

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

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Pre-Conference Seminar prior to
45th Annual IARLD Conference
Gainesville, Florida
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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

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.

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.

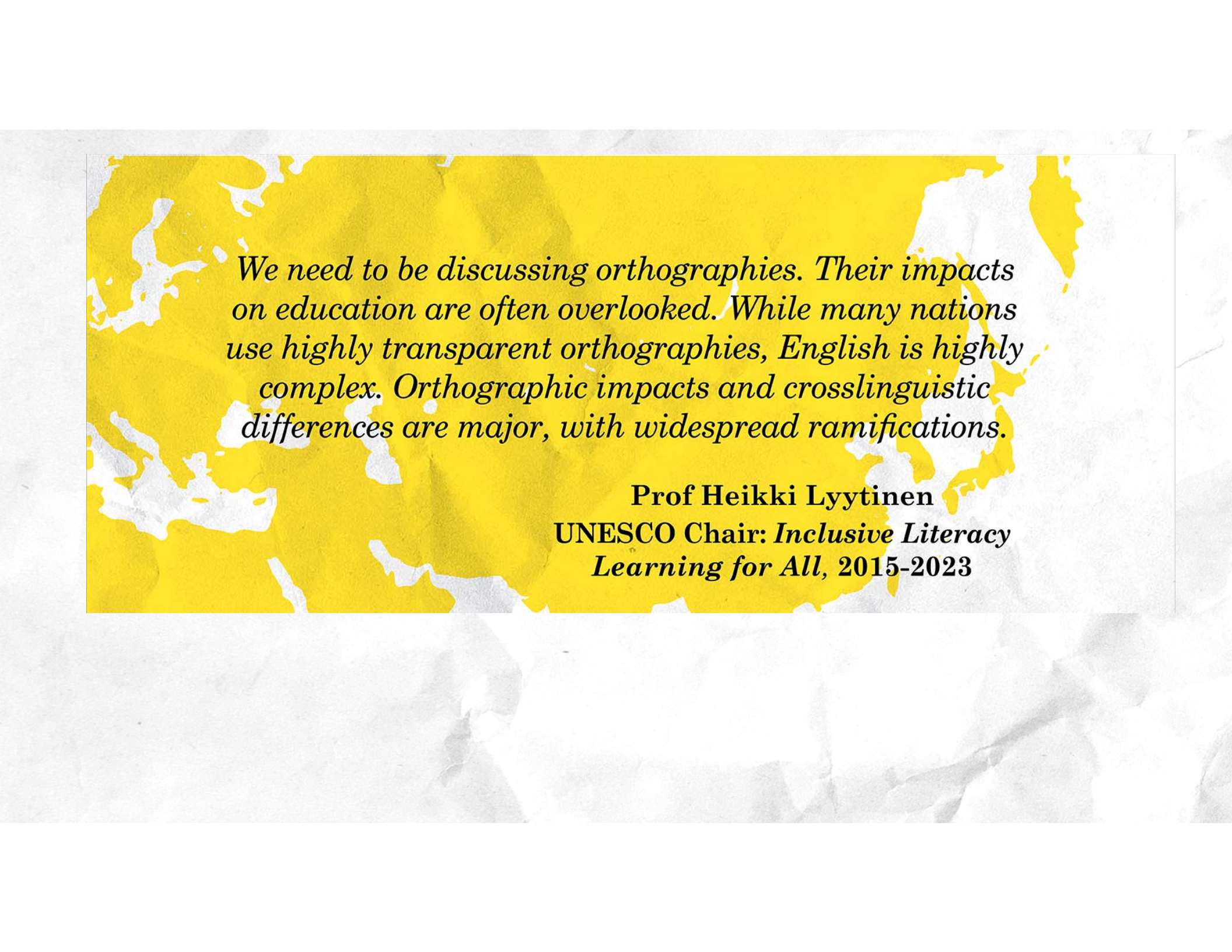
Change 8. Investigate the potential of fully-regular beginners' orthographies: Research shows they're key.

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.





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

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

1

Word-Reading in 14 European Nations

- Tour 1

Regular-Orthography Cohorts

Children in 10 nations:
90-98% accuracy
at End-Grade-1
(and probably
much earlier)

Standard English Cohorts

UK cohorts:
Only 31% accuracy
End-Grade-1
Only 69% accuracy
End-Grade-2

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

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:

