



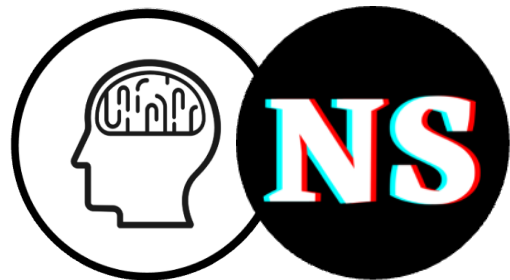
Welcome

**Sharing Best Practice
Geelong 2023**

Reading Comprehension, but not as you know it! Jumping into Knowledge-Rich Curricula

DR NATHANIEL SWAIN

NATHANIELSWAIN.COM



SOLAR LAB
Science of Language
and Reading Lab





GET THE SLIDES

Acknowledgements

Reid Smith et al.

[Check out Ochre](#)

Smith, R., Snow, P., Serry, T., & Hammond, L. (2021). The role of background knowledge in reading comprehension: A critical review. *Reading Psychology*, 42(3), 214-240.

[Brad Nguyen](#)

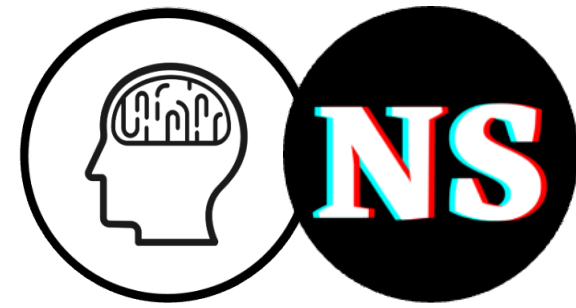
Docklands Primary School

Brandon Park Primary School

Core Knowledge Curriculum Series™

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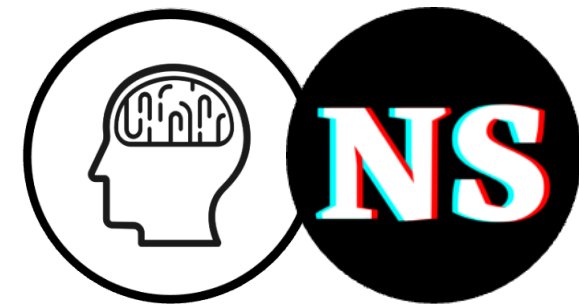
OVERVIEW

Where did all the knowledge go?

Two major flaws in anglophone curricula

Knowledge as an anchor for learning and literacy

Knowledge as a social equaliser



OVERVIEW

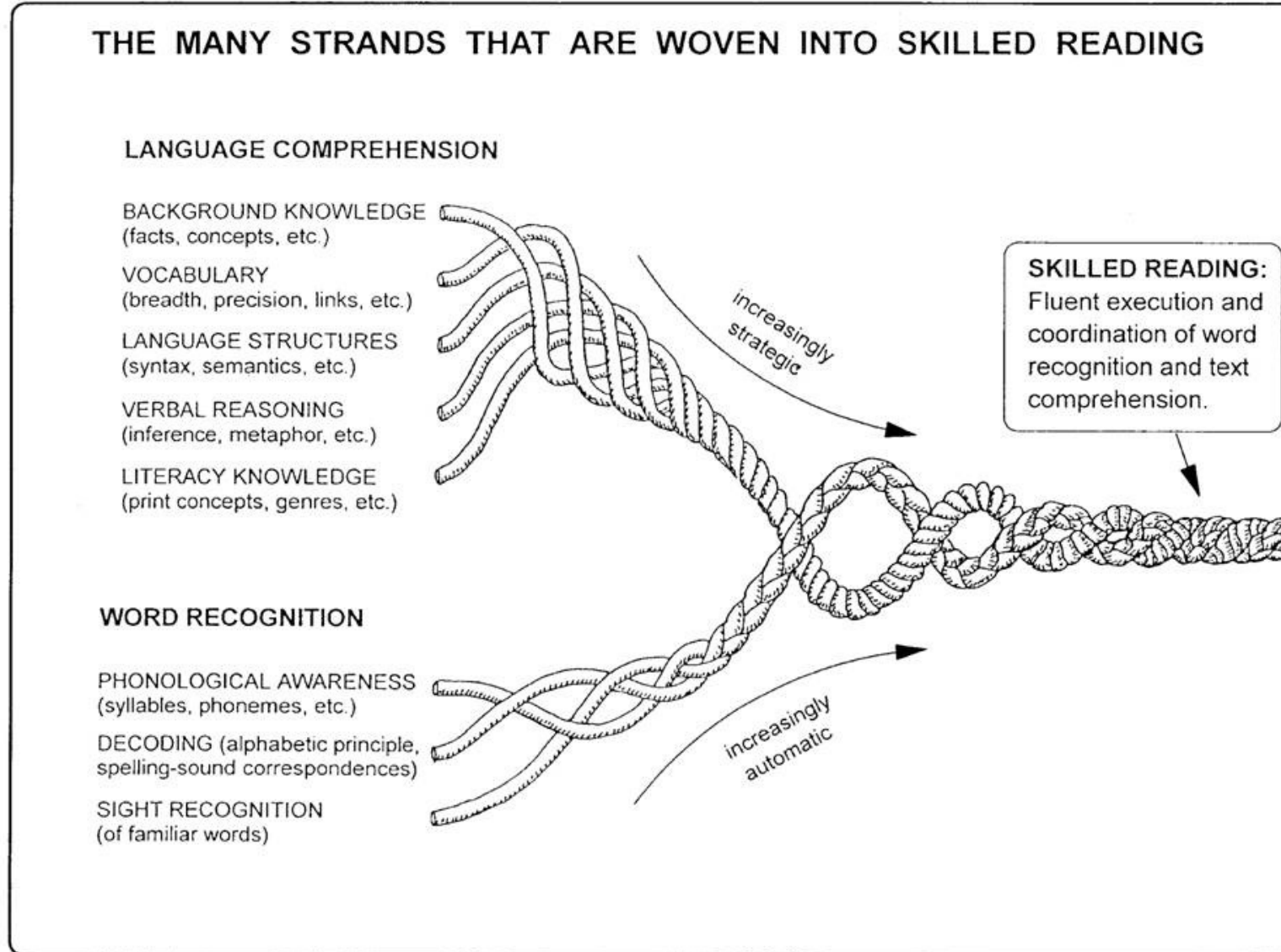
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Two major flaws in anglophone curricula

