

An Introduction to Structured Literacy

Ros Lugg

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Terminology woes...

Structured Literacy
Science of Reading


...and what about synthetic phonics?

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What is the Science of Reading?

“The science of reading is a vast interdisciplinary body of scientifically-based research about reading and issues related to reading and writing.


This research has been conducted over the last five decades across the world, and it is derived from thousands of studies conducted in multiple languages.”



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What is the Science of Reading?

“The Science of Reading has culminated in a preponderance of evidence to inform how proficient reading and writing develop; why some have difficulty; and how we can most effectively assess and teach and, therefore, improve student outcomes through prevention of, and intervention for, reading difficulties.”




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So what is Structured Literacy?

Structured Literacy – a trademarked term owned by the International Dyslexia Association.

“An approach grounded in the Science of Reading.”

A specific methodology – not the research itself.




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What about Synthetic Phonics?

Synthetic Phonics – officially means identifying the individual sounds and blending them together (synthesizing them)

Recommended by the **National Reading Panel** (USA) in 2000 – called systematic phonics.

Absolutely consistent with **Structured Literacy**, but doesn't include emphasis on syllable rules.



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What's in a name?

Structured Literacy - A specific methodology

Science of Reading - Underpinning research



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Core Principles of Structured Literacy



Explicit – the teacher explains and models key skills, with well-chosen examples.

Children are not expected to develop these skills based mainly on exposure and incidental learning opportunities.



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Systematic and cumulative – a planned sequence of instruction. Important prerequisite skills taught before more advanced skills.

Example:
Children are not expected to decode or spell complex words before simpler words.



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Diagnostic – students are screened and their progress is monitored. Students who need help are promptly identified.

Effective interventions provide opportunities for students to respond and practice what they are learning, with the teacher providing clear, prompt, constructive feedback to students' errors.



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Assessments are used to help target specific skills that need to be addressed for individual students.

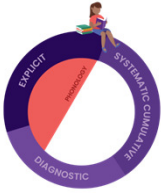
Interventions should be appropriately intensive, with a greater level of intensity (i.e. smaller group size, more time) for children who are further behind.



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Core Principles of Structured Literacy



Phonology

Patterns of sounds in a language

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Sound-Symbol

Phonic knowledge and skills. Knowing how sounds are represented by letters and letter patterns.

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Syllables

A word unit/part with one vowel sound.

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Morphology

An understanding of words and their relationships.

dog – dogs
walk – walking, walked
non/sense

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Syntax

The arrangement or order of words in a sentence to convey meaning. The sequence and function of words in a sentence.

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Semantics

The meaning of language – comprehension and appreciation of written language.

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How should this work out in practice?

Teachers avoid introducing confusable phonic elements simultaneously.

Examples:

b/p
sh/ch

Multiple short vowel sounds

Multiple ways of representing the same sound:

ea/ee/ie/ey/e-e



How should this work out in practice?

Teachers avoid introducing confusable phonic elements simultaneously.

Children also have ample opportunities to apply their developing skills in reading texts they are capable of decoding and comprehending.



A key model developed by the USA National Reading Panel in 2000

Describes the progression of skills as reading develops as:

Sequential
Cumulative

The 5 Big Ideas in Beginning Reading



Summary Statement

National Reading Panel, USA

“It is important to emphasize that systematic phonics instruction should be integrated with other reading instruction to create a balanced reading program.....

Phonics should not become the dominant component in a reading program, neither in the amount of time devoted to it nor in the significance attached.”



Cognitive Load Theory

Sweller, J., 1988

Cognitive Load Theory – learners can absorb and retain information effectively only if it is provided in such a way that it does not ‘overload’ their mental capacity.



Cognitive Load Theory

Sweller, J., 1988

Key principle: You can't do two 'cognitive tasks' at the same time.

Cognitive = something you need to think about.



Cognitive Load Theory

Sweller, J., 1988

Cognitive tasks overload working memory.

Working Memory = the ability to retain and simultaneously process information

Key message: Develop automaticity for our learners. For as many aspects as possible!



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Cognitive Load Theory

Sweller, J., 1988

Rule-based teaching can lead to cognitive overload – particularly for our dyslexic and other struggling learners.



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Key misunderstandings about Structured Literacy



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Decodable Texts

Students should **only** be presented with texts with words they can decode.

We shouldn't be encouraging students to guess words from the context or from pictures.

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The Reading Ladder



If a spelling-based approach is done in the right way, it will:

Develop all the processing and perceptual skills needed for reading.

Develop all the understanding of text needed for reading.