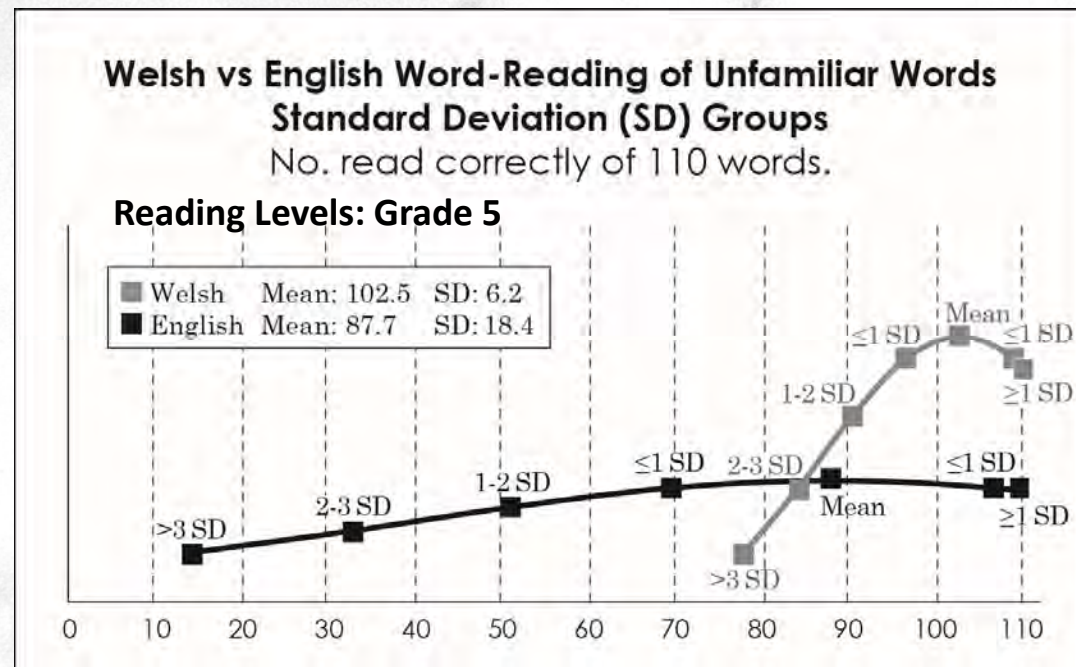
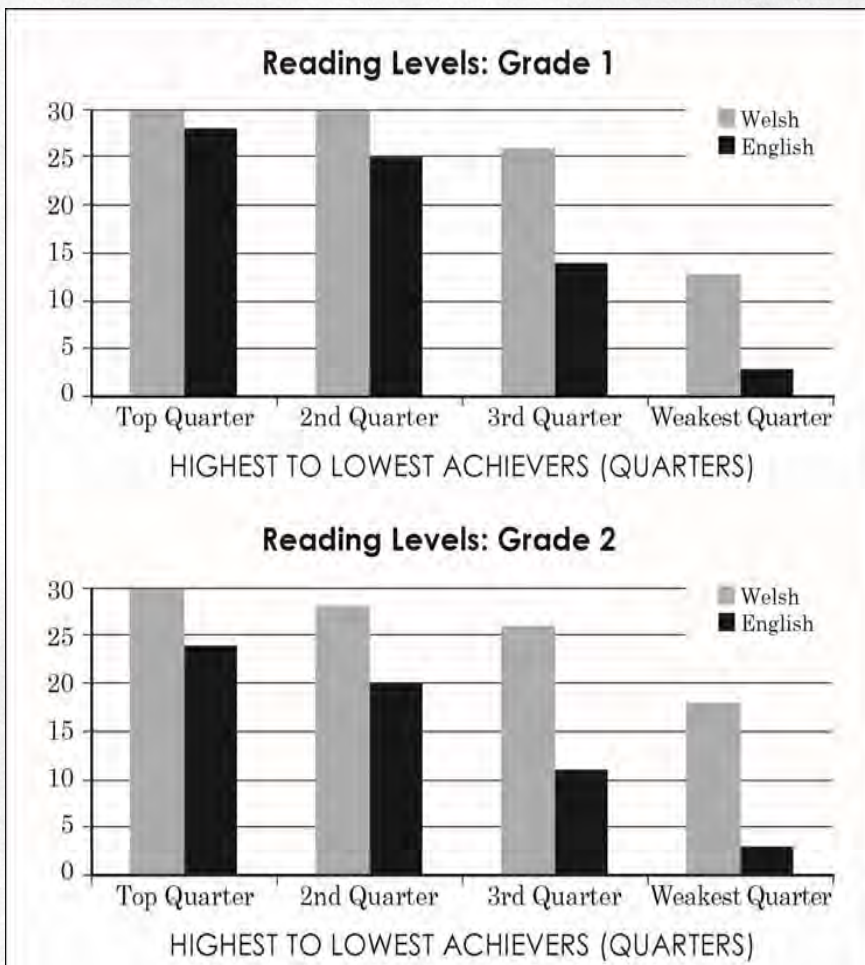
A reference list is provided in both the handout and pdf of slides on my website, www.susangalletly.com.au.

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%	98.3%	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%	97.5%	91.9%	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
Iceland		90.3%	94.1%	86.5%	6.9	1.3
Portugal		Highly Regular	75.2%	73.5%	76.9%	7.0
Sweden	91.4%		95.1%	87.7%	7.5	1.9
Netherlands	88.8%		95.4%	82.2%	7.0	1.4
Denmark Yr1	Moderately Regular	62.4%	71.1%	53.7%	7.7	2.1
Denmark Yr2		86.9%	92.6%	81.3%	8.6	3.0
France Yr1		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	31.6 %	33.9%	29.3%	5.6	--
UK Yr2		70.0%	76.4%	63.5%	6.6	--

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)

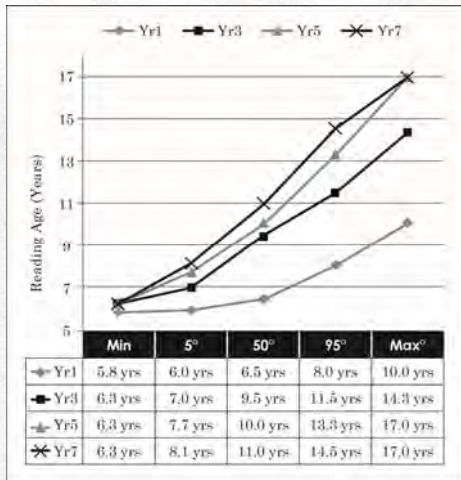
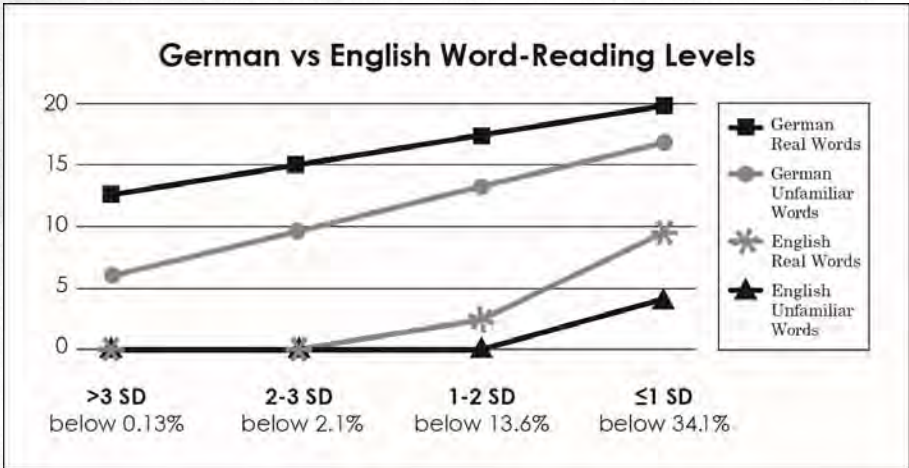
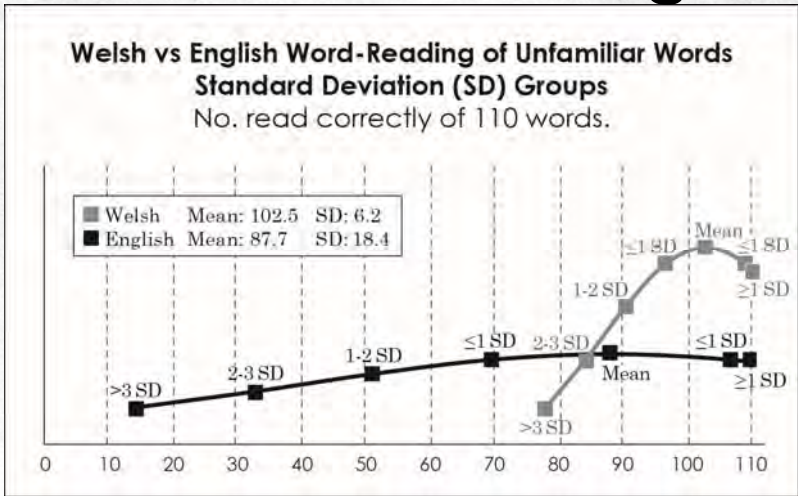


Phonemic awareness develops as slowly as word-reading.
Reading unfamiliar words is an issue even for stronger readers.