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Knowledge as a social equaliser

Where is *knowledge* in reading comprehension?



The image, originally appeared in the following publication: Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97-110). New York, NY: Guilford Press.

Where is *knowledge* in reading comprehension?

Have you every tried writing something that doesn't require any inferences? I have.

Tell me what you think of the opening to my story.

Some writing that (I hope) doesn't require any inferencing...

At 6:00am, which is early in the morning, most people are still sleeping. However, it is important to wake up at this time because there are many things that need to be done in the day. So, John, the main character, did in fact wake up at 6:00 am. He brushed his teeth for two minutes. One of the first things to do after waking up is to brush your teeth. This order is common in North American countries, but teeth-brushing usually occurs after breakfast in Australia. Brushing teeth involves using a toothbrush and toothpaste to clean your teeth and freshen your breath. After brushing your teeth, it is important to take a shower. This is what John did next, for 15 minutes. Showering means standing under a stream of water to clean your body and wash off any dirt or sweat. It is important to shower to stay clean and fresh.

Once you are clean, it's time to get dressed in appropriate clothing for the day ahead. Getting dressed is important because it allows you to present yourself in a neat and professional manner. After John got dressed, he went downstairs and had breakfast, which is a common order to do things. Breakfast is the first meal of the day and provides your body with the necessary energy and nutrients to start the day. John had two slices of toast with butter and jam, a bowl of cereal with milk, and a cup of coffee.

He then left the house and walked to the bus stop, which was a five-minute walk away. John left his house because he had to go to work, which was not near his house. He waited for the bus for 10 minutes, because it was his means of transportation to get to his destination, and catching buses nearly always involves waiting, as the bus does not come often enough to avoid such a wait. After ten minutes he got on the bus and sat in the third row from the front. The bus ride to his office took 20 minutes.

Knowledge is what we infer with!

Some better writing, with much more inferencing

John stirred awake at the crack of dawn, as the dimly lit room started to glow with the morning sun. After peeling himself off the bed, he stumbled into the bathroom and grabbed his toothbrush. Two minutes later, he was in the shower, with steam clouding the room.

As the water cascaded down his body, John's mind started racing. What kind of day would it be?

...

Some better writing, with much more inferencing (cont.)

Would he get through his work on time? Thoughts of his boss and coworkers haunted him, even as he dried himself off and got dressed. Downstairs, the kitchen smelled of coffee and toast. John's breakfast was simple, yet satisfying - two slices of toast with butter and jam, a bowl of cereal with milk, and a hot cup of coffee. As he stepped out of the door, the cool morning air greeted him, and he set off for the bus stop. Five minutes of walking brought him to the stop, where he waited anxiously for ten more minutes, lost in thought. Finally, the bus arrived, and John boarded, settling himself in the third row from the front. As the bus started rolling, he couldn't help but feel a sense of unease. Something was different today, and he couldn't put his finger on it. As the bus ride dragged on, John's heart raced, wondering what the day would bring.