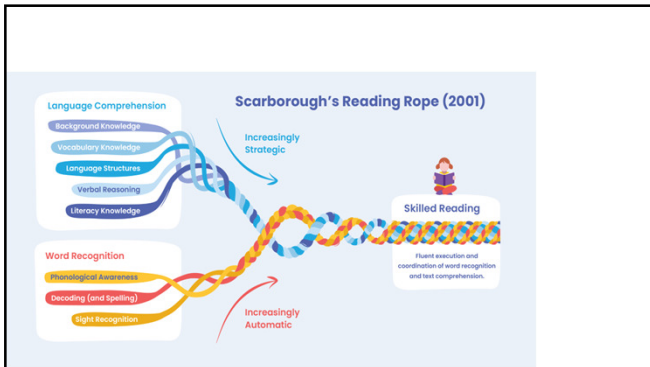
Include specific activities to make words into sight vocabulary.

Genuine reading fluency!



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Questions which arise:

A structured phonics-based literacy approach needs to include decoding words in context.

BUT:

Be aware that you're only targeting the 'mechanical' phonic aspects – not the 'intellectual' ones. Don't do too much – or make this their only experience of books.




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So how do we develop decoding?

Some decodable texts – certainly!


Decoding skills and knowledge can effectively be taught through spelling activities, literacy games and activities.



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Key misunderstandings about Structured Literacy


1. We must only use decodable texts.
2. Everything needs to be at the individual phoneme level. No word families or onset + rime.



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Phonic Approaches

- Grapheme-Phoneme Level**
- Onset + Rime Level**
- Word Families Approach**



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Phonic Approaches

Grapheme-Phoneme Level
b - a - t

Onset + Rime Level
b - at

Word Families Approach



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Statement on Phonic Approaches

National Reading Panel, 2000:

Found no difference in effectiveness between these approaches.

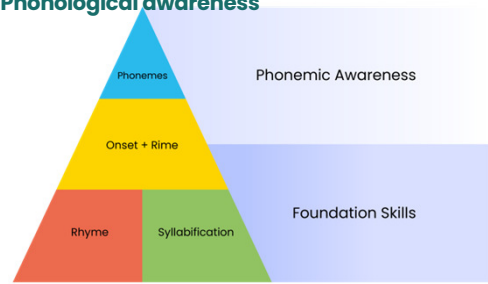
Some later research:

Initial focus on grapheme-phoneme level can lead to better reading outcomes.



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Phonological awareness



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Rhyme

Rhyme Recognition – important for early literacy.



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Rhyme Research

Rhyme Recognition for 4-5 year-old pre-readers is the single most important predictor of later reading accuracy.

Bryant & Bradley (1983)

Later research:

Ability to identify individual phonemes is the most important predictor.

for 6 year-olds



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Development of Segmentation



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Onset + Rime

Breaking words into two 'chunks' is significantly easier than breaking it into individual phonemes (sounds).

string

Anything between 2 and 6!



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Individual phonemes:

(sounds)

s - t - r - i - ng

Onset + rime:

str - ing



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Individual phonemes

Not a natural stage in the development of phonological awareness.

Dyslexic learners in particular will struggle with this activity.



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Rhyme

Rhyme Recognition – important for early literacy.

Particularly significant for developing **analogical transfer**.



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Rhyme

Analogical transfer – the ability to:

Recognise patterns in words.

Apply that to work out unknown words.



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w or l



ball
tall
mall
fall
wall



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Found no difference between these approaches.

Some later research:

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better **reading** outcomes.




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Importance of onset + rime

(Word Families)

Make 500 common words from only 37 rimes.

Phase 1 Rimes				
-ot	-ell	-in	-ot	-ug
-an		-ill	-op	-uck
-ap		-ip	-ock	
-ash		-it		
-ack		-ick		
		-ing		



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Importance of onset + rime

(Word Families)

Phase 2 Rimes				
-ank	-est	-ink	-oke	-unk
-ate		-ice		-ump
-ale		-ide		
-ake		-ine		
-ame				

Phase 3 Rimes			
-ail	-eat	-ight	-ore
-ain			
-aw			
-ay			

Note: This sequence is consistent with the Scope and Sequence for Ready to Read Phonics Plus.




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Individual Phonemes

Working only with individual phonemes is challenging to many learners.


Work should include onset + rime and word families.



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Key misunderstandings about Structured Literacy

1. We must only use decodable texts.
2. Everything needs to be at the individual phoneme level. No word families or onset + rime.
3. We need to teach syllable rules.



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Syllabification

Auditory Syllabification – the ability to break spoken words into ‘chunks’.

remember

Syllabification Rules – how to break written words into syllables

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Auditory Syllabification

The ability to hear the beats (syllables) in a word.

Easy way to teach it:

Hold your hand under your chin and say the word.

The number of times your chin touches your hand is the number of syllables.