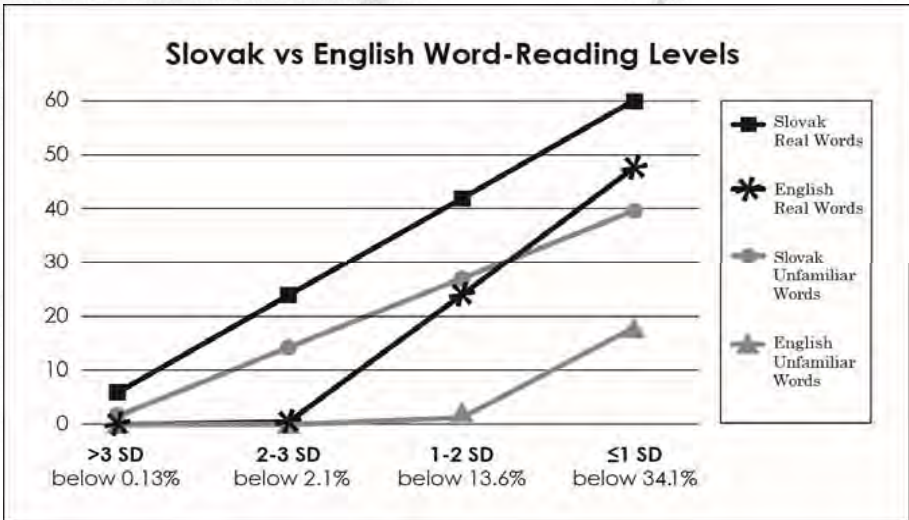
	Regular-Orthography Cohorts	Standard English Cohorts
Welsh vs English Word-Reading Development - Tour 2	<p>Learned to read Welsh: Much stronger word-reading in Grades 1, 2 & 5. Strong phonemic awareness from Grade 1. Very few weak readers.</p>	<p>Learning to read English: At-risk readers developed severe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

The spread of English weak readers is alarming!



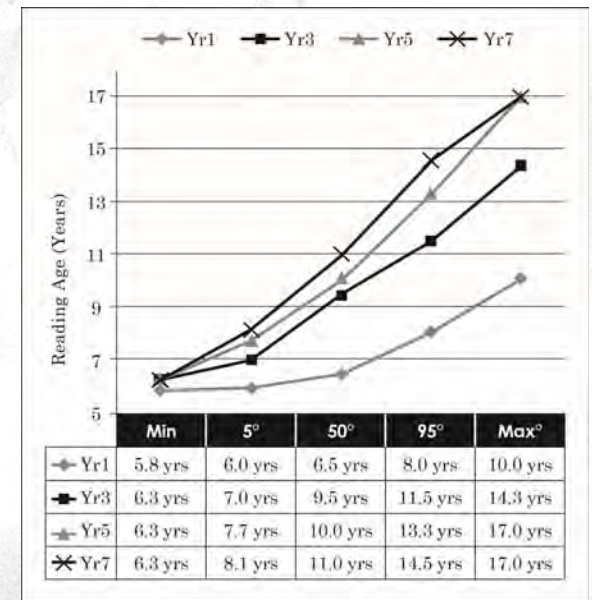
(Caravolas, 2018;
Frith et al., 1998,
Galletly, 2023;
Hanley et al., 2004,
Knight & Galletly, 2006)



An appreciable number have extremely severe difficulties!

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

	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 11m	7y 10m
2 Ub	9y 6m	6y 0m	< 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



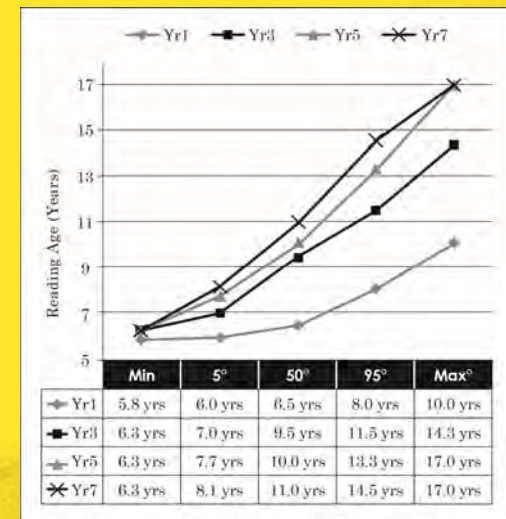
Anglophone nations are not showing appreciable improvement in instruction and intervention methods

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%.



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)

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>quaduktrisch, 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)

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)

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!

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.

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.

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.”

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.