Writers leave space for inferences,
but if you don't have knowledge,
you can't make the inference.

Reading Comprehension Assessments *attempt* to avoid requisite knowledge

Vocabulary is intrinsically tied to knowledge

You cannot test reading comprehension without tapping into vocabulary and knowledge.

Baseball study – Recht and Leslie

Poor readers who know more

understand and remember more

than **great readers** who *know less* about the topic.

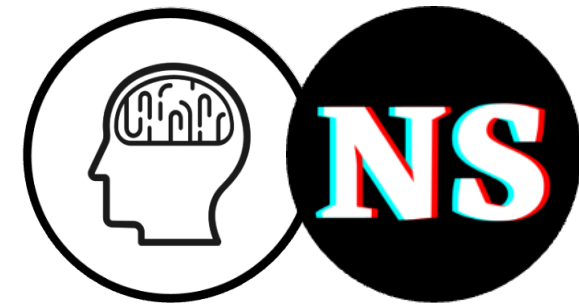
Recht, D. R., & Leslie, L. (1988).
Effect of prior knowledge on good
and poor readers' memory of text.
*Journal of Educational
Psychology*, 80(1), 16.

Good readers know things ...

So, how do you teach knowledge?

It's **not** just about **activating**

It's about *Building* Knowledge
(Velcro metaphor, Wexler)



OVERVIEW

Where did all the knowledge go?

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Knowledge as an anchor for learning and literacy

Knowledge as a social equaliser

Two major flaws in anglophone (English-speaking country) curricula

1. Outcome-based curricula
2. Expanding horizons approach

1. Little knowledge specified in Curricula

Too many verbs, not enough nouns...

Year 3 – Version 9

AC9E3LE03

discuss how an author uses language and illustrations to portray characters and settings in texts, and explore how the settings and events influence the mood of the narrative

Year 5 – Version 9

AC9E5LY05

use comprehension strategies such as visualising, predicting, connecting, summarising, monitoring and questioning to build literal and inferred meaning to evaluate information and ideas

2. The limits of the expanding horizons approach

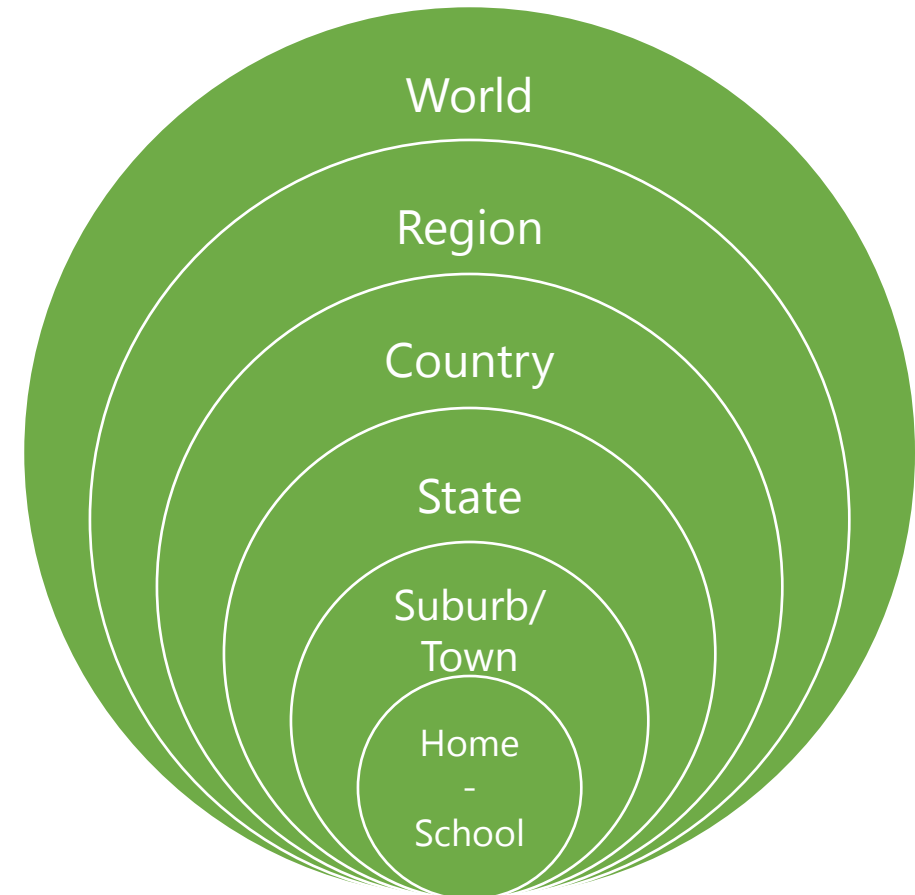
A community...

