very large numbers of struggling readers.

40

4. Orthographies make a massive difference:
 - a. Regular orthographies expedite early-literacy development.
 - b. Complex orthographies impede it.
5. They do this through the trade-off of
 - a. The cognitive load of learning, against
 - b. Children's levels of cognitive-processing skills.

41

6. Most nations use regular orthographies, either
 - a. As their sole orthography (e.g., Finland), or
 - b. In 2-Stage Early Literacy, with a beginners' orthography used prior to the nations' complex orthography (e.g., Taiwan).
This gives them easy, rapid early-literacy and few difficulties.
7. English orthographic complexity causes Anglophone nations' early-literacy development to
 - a. Lag behind regular-orthography nations' to extreme level.
 - b. Have very large numbers of children struggling with word-reading and writing.

42

8. Using 2-Stage Early Literacy, with children first reading and writing a beginners' orthography, *changes the playing field* greatly:

- Easing and speeding early-literacy development, and
- Removing and reducing reading & writing difficulties.

9. Taiwan, Japan, China and Korea are role-model nations for us, having used 2-Stage Early Literacy since the 1940s and 50s, with this precipitating major educational & economic improvement.

10. It has been said:
'There are no such thing as [word-reading] difficulties. There are only teaching challenges.'
 Regular orthographies offer pivotal empowerment, expediting meeting those teaching challenges.

43

8. Using 2-Stage Early Literacy, with children first reading and writing a beginners' orthography, *changes the playing field* greatly:

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'There are no such thing as [word-reading] difficulties. There are only teaching challenges.'
 Regular orthographies offer pivotal empowerment, expediting meeting those teaching challenges.

44

My 3 wonderings down the decades...!

- What factors cause our children's and adults' reading & literacy difficulties?
- How can we reduce their' struggles and suffering?
- What are the ways we can do things better?

After all...
There are no such things as reading difficulties. There are only teaching challenges.
 Jackie French, 2015 Senior Australian of the Year

45

There's VERY good news!

Anglophone nations, e.g., Australia, US, UK
 have **exciting potential**
 for **truly major improvement**
 in **early-literacy development**
 & **education generally**
 if we explore **10 Changes issues.**

Considering the research shows we too can soar!

46

Poster for 45th IARLD Conference

Let's Optimise Early Literacy! Watch the 8 min video explanation!

Models for Exploring the Impacts of Orthographic Disadvantage Towards Optimising Literacy Development.

Visit susangalletly.com.au for Poster & Video explaining models

47

Additional Poster – The High Cost of Orthographic Disadvantage

Visit susangalletly.com.au
 To download the poster & handout, and view its video.

For more information visit susangalletly.com.au


48

It's Research Time!!!

Anglophone nations are greatly in need of major improvement.

Fortunately, working strategically, they have wonderful potential to achieve enormous improvement.

The future is bright. Let's move there!

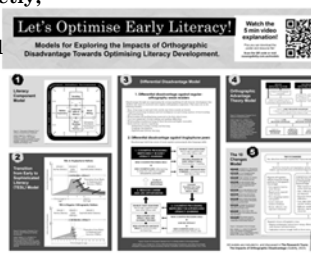


49

Our 5 Models Are Useful Tools

Models developed by Susan Galletly, Bruce Knight & colleagues:

1. The Literacy Component Model (Knight, Galletly & Aprile, 2021)
2. Transition from Early to Sophisticated Literacy (TESL) Model (Galletly & Knight, 2011a)
3. The Differential Disadvantage Model (Galletly & Knight, 2011b)
4. The Orthographic Advantage Theory Model (Knight, Galletly & Gargett, 2019)
5. The 10 Changes Model (Galletly, 2023).



50

Why are models needed? Because...

- Orthographies make a MASSIVE difference!
- English readers lag far behind children in the world's many regular-orthography nations, e.g., Finland, Estonia, Poland, Spain, Greece, Italy, Korea, Taiwan, China, Japan.
- Anglophone nations such as Australia, UK & USA need to close this gap. Currently, by international standards,
 - We don't manage orthographic complexity well enough for beginning learners.
 - Our children's greatest risk factor for vastly slow literacy development, and high likelihood of severe difficulties is being born in an Anglophone nation.