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

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*

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

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*

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.'*

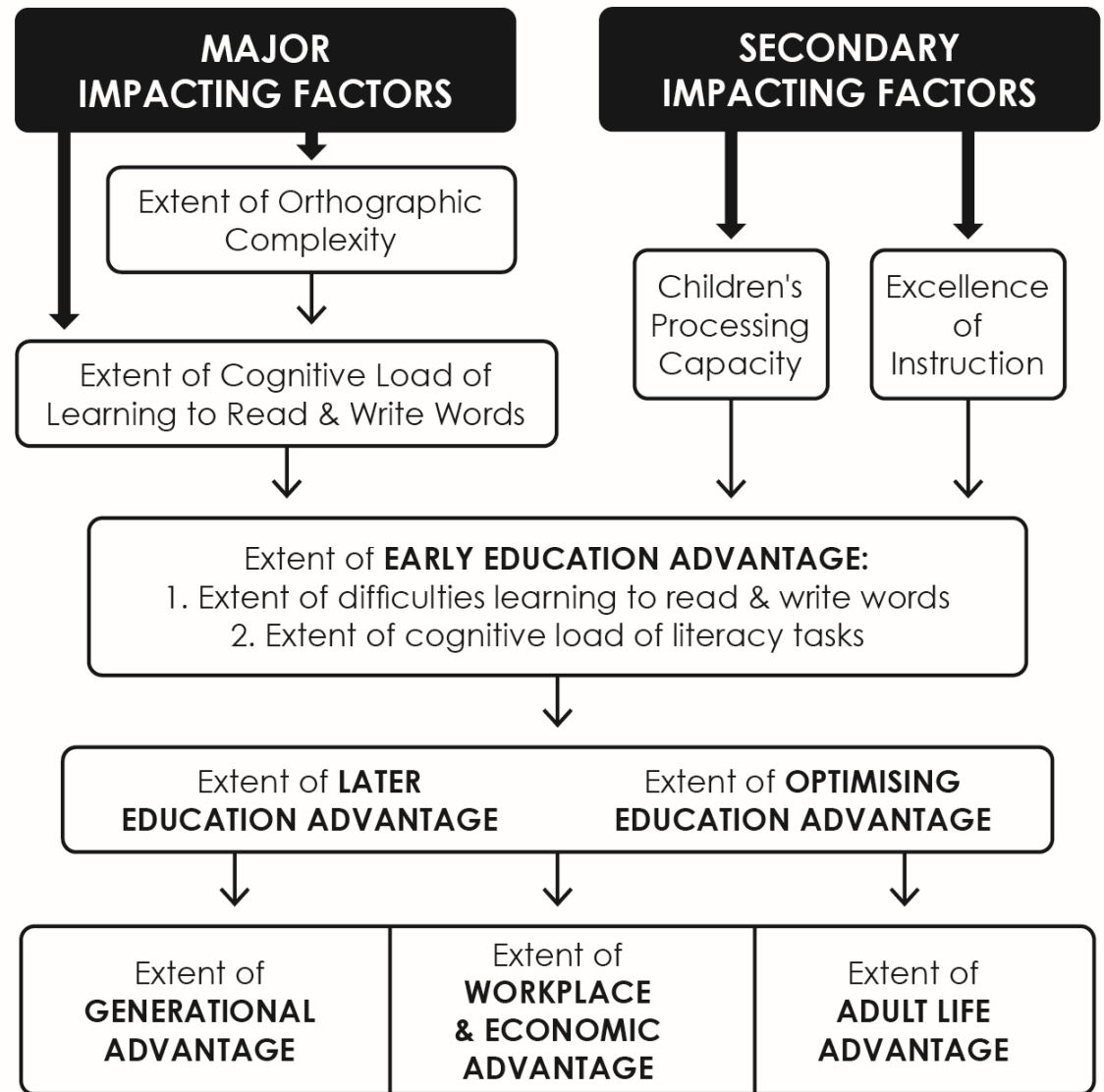
He used drills, using meaningful, relevant words, e.g., Favela (SLUM):
Favela → Fa-ve-la → (3x. Fa-fe-fi-fo-fu → Va-ve-vi-vo-vu → La-le-li-lo-lu)
→ Fa-ve-la *(Freire, 1974; Galletly, 2008).*

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).

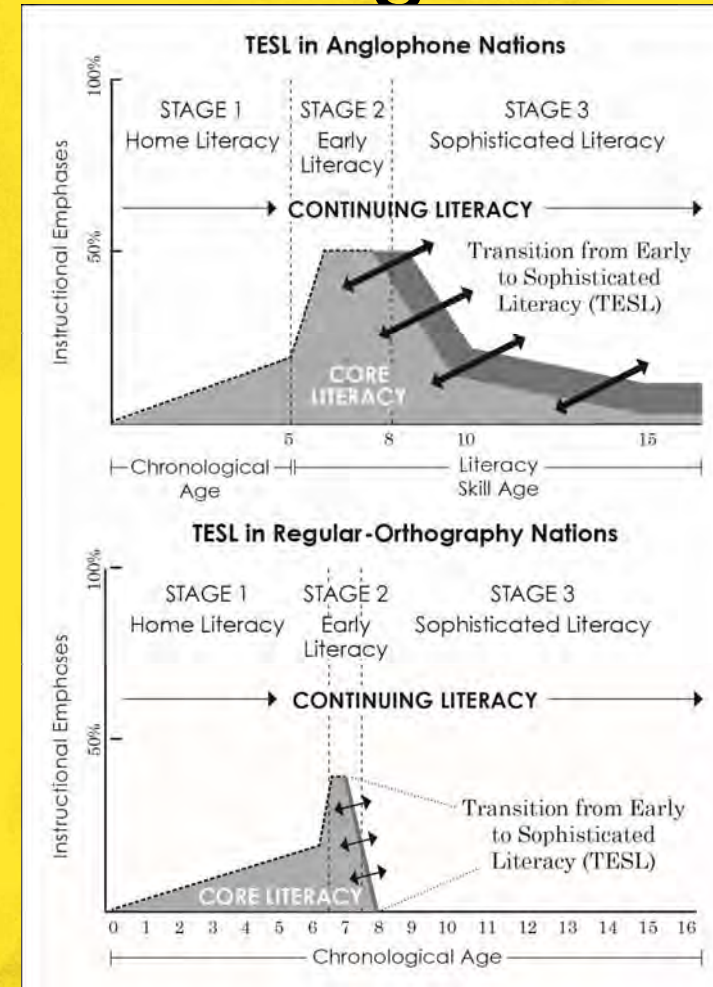
Regular orthographies produce Orthographic Advantage which impacts children, teachers, schools & the nation.

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.



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*



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.


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.


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.

Anglophone blindspots are a major issue

A speech bubble with a white background and a black outline, containing the text "THAT DOES NOT SOUND RIGHT!".

THAT DOES
NOT SOUND
RIGHT!

A speech bubble with a white background and a black outline, containing the text "I HAVEN'T COME ACROSS THAT BEFORE.".

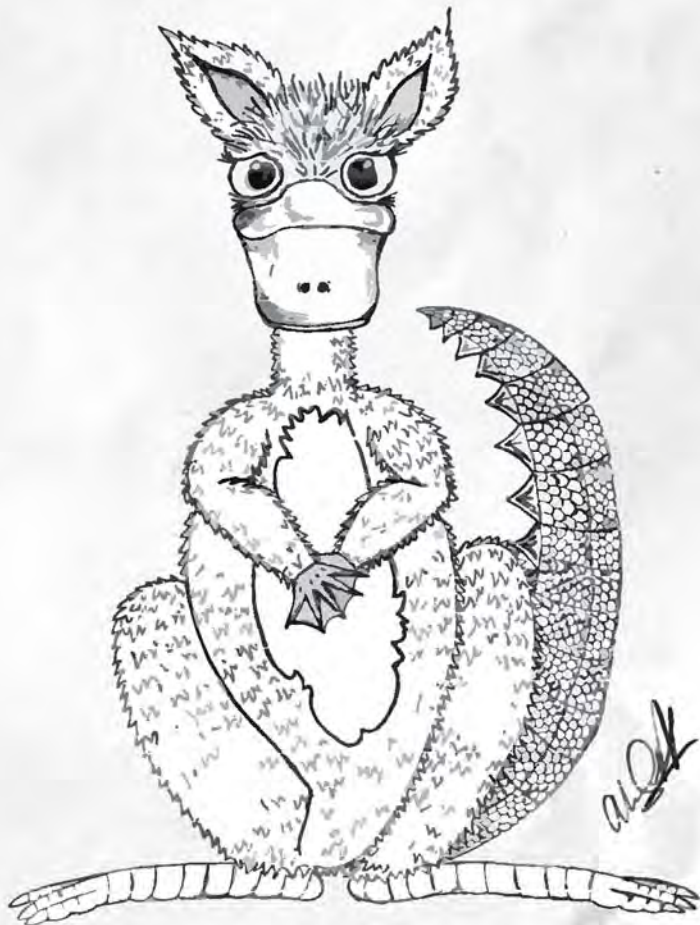
I HAVEN'T
COME ACROSS
THAT BEFORE.