What is a community?

A community group of people living in the same place or sharing backgrounds or beliefs.

In a community, people **depend** on one another. This means they all have roles or jobs, and need other people to do these for the community to work.

There are many different levels of community (see Diagram)



RETHINKING THE CURRICULUM

The problem with the expanding horizons model for history curricula

The predominant model for teaching history lacks coherence and is built on incorrect assumptions about what young children are able to learn.

By **Kevin S. Krahenbuhl**





Mesopotamia

First Grade History/Geography Unit: Mesopotamia

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LESSON 2

Farming changes everything

The Big Question:

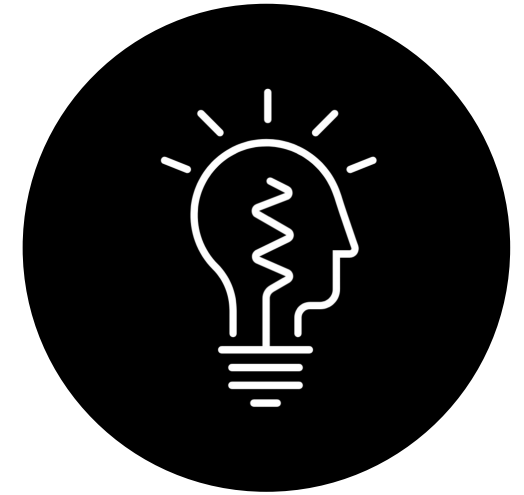
Long, long ago, what did people learn how to do that changed how they lived?



Teacher and students read together.

TODAY'S LEARNING GOAL

I will explain how farming changed the way people lived





Teacher and students read together.



Long, long ago, how did people first get food to eat?



Long, long ago, people got food to eat by ____.

Ancient Times

Long, long ago, people moved from place to place **gathering** plants and hunting animals for food. Sometimes they lived in simple huts. Over time, people learned to **farm**. They grew plants that could be eaten as food. Slowly, groups of people began to live together.



Vocabulary

gathering, v. looking for, picking and collecting plants to eat.

farm, v. planting seeds to grow the plants needed for food



Teacher and students read together.



Long, long ago, how did people first get food to eat?



Long, long ago, people got food to eat by **gathering plants and seeds and hunting animals**. They had to move from place to place to hunt and gather.

Ancient Times

Long, long ago, people moved from place to place **gathering** plants and hunting animals for food. Sometimes they lived in simple huts. Over time, people learned to **farm**. They grew plants that could be eaten as food. Slowly, groups of people began to live together.



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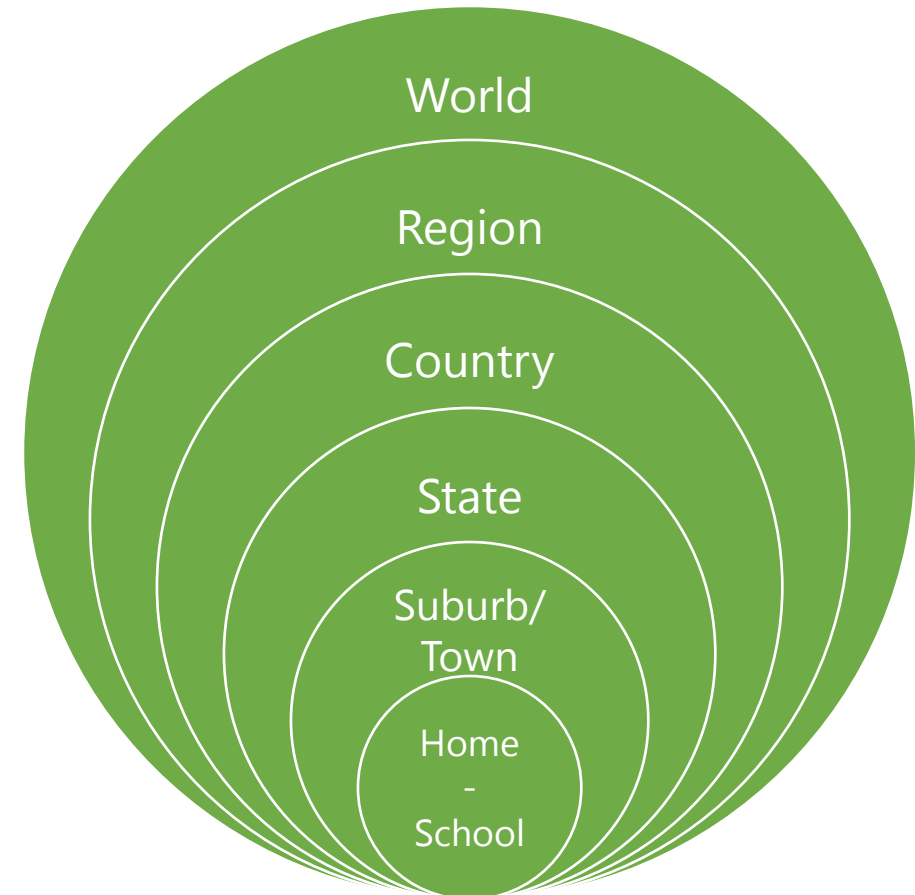
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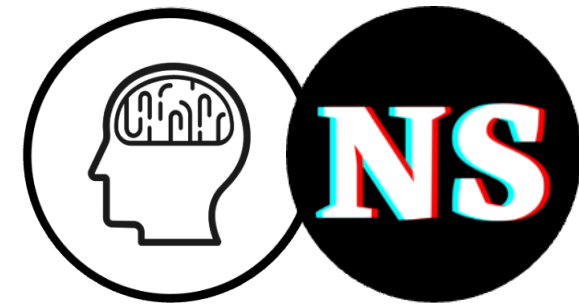
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Two major flaws in anglophone (English-speaking country) curricula