51

Each has its own research publication

Five models developed by Dr Susan Galletly with Prof Bruce Knight & colleagues:

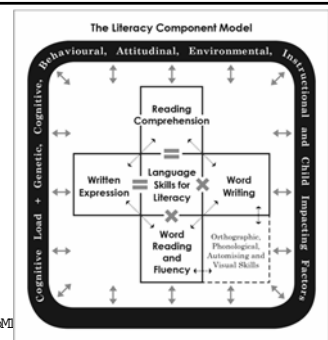
1. The Literacy Component Model (Knight, Galletly & Aprile, 2021)
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3. The Differential Disadvantage Model (Galletly & Knight, 2011b)
4. The Orthographic Advantage Theory Model (Knight, Galletly & Gargett, 2019)
5. The 10 Changes Model (Galletly, 2023).

All models are included in, and discussed in *The Research Tours: The Impacts of Orthographic Disadvantage* (Galletly, 2023)



52

1 The Literacy Component Model

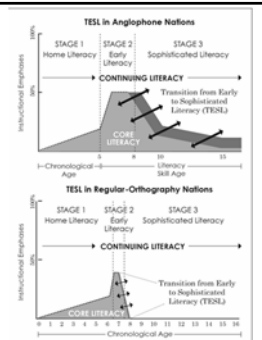


Ijxah 44/glvxwng Iq Uhhndufk Wrxu14 := Olnudf| Fip srgqwdag Txdgudaw

Duifca Nqjkw/J dahnv/) Dsuh -6354,1Wkh Olnudf| Fip srgqwdag rgho- D sudjp dnf xqjhdosdudgijp 1lqhuqdwirgqdm rllqgrndwrg/Fuhdw|w| dgs Fkdqjh/48+, 1

53

2 Transition from Early to Sophisticated Literacy Model



Ijxah 9/glvxwng Iq Uhhndufk Wrxu14= Wrr Varz Z rugUhdgkqj dgs Vshdajrj Ghxhosp hqw

Duifca -J dahnv/VID1/ Nqjkw/EID1-6344e,1 Wudqdwrg xrp Hdqj wv Vrskldwfdng Olnudf| #HVO, dvd idfwr Iq furwqdwrgdodfkhytp hqw gjiinhqfmvdswadkq HqpfawrgqdoUhhndufk/ 6; 6./65c06871

54

3 The Differential Disadvantage Model: Part 1

I ljxh 4:d/g/bfxcwhg Iq Uhnrbuk Wxau43= D P xabsh Ghilw Yv Slaxqra jfdo EctvB

Duafidw ddbw) Nqljw5344d, G lihhqldogldgydqljh ri Dgjar skqh z hdn utdghwpxh w Hqjck ruwajuskif fip sda lw dgg frjqlh surfnwj z hdnwldxwcdvbbq Mlri VshfbbHxpfawra/684./ : 50:91

1. Differential disadvantage against regular-orthography weak readers

Disadvantage through not experiencing the strong expediting of early-literacy development that children who learn to read and write regular-orthographies experience. They miss out on the following benefits:

- Ease of learning to read and write words once letter-sounds are known.
- Cognitive-processing weakness and low intelligence not preventing mastery of word-reading and word-writing.
- Word-reading and spelling being mastered in the first school years.
- Very low magnitude of word-reading and spelling difficulties.
- Word-reading remediation being of short duration and highly successful.
- *Early Literacy* mastery expediting
 - Independent reading, writing and learning.
 - Language development.
 - *Sophisticated Literacy* learning.

55

3 The Differential Disadvantage Model: Part 2

Disadvantage built from extent of weak cognitive processing & other language skills:

56

4 Orthographic Advantage Theory Model

I ljxh 49/g/bfxcwhg Iq Uhnrbuk Wxau=< Qihgrvru z ruardg Uhnrbuk

Duafidw Nqljw/J ddbw (/) J dajhw-534<1 R uwarjudskif Dgydqljh Wkhrul=Q dwtqdo dgydqljh dgg gldgydqljh gpxw ruwajuskif g lihhqfnd vid Sdfllf Mlri G hynasp hqwdG lihhqfnd/94./80<1

Dashqj rivedw=Nh| Ihdwhvri R uwarjudskif Dgydqljh Wkhrul z z z thndf | soxvfrp ttx 1

57

5 The 10 Changes Model

I ljxh 4/g/bfxcwhg Iq Pkdsvnu=Wkh43 Fkdqjhl

Brrw=J ddbw/VID 1-6356, Wkh Uhnrbuk Wxau=Wkh Ip sdwfrir uwarjudskif G ldydqljh YrdSIDxwh Uhdqj Z rrvl P dfnd /T @/Dxwcd= Olnudf | Sovl z z z lzdqjddw fip ttx

58

5 The 10 Changes Model

CHANGE 1 Understand how orthographies matter: English spelling is dragging us down.