A speech bubble with a white background and a black outline, containing the text "ARE YOU SURE?".

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.



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!

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.



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.



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.

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.**

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.

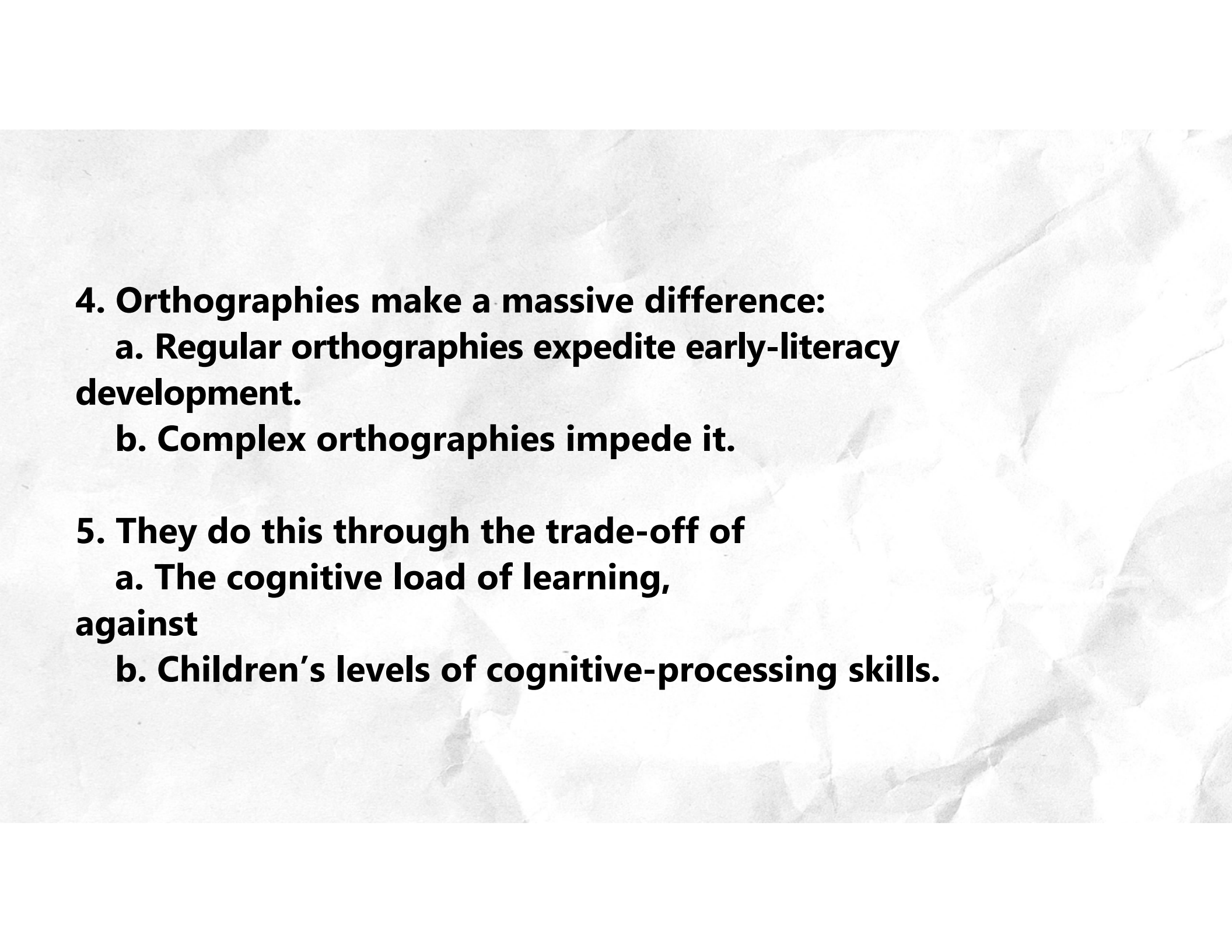
c. Insufficiently effective early intervention and catch-up intervention.

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.

- 
- 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.**

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.

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

a. Easing and speeding early-literacy development, and

b. 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.

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Regular orthographies offer pivotal empowerment, expediting meeting those teaching challenges.

My 3 wonderings down the decades...!

- 1. What factors cause our children's and adults' reading & literacy difficulties?*
- 2. How can we reduce their' struggles and suffering?*
- 3. 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

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!

Poster for 45th IARLD Conference

Let's Optimise Early Literacy!

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

Watch the 5 min video explanation!



Plus you can download the poster and resource file!
Scan the QR code or visit susangalletty.com.au/models

1 Literacy Component Model

Figure 1: Literacy Component Model (Galletty, 2023)

2 Transition from Early to Sophisticated Literacy (TESL) Model

Figure 2: Transition from Early to Sophisticated Literacy (TESL) Model (Galletty, 2023)

3 Differential Disadvantage Model

1. Differential disadvantage against regular-orthography weak readers

2. Differential disadvantage against Anglophone peers

Figure 3: Differential Disadvantage Model (Galletty, 2023)

4 Orthographic Advantage Theory Model

Figure 4: Orthographic Advantage Theory Model (Galletty, 2023)

5 The 10 Changes Model

Figure 5: The 10 Changes Model (Galletty, 2023)

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

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

Additional Poster – The High Cost of Orthographic Disadvantage

Visit susangalletly.com.au

To download the poster &
handout, and view its video.

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.

VS

Kids in Anglophone nations take $\geq 6-9$ years to read and spell well.

- + Many children & adults have major difficulties.

Orthographic Impacts	Awesome Foursome Them! 😊	Awful Foursome Us! 😞
EARLY LITERACY DEVELOPMENT	• Easy & Rapid • Low Cognitive Load	• Difficult & Slow • Massive Cognitive Load
TEACHING AND LEARNING	• Minimal Difficulties • Maximised Literacy	• Maximised Difficulties • Impeded Literacy
SCHOOL EFFECTIVENESS	• Time-Rich Schools • Low Support Needs	• Very Time-Poor Schools • Very High Support Needs
ACADEMIC LEARNING	• Empowered Subject Learning	• 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. IIA and Flexispel.

For more information visit www.susangalletly.com.au

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!**

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*).

Let's Optimise Early Literacy!

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

Watch the 5 min video explanation!