1. Outcome-based curricula
2. Expanding horizons approach



OVERVIEW

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Knowledge as an anchor for learning and literacy

Knowledge as a social equaliser

Comprehension Strategies?



Embedded

Modelled

Not a lesson in and of themselves



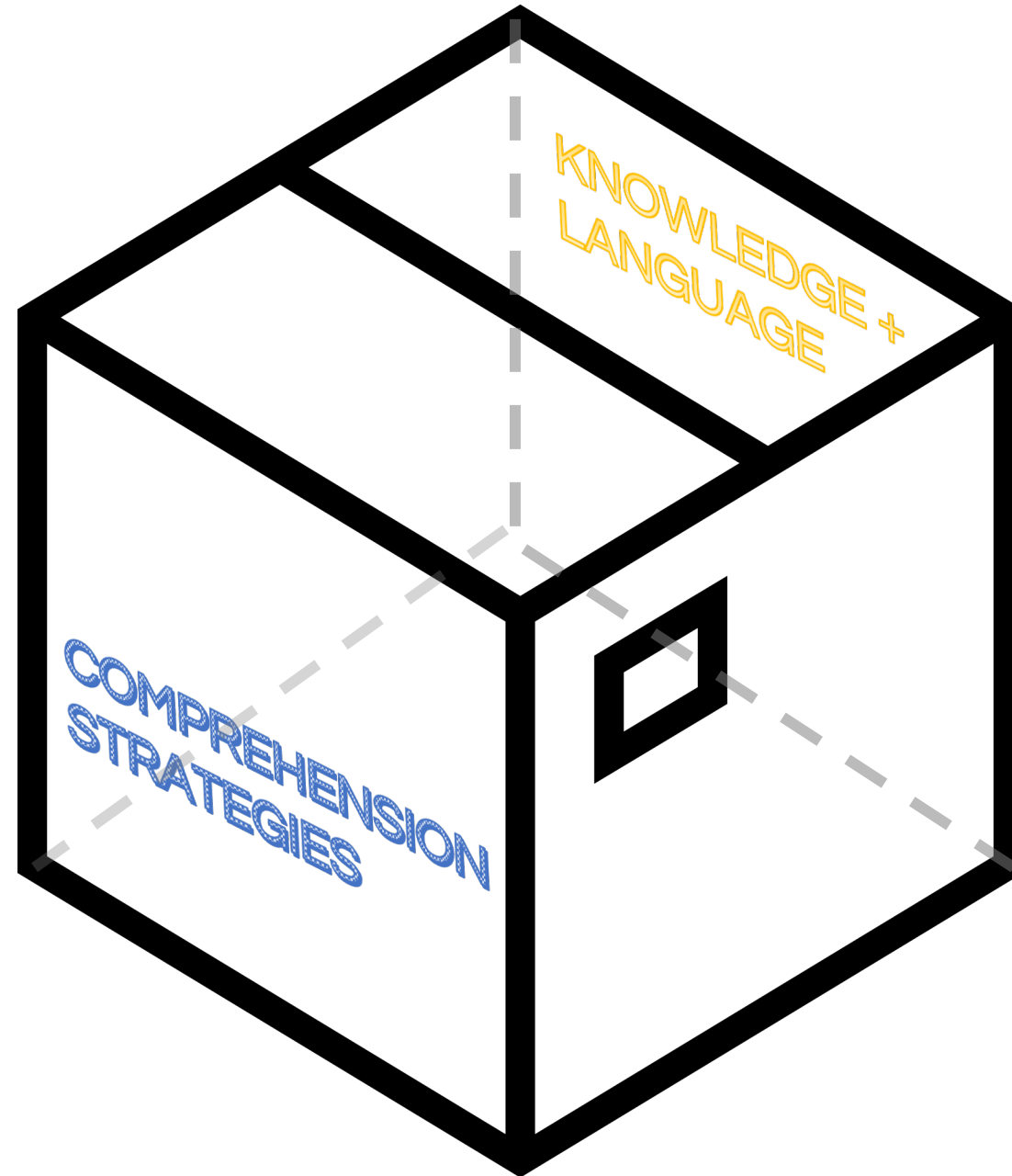
Predict