CHANGE 2 Own our struggling reader woes: End hypocrisy and pretence.

CHANGE 3 Weigh workload: Our children and teachers are working far too hard.

CHANGE 4 One-size education does not fit all: Teach to the decidedly different instructional needs of upper-third and lower-third readers.

CHANGE 5 End our data deficiency: Build strong knowledge on word-reading levels.

CHANGE 6 Enrich every child: Ensure effective, supportive, tailored education.

CHANGE 7 Insist on easier early-literacy development: Reach regular-orthography nations' achievement levels.

CHANGE 8 Investigate the potential of fully-regular beginners' orthographies: Research shows they're key.

CHANGE 9 First, play to learn: Start Standard English word-reading instruction from mid-Year 2.

CHANGE 10 Build needed research knowledge as quickly as possible: Use collaborative school-based research.

59

Please Encourage Research on Orthographic Impacts Cognitive Processing & Crosslinguistic Differences

- *100 Research Questions* is the final chapter of *The Research Tours*, and those 100 are just examples of potential studies.
- Anglophone nations need the help of regular-orthography nations.
- Please encourage potential Masters and Doctoral studies to consider doing studies in this area.
- They are underexplored areas, with a myriad of valuable studies which can be done.

60

References:

- (All studies & figures are explored in Galletly (2023) *The Research Tours: The Impacts of Orthographic Disadvantage*)
1. Aro, M. (2004). Learning to read: The effect of orthography. Thesis: University of Jyväskylä.
 2. Aro, M. (2017a). Learning to read Finnish. In L. T. W. Verhoeven & C. A. Perfetti (Eds.), *Learning to read across languages and writing systems* (pp. 416-436). Cambridge University Press.
 3. Aro, M. (2017b). *What is special about Special Education in Finland?* Keynote presentation at the opening conference of The Center for Justice in Education, Pontifical University of Santiago de Chile, Chile, 8.11.2017.
 4. Al Otaiba, S., & Fuchs, D. (2006). Who are the young children for whom best practices in reading are ineffective?: An experimental and longitudinal study. *Journal of Learning Disabilities*, 39(5), 414-431.
 5. Caravolas, M. (2004). Spelling development in alphabetic writing systems: A cross-linguistic perspective. *European Psychologist*, 9(1), 3-14.
 6. Caravolas, M. (2018). Growth of word and pseudoword reading efficiency in alphabetic orthographies: Impact of consistency. *Journal of Learning Disabilities*, 51(5), 422-433.
 7. Compton, D. L., Miller, A. C., Elleman, A. M., & Steacy, L. M. (2014). Have we forsaken reading theory in the name of "quick fix" interventions for children with reading disability? *Scientific Studies of Reading*, 18(1), 55-73.
 8. Cossu, G., Rossini, F., & Marshall, J. C. (1993). When reading is acquired but phonemic awareness is not: A study of literacy in Down's Syndrome. *Cognition*, 46(2), 129-138.
 9. Downing, J. (1969a). *The effectiveness of i.T.A. (initial teaching alphabet) in the prevention and treatment of dyslexia and dysgraphia*. World Mental Health Assembly (Washington, D.C., Nov 17-21, 1969), eric.ed.gov.