Plus you can download the poster and resource file!
Scan the QR code or visit susangalletly.com.au/models



The collage displays five posters, each representing a model developed by Susan Galletly and colleagues.
1. **Literacy Component Model**: A diagram showing the relationship between 'Orthographic Disadvantage' and 'Literacy Skills' (Reading, Writing, Spelling, Grammar, Punctuation, Vocabulary, Fluency).
2. **Transition from Early to Sophisticated Literacy (TESL) Model**: Two graphs showing 'Reading Age' vs 'Chronological Age' for 'Regular Orthography' and 'Irregular Orthography' readers.
3. **Differential Disadvantage Model**: A flowchart showing how 'Cognitive Processing Inefficiency in Early Literacy Learning' leads to 'Reduced Career and Life Opportunities' through 'Near-Country Processing Skills' and 'Near-Country Reading Skills'.
4. **Orthographic Advantage Theory Model**: A flowchart showing 'Main Orthographic Factors' and 'Secondary Orthographic Factors' leading to 'Early Literacy Advantages' and 'Orthographic Advantages'.
5. **The 10 Changes Model**: A list of 10 changes in orthographic processing, such as 'Regular orthography is easier to learn' and 'Irregular orthography is harder to learn'.

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.

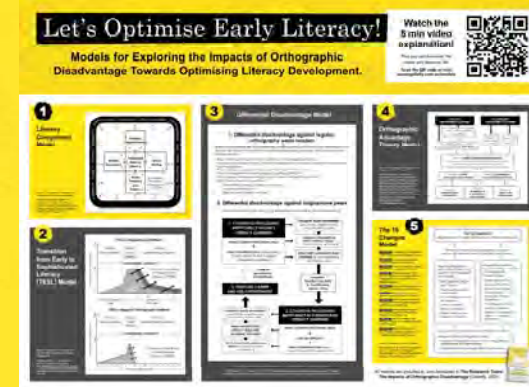
Each has its own research publication

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

1. The Literacy Component Model
(*Knight, Galletly & Aprile, 2021*)
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*).

All models are included in, and discussed in

The Research Tours: The Impacts of Orthographic Disadvantage (Galletly, 2023)

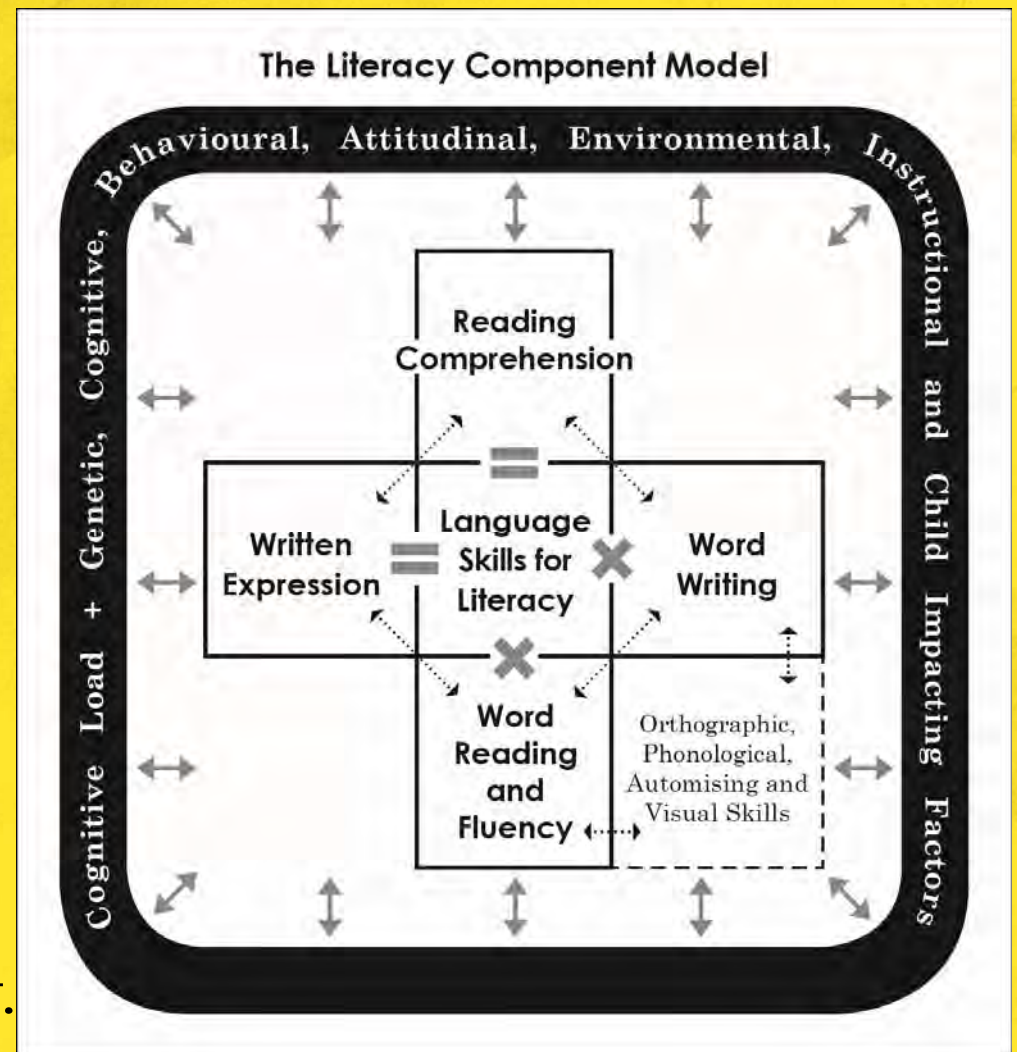


1

The Literacy Component Model

Figure 11, discussed in Research Tour 7:
Literacy Components and Quadrants

Article: Knight, Galletly, & April (2021). The
Literacy Component Model:
A pragmatic universal paradigm. *International J.
of Innovation, Creativity and Change*, 15 (7).