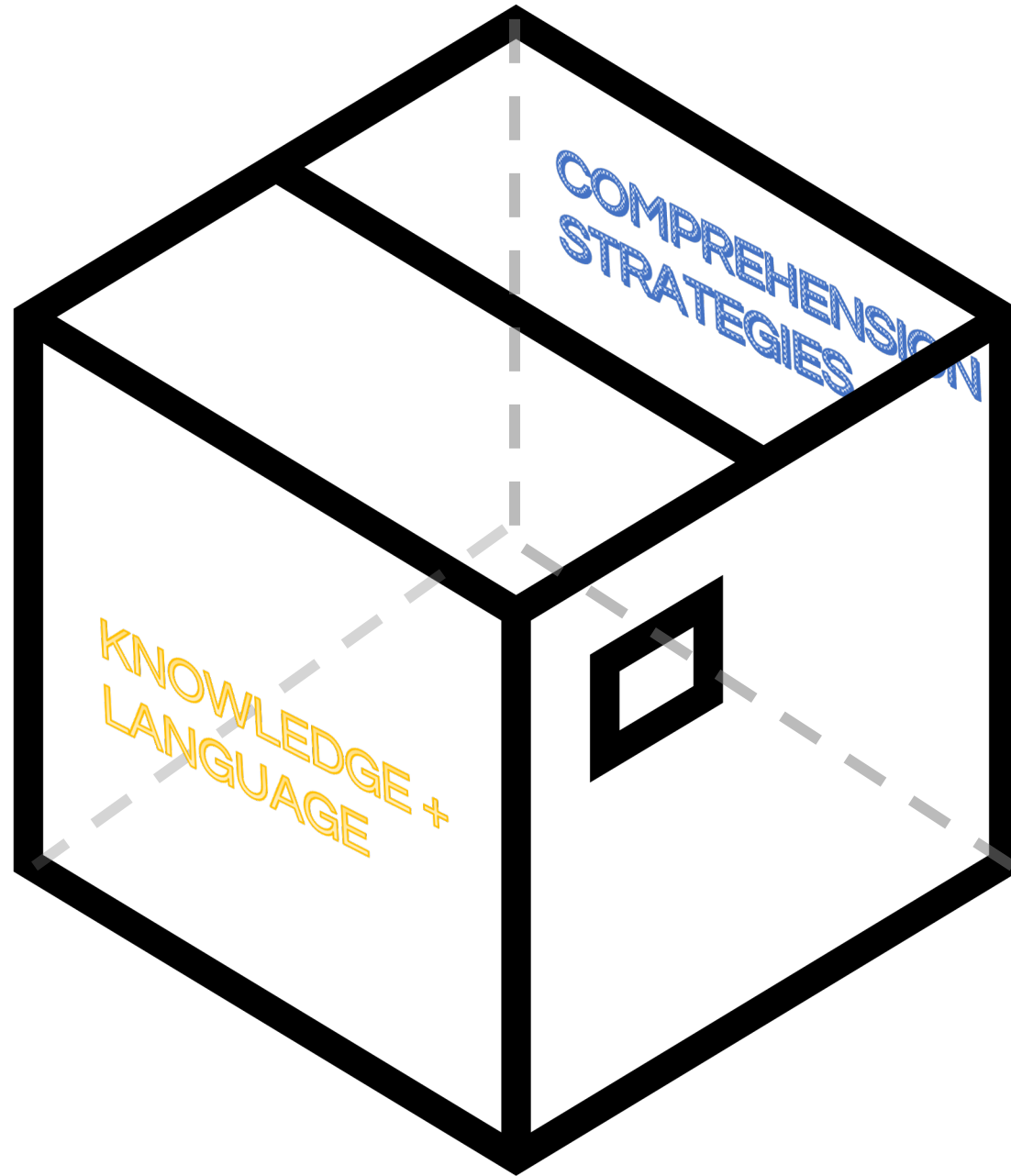
Check it makes
sense



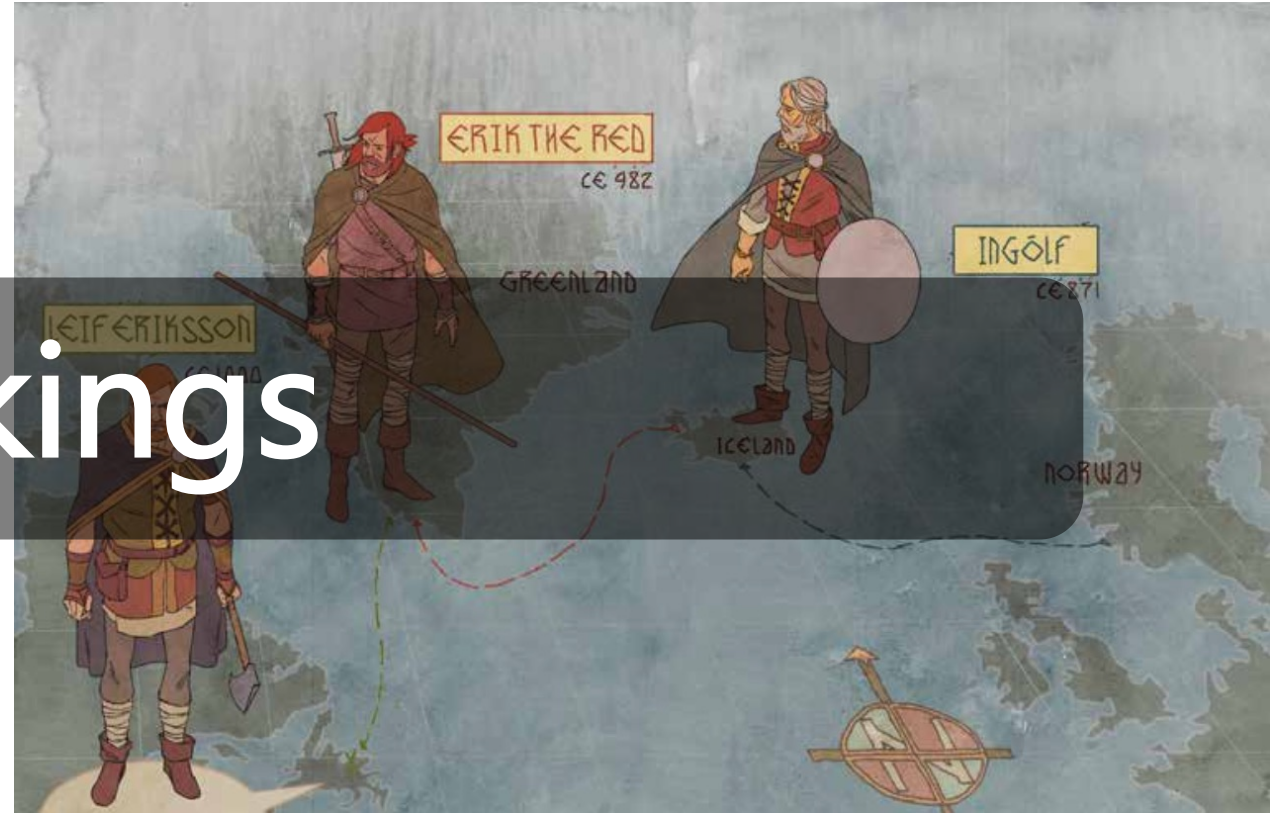
Summarise



See The Knowledge Gap,
By Natalie Wexler



See The Knowledge Gap,
By Natalie Wexler



Vikings

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TODAY'S LEARNING GOAL

I will describe the Viking way of life.





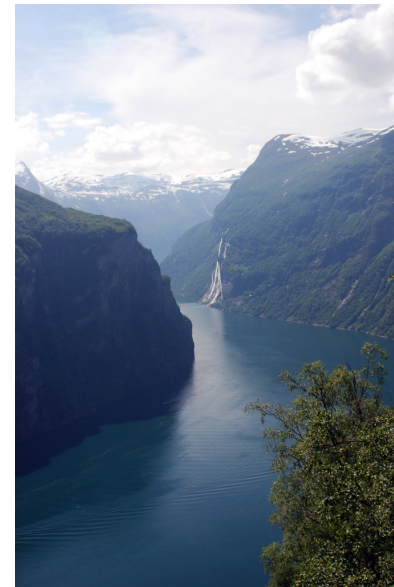
Mighty Warriors

A thousand years ago, a seafaring people called Vikings lived in northwest Europe. They made their homes in the region known in the present-day as Norway, Denmark, and Sweden (the countries known collectively as Scandinavia). The term *Viking* comes from *vikingr*, which means pirate in early Scandinavian.