 10. Downing, J. (1969b). Initial teaching alphabet: Results after six years. *The Elementary School Journal*, 242-249.
 11. Downing, J. (1972a). The orthography factor in literacy acquisition in different languages. *Literacy Discussion*, 3(3-4), 409-427.
 12. Downing, J. (Ed.). (1972b). *Comparative reading*. Macmillan.
 13. Frith, U., Wimmer, H., & Landerl, K. (1998). Differences in phonological recoding in German- and English-speaking children. *Scientific Studies of Reading*, 2(1), 31-54.
 14. Galletly, S. A. (2005). *The Galletly Report: Reading-accuracy development, difficulties and instruction in Australia: Report submitted to the Australian National Inquiry into the Teaching of Literacy*. www.literacyplus.com.au.
 15. Galletly, S. A. (2008). *An exploration of rapid-use reading-accuracy tests in an Australian context (Doctoral Thesis, PhD)*. Central Queensland University, www.literacyplus.com.au.
 16. Galletly, S. A. (2018). *Honing research directions into the future: Under-explored research issues & their potential for future knowledge building*. Paper presented at the Speaking Tour presentation at six Taiwan Universities, January 2018. www.literacyplus.com.au.
 17. Galletly, S. A. (2022) *Bunyips in the Classroom: The 10 Changes*. Vol. 1. *Aussie Reading Woes*. Mackay, Qld, Australia: Literacy Plus.
 18. Galletly, S. A. (2023a). *Fleksispel: A fully regular English orthography with transitioning stages for free flexible use by educators and researchers*. www.literacyplus.com.au.
 19. Galletly, S. A. (2023b) *The Research Tours: The Impacts of Orthographic Disadvantage*. Vol. 2. *Aussie Reading Woes*. Mackay, Qld, Australia: Literacy Plus.
 20. Galletly, S. A. (In press, 2024) *The 10 Changes: The Nitty Gritty*. Vol. 3. *Aussie Reading Woes*. Mackay, Qld, Australia: Literacy Plus.
 21. Galletly, S. A., & Knight, B. A. (2004). The high cost of orthographic disadvantage. *Australian Journal of Learning Disabilities*, 9(4), 4-11.
 22. Galletly, S. A., & Knight, B. A. (2006). The Dynamic Indicators of Basic Early Literacy Skills' (DIBELS) use in an Australian context. *Australian J. of Learning Disabilities*, 11(3), 147-154.
 23. Galletly, S. A., & Knight, B. A. (2011a). Differential disadvantage of Anglophone weak readers due to English orthographic complexity and cognitive processing weakness. *Australasian Journal of Special Education*, 35(1), 72-96.
 24. Galletly, S. A., & Knight, B. A. (2011b). Transition from Early to Sophisticated Literacy (TESL) as a factor in cross-national achievement differences. *Australian Educational Researcher*, 38(3), 329-354.
 25. Galletly, S. A., & Knight, B. A. (2013). Because trucks aren't bicycles: Orthographic complexity as an important variable in reading research. *Australian Educational Researcher*, 40(2), 173-194.
 26. Galletly, S. A., Knight, B. A., Dekkers, J., & Galletly, T. A. (2009). Indicators of late emerging reading-accuracy difficulties in Australian schools. *The Australian Journal of Teacher Education*, 34(5), 54-64.
 27. Groen, M. A., Laws, G., Nation, K., & Bishop, D. V. M. (2006). A case of exceptional reading accuracy in a child with Down Syndrome: Underlying skills and the relation to reading comprehension. *Cognitive Neuropsychology*, 23(8), 1190-1214.