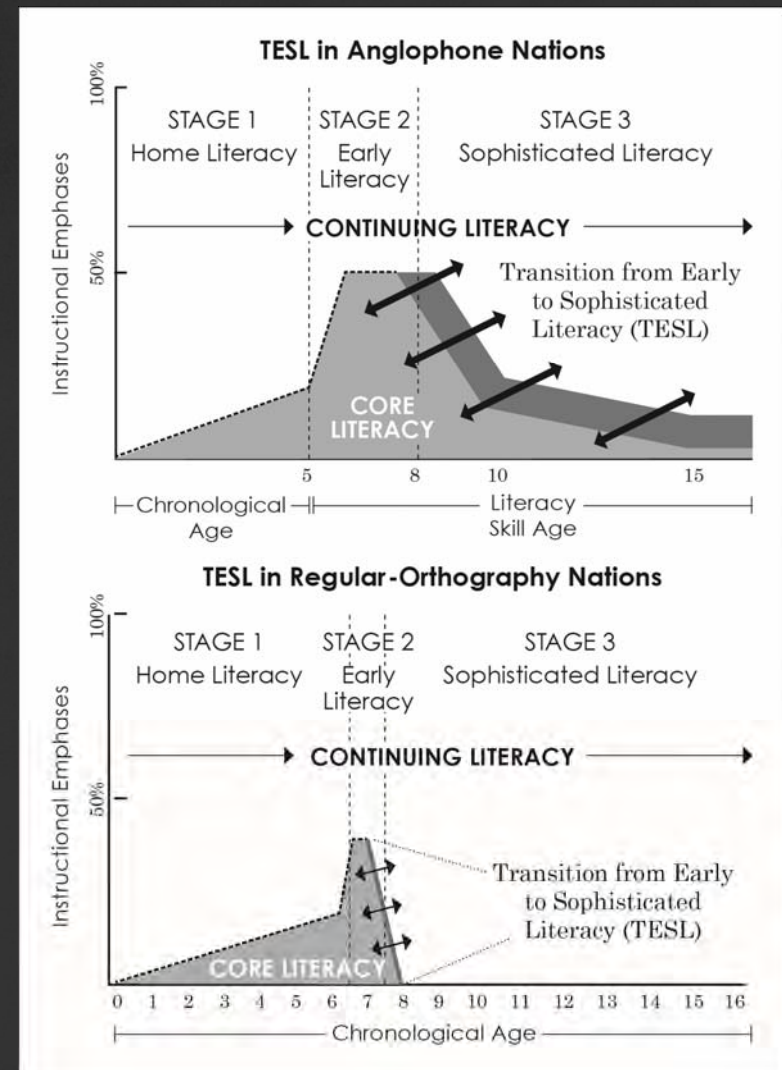


2

Transition from Early to Sophisticated Literacy Model

Figure 6, discussed in Research Tour 1:
Too Slow Word-Reading and Spelling Development

Article: 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.



3

The Differential Disadvantage Model: Part 1

Figure 17a, discussed in
Research Tour 10:
A Multiple Deficits Vs
Phonological Basis?

Article Galletly & Knight (2011a)
Differential disadvantage of
Anglophone weak readers due to
English orthographic complexity
and cognitive processing
weakness. *Australasian J. of
Special Education*, 35(1), 72-96.

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:

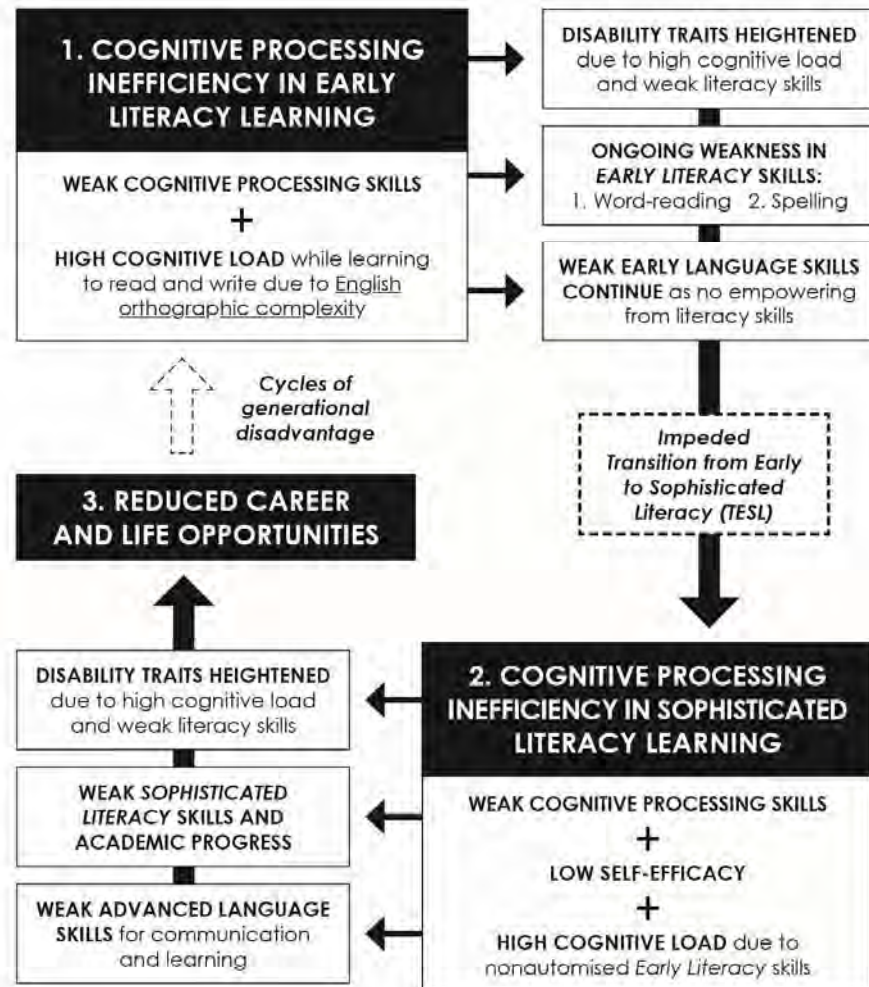
- Ease of learning to read and write words once letter-sounds are known.
- Cognitive-processing weakness and low intelligence not preventing mastery of word-reading and word-writing.
- Word-reading and spelling being mastered in the first school years.
- Very low magnitude of word-reading and spelling 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.