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Syllabification Rules

Six Types of Syllable

- Closed syllables
- Open syllables
- Silent 'e'
- Vowel pair
- R-controlled
- le ending



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Cognitive Load Theory

Sweller, J., 1988

Rule-based teaching can lead to cognitive overload – particularly for our dyslexic and other struggling learners.



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How reliable are syllabification rules?

“Does English have Useful Syllable Division Patterns?”

(Reading Research Quarterly, 2020)

Devin Kearns, PhD

Associate Professor at University of Connecticut



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How reliable are syllabification rules?

Syllable Pattern	Reliability
VC-CV	41-79%
CV-CV	33-47%
V-CV With long 'u'	84%
V-CV With long 'y'	18%



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How effective is it to teach syllabification rules?

Those approaches that taught rigid spelling rules for syllabification didn't improve reading.

Bhattacharya & Ehri, 2004



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Key misunderstandings about Structured Literacy

1. We must only use decodable texts.
2. Everything needs to be at the individual phoneme level. No word families or onset + rime.
3. We need to teach syllable rules.
4. We shouldn't teach sight vocabulary any more.



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What are sight words, exactly?

High frequency words which are irregular or not yet decodable.

WAS



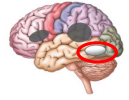
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What are sight words, exactly?

High frequency words which are irregular or not yet decodable.

Those words which have been orthographically mapped to the Visual Word Form Area, so they no longer need to be decoded.

They can now be instantly recognised without conscious decoding.



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Why are sight words important?

By definition, they're common words which will be met frequently in the early stages.

The more words which can be instantly visually recognised, the quicker the reader will make that transition to being a fluent reader.



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Key phases of literacy development

Ehri, L. 1985



Visual recognition – tiny number of words.

Ability to decode regular words.

Visual recognition of words without conscious decoding.



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Key phases of literacy development

Ehri, L. 1985



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Understandable Question

"How do I know when my student starts to use the Visual Word Form Area for Orthographic Mapping?"

Research studies suggest that the Visual Word Form Area operates at around 150ms or faster.

It is now possible to measure this speed.



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Visual Recognition Speeds by Age

Age	Low 0 - 19%	Low Average 20 - 35%	Average range 36 - 65%	High Average 66 - 80%	High 81 - 100%
5:00 - 5:11 yrs	700 - 800	600 - 700	450 - 600	350 - 400	50 - 300
6:00 - 6:11 yrs	600 - 800	450 - 550	300 - 400	200 - 250	50 - 150
7:00 - 7:11 yrs	550 - 800	400 - 500	250 - 350	150 - 200	50 - 100
8:00 - 8:11 yrs	450 - 800	250 - 400	150 - 200	100	50
9:00 - 9:11 yrs	350 - 800	200 - 300	100 - 150	50	-
10:00 +	300 - 800	150 - 250	50 - 100	-	-

Exploring the relation between visual recognition speed, teacher literacy assessment and age. Analysis of the StepsWeb Visual Recognition Speed Test for ages 5.0 - 8.9
Cowie S., Pinner B., & Lugg R., 2017

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7:00 - 7:11 yrs	550 - 800	400 - 500	250 - 350	150 - 200	50 - 100
8:00 - 8:11 yrs	450 - 800	250 - 400	150 - 200	100	50
9:00 - 9:11 yrs	350 - 800	200 - 300	100 - 150	50	-
10:00 +	300 - 800	150 - 250	50 - 100	-	-

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Visual Recognition Test Results

Date Taken	Result	Summary
16 Nov 2022	50ms	Age Appropriate
17 Jun 2020	150ms	Low Average
29 May 2019	750ms	Low

Note: For this test, a lower score is better. It represents the amount of time a student needed to look at an item to visually recognise it. For results range between 50ms and 800ms.

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Developing Visual Recognition Speed

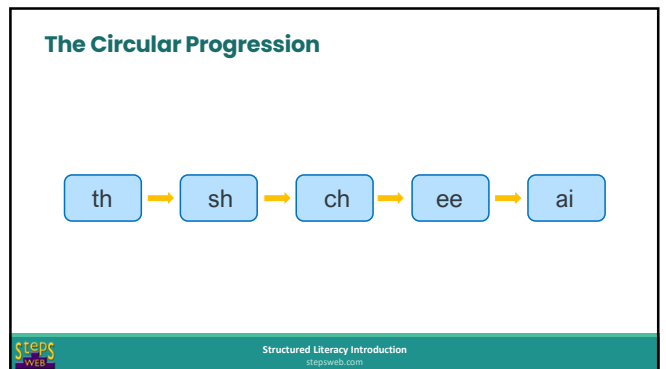
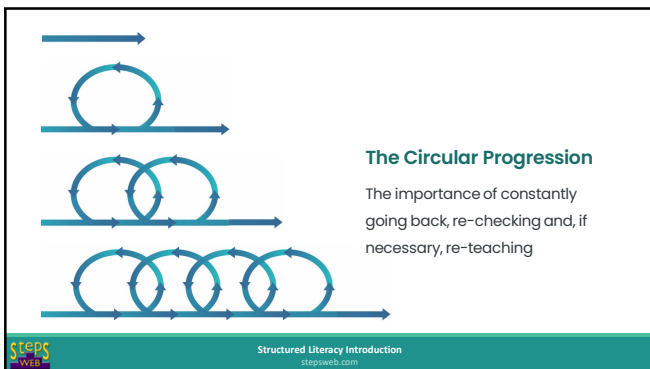
Not complicated – Plenty of exposure to words!