28. Hanley, J. R., Masterson, J., Spencer, L. H., & Evans, D. (2004). How long do the advantages of learning to read a transparent orthography last? An investigation of the reading skills and reading impairment of Welsh children at 10 years of age. *Quarterly Journal of Experimental Psychology*, 57(8), 1393.
29. Hayiou-Thomas, M. E., Bishop, D. V. M., & Plunkett, K. (2004). Simulating SLI: General cognitive processing stressors can produce a specific linguistic profile. *Journal of Speech, Language, and Hearing Research*, 47(6), 1347-1456.
30. Landerl, K., Wimmer, H. C. A., & Frith, U. (1997). The impact of orthographic consistency on dyslexia: A German-English comparison. *Cognition*, 63, 315-334.
31. Knight, B. A., & Galletly, S. A. (2006). The Test of Word Reading Efficiency (TOWRE) used in an Australian context. *Australian Journal of Learning Disabilities*, 11(3), 139-146.
32. Knight, B. A., & Galletly, S. A. (2017). Effective literacy instruction for all students: A time for change. *International Journal of Innovation, Creativity and Change*, 3(1), 65-86.
33. Knight, B. A., & Galletly, S. A. (2020). Practical school-level implications of cognitive processing and cognitive load. In A. M. Columbus (Ed.), *Advances in psychology research* (Vol. 140, pp. 1-90). New York: Nova Science.
34. Knight, B. A., Galletly, S. A., & Aprile, K. T. (2021). The Literacy Component Model: A pragmatic universal paradigm. *International J. of Innovation, Creativity and Change*, 15(7).
35. Knight, B. A., Galletly, S. A., & Gargett, P. S. (2017a). Managing cognitive load as the key to literacy development: Research directions suggested by crosslinguistic research and research on Initial Teaching Alphabet (i.t.a.). In R. Nata (Ed.), *Progress in education* (Vol. 45, pp. 61-150). New York: Nova Science.
36. Knight, B. A., Galletly, S. A., & Gargett, P. S. (2017b). *Principles of reading instruction towards optimising reading instruction for at-risk readers in Prep to Year 3: Principles developed through teacher reflection on research and practice in the ARC project 'Bridging the gap for at-risk readers: Reading theory into classroom practice'*. Townsville: Qld: CQUniversity.
37. Knight, B. A., Galletly, S. A., & Gargett, P. S. (2019). Orthographic Advantage Theory: National advantage and disadvantage due to orthographic differences. *Asia Pacific Journal of Developmental Differences*, 6(1, January), 5-29. (Appendix of tables: Key features of Orthographic Advantage Theory: National advantage and disadvantage due to orthographic differences. www.literacyplus.com.au).
38. Lyytinen, H., Semrud-Clikeman, M., Li, H., Pugh, K., & Richardson, U. (2021). Supporting acquisition of spelling skills in different orthographies using an empirically validated digital learning environment. *Frontiers in Psychology*, 12, 556120, 1-11.
39. Lyytinen, H. (2023) Foreword, *The Research Tours: The Impacts of Orthographic Disadvantage*. Vol. 2. *Aussie Reading Woes*. Mackay, Qld, Australia: Literacy Plus.
40. Maier, S. F., & Seligman, M. E. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General*, 105(1), 3-46.
41. Maier, S. F., & Seligman, M. E. P. (2016). Learned Helplessness at fifty: Insights from neuroscience. *Psychological Review*, 123(4), 349-367.
42. Makita, K. (1968). The rarity of reading disability in Japanese children. *American Journal of Orthopsychiatry*, 38(4), 599-614.
43. Marinelli, C. V., Romani, C., Burani, C., & Zoccolotti, P. (2015). Spelling acquisition in English and Italian: A cross-linguistic study. *Frontiers in Psychology*, 6, 1843-1843.
44. O'Connor, R. E. (2000). Increasing the intensity of intervention in Kindergarten and First Grade. *Learning Disabilities Research & Practice*, 15(1), 43-54.
45. Papadopoulos, T. C. (2001). Phonological and cognitive correlates of word-reading acquisition under two different instructional approaches in Greek. *Journal of Education and Development*, 16(4), 549-568.
46. Poskiparta, E., Neimi, P., & Vauras, M. (1999). Who benefits from training in linguistic awareness in the first grade, and what components show training effects? *Journal of Learning Disabilities*, 32(5), 437-447.
47. Seymour, P. H. K., Aro, M., & Erskine, J. M. (2003). Foundation literacy acquisition in European orthographies. *British Journal of Psychology*, 94(2), 143-174.
48. Spencer, L. H., & Hanley, J. R. (2003). Effects of orthographic transparency on reading and phoneme awareness in children learning to read in Wales. *British J. of Psychology*, 94(1), 1-28.
49. Spencer, L. H., & Hanley, J. R. (2004). Learning a transparent orthography at five years old: reading development of children during their first year of formal reading instruction in Wales. *Journal of Research in Reading*, 27(1), 1-14.
50. Torppa, M., Georgiou, G. K., Niemi, P., Lerkkanen, M.-K., & Poikkeus, A.-M. (2016b). The precursors of double dissociation between reading and spelling in a transparent orthography. *Annals of Dyslexia*, 67(1), 42-62.
51. Uno, A., Wydell, T. N., Haruhara, N., Kaneko, M., & Shinya, N. (2009). Relationship between reading/writing skills and cognitive abilities among Japanese primary-school children: Normal readers versus poor readers (Dyslexics). *Reading and Writing*, 22(7), 755-789.