3

The Differential Disadvantage Model: Part 2

2. Differential disadvantage against Anglophone peers

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



4

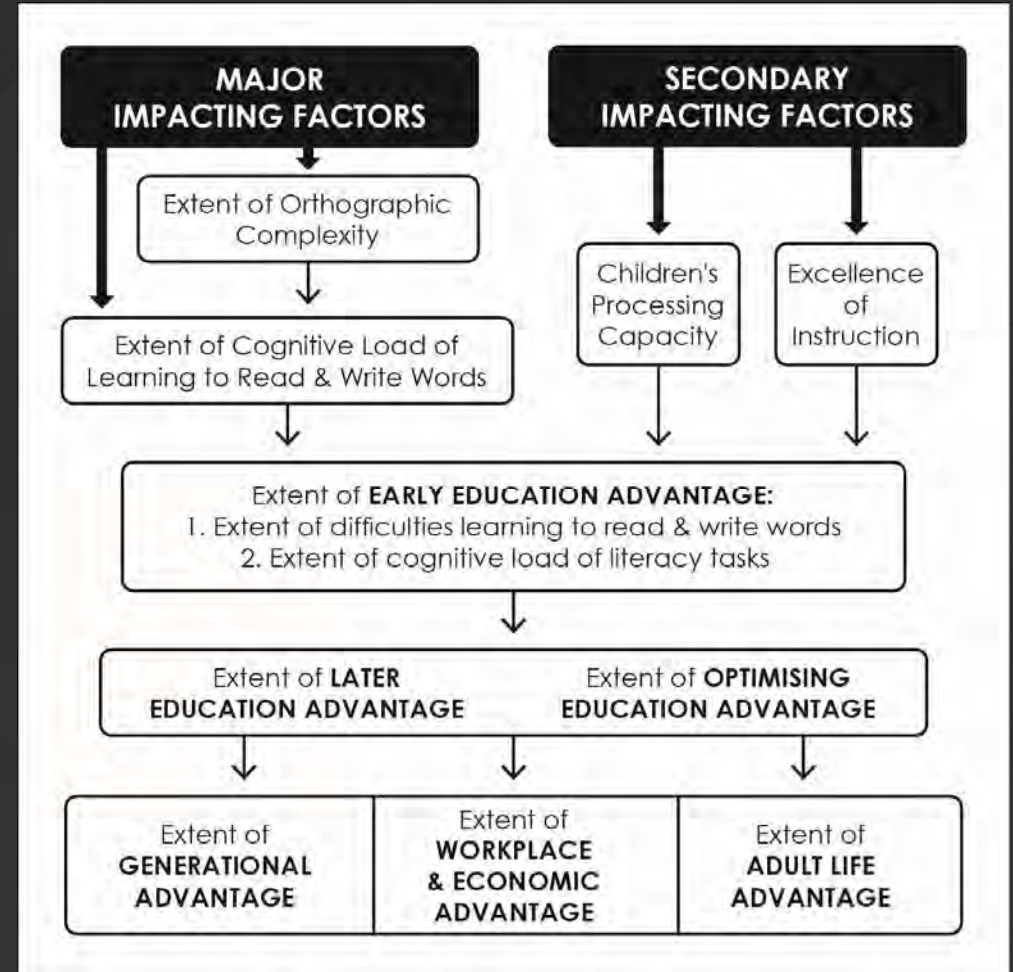
Orthographic Advantage Theory Model

Figure 16, discussed in Research Tour 9: Needs for Work-based Research

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

Appendix of tables: Key Features of Orthographic Advantage Theory.

www.literacyplus.com.au.



5

The 10 Changes Model

Figure 1, discussed in Chapter: The 10 Changes.

Book: Galletly, S.A. (2023)

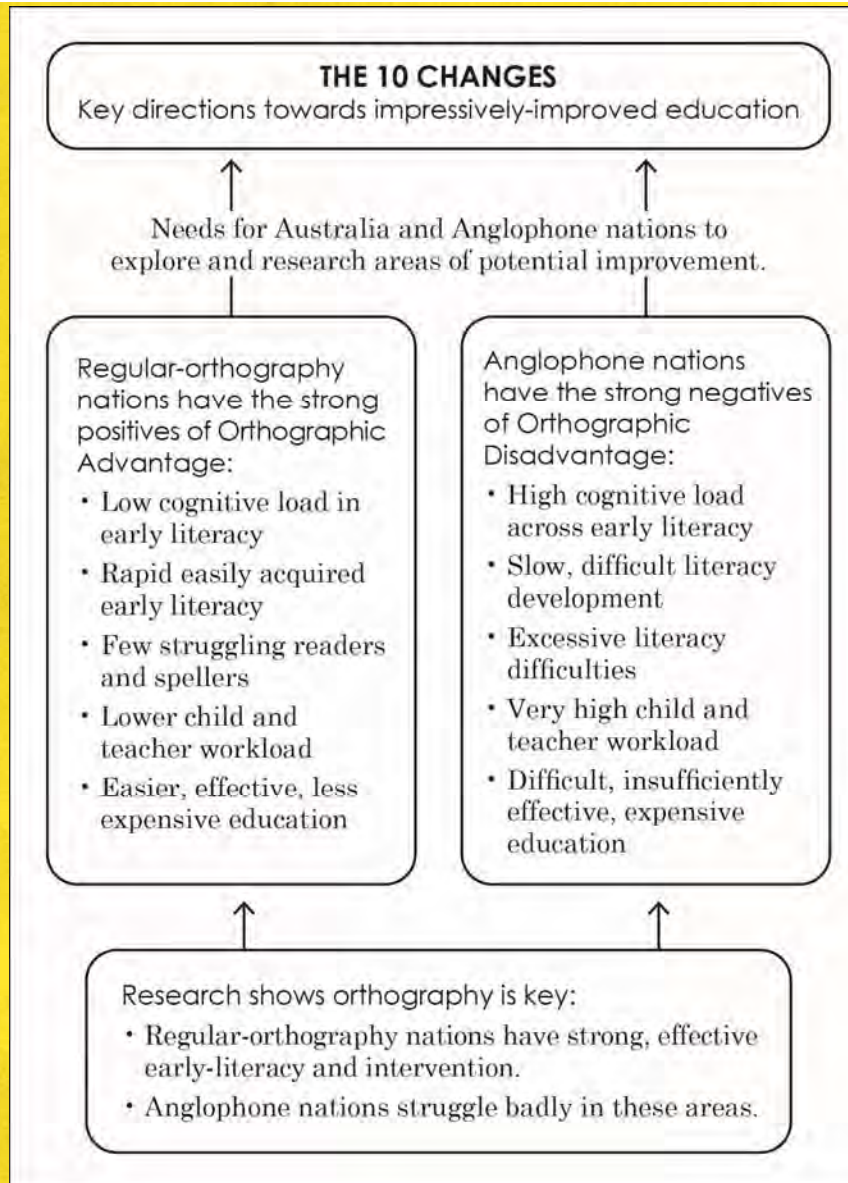
The Research Tours: The Impacts of Orthographic Disadvantage.

Vol. 2. Aussie Reading Woes.

Mackay, Qld, Australia:

Literacy Plus.

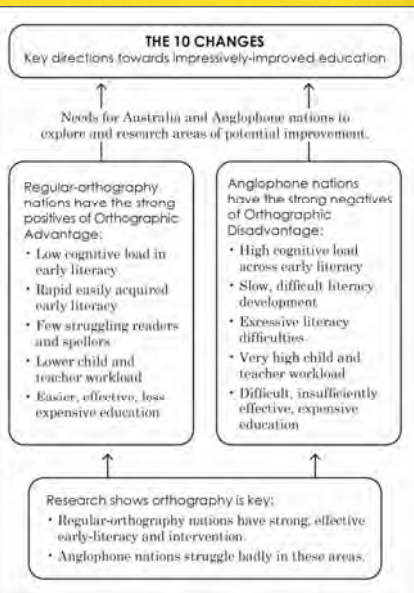
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5

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.



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.

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- (All studies & figures are explored in Galletly (2023) *The Research Tours: The Impacts of Orthographic Disadvantage*)
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