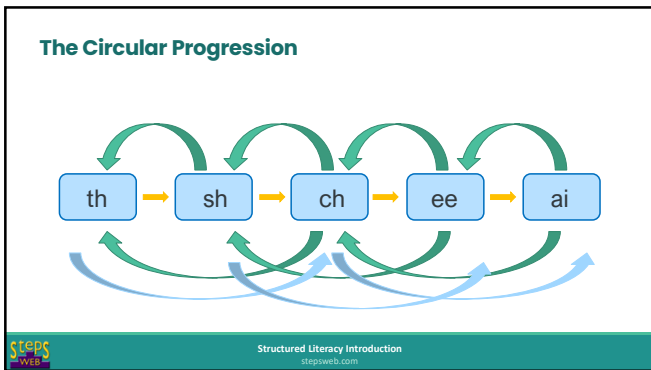
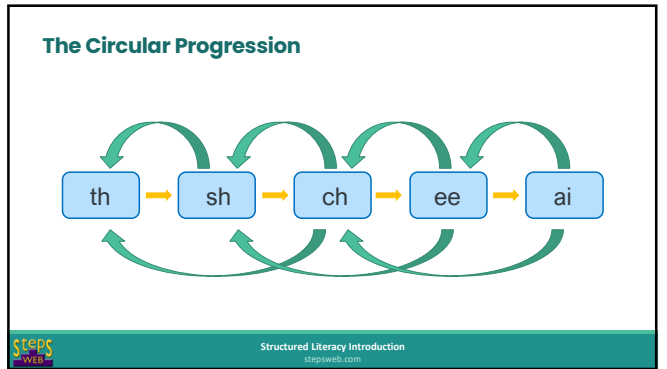
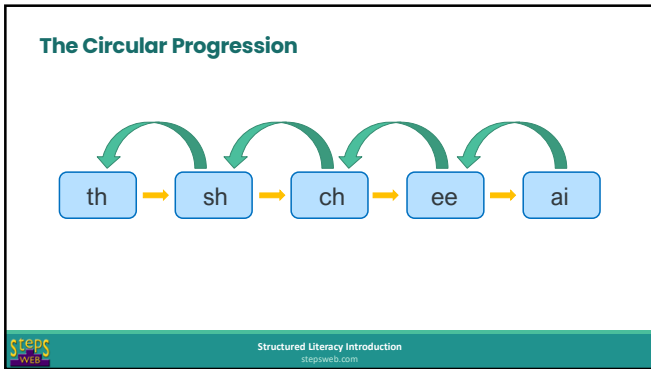
Creating and reinforcing the neural images of those words.

Practising retrieving and recognising those neural images using the Visual Word Form Area.

Reading
Re-reading!
Writing
Word games

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StepsWeb activities

Level 3 - 6A

Find the Letters	Find the Picture	Find the Word	Choose the Word	Word Flash	Feed The Kiwi
Sentence Builder	Sound Spits	Word Search	Spelling	Vowel Ladder	Jigsaw
Drop	Spelling Quiz	Initial Sounds	Clues	Treasure Hunt	

school	tooth
pool	spoon
too	soon
zoo	cool
room	moon
food	smooth

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www.literacyresearchcommons.org

WELCOME TO THE
Literacy Research Commons

Literacy Research Commons is a site dedicated to sharing a range of material within the Literacy field.

More about this site

FACT-CHECKING THE SCIENCE OF READING

Fact-checking the Science of Reading

Rob Tierney and P David Pearson explore the validity of claims associated with the Science of Reading as they have appeared in social media, the popular press, and academic works.

Understanding Structured Literacy

Notes available on website. Send in any Q&As.

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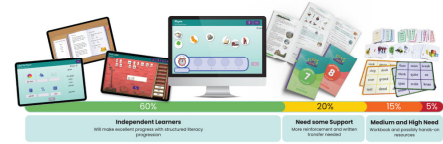
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[StepsWeb for your struggling learners](#)

[Instant Visual Recognition and Reading Fluency](#)



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