Much of Scandinavia, where the Vikings lived, is made up of **rugged** highlands with little **fertile** land. **Fjords**, deep and narrow parts of the sea with high cliffs on both sides, typify the geography of this region. It likely that the people who lived in this type of environment would need to travel to faraway places for resources. 🗨️

Vikings were skilled shipbuilders and sailors. Their ships, called longships, were so **sleek** they seemed to fly through water, and were used to travel and take resources from other lands.

The Vikings were also fierce warriors. Sometimes they would **raid** towns and take property by force. In the story that follows, you will learn more about the Vikings.



A fjord



Teacher and students read together.



Why would the Vikings need to travel faraway to get supplies?



The Vikings needed to travel faraway to get supplies because _____.



Vocabulary

rugged, adj. rough/difficult to live in

fertile, adj. good for farming

fjord, n. a deep and narrow portion of the sea that stretches inland, with high cliffs on either side



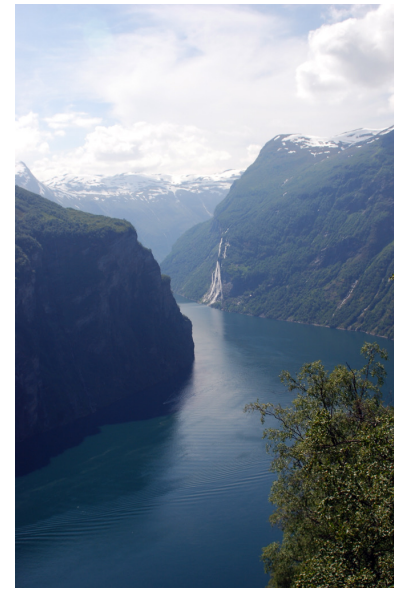
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The Vikings were also fierce warriors. Sometimes they would **raid** towns and take property by force. In the story that follows, you will learn more about the Vikings.



A fjord



Teacher and students read together.



Why would the Vikings need to travel faraway to get supplies?



The Vikings needed to travel faraway to get supplies because the **geography** of their homeland was rugged, with very little land for farming.



Vocabulary

rugged, adj. rough/difficult to live in

fertile, adj. good for farming

fjord, n. a deep and narrow portion of the sea that stretches inland, with high cliffs on either side

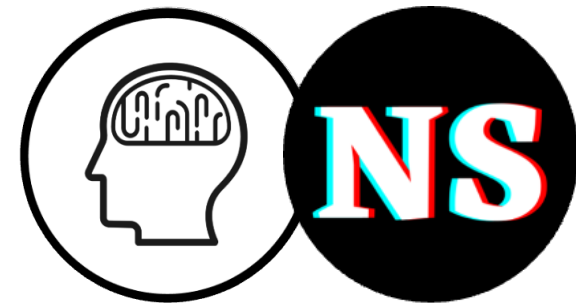
Knowledge and stories are the anchor point for building language and literacy

Can't teach vocabulary in a vacuum

Can't teach comprehension strategies in a vacuum

Knowledge-rich units, and narrative texts are strong anchor points for retention

Tricot, A., & Sweller, J. (2014). Domain-specific knowledge and why teaching generic skills does not work. *Educational Psychology Review*, 26(2), 265–283.
<https://doi.org/10.1007/s10648-013-9243-1>



OVERVIEW

Where did all the knowledge go?

Two major flaws in anglophone curricula

Knowledge as an anchor for learning and literacy

Knowledge as a social equaliser

What do our students know about ... Rivers?



World Rivers

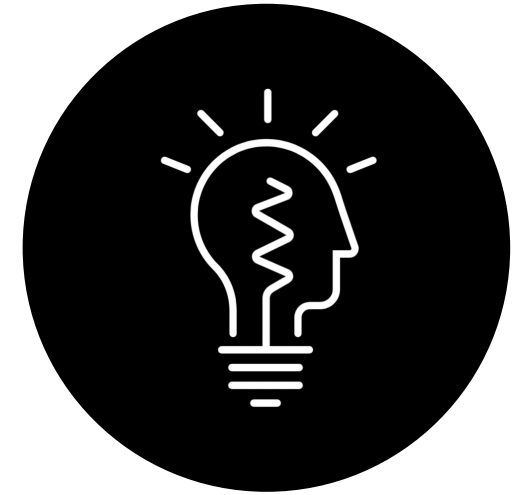
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TODAY'S LEARNING GOAL

I will explain why crops are grown close to the Nile and Yellow Rivers.





Teacher and students read together.



Why is the Nile an important river for the Egyptian people?



The Nile is an important river for the Egyptian people because ____.

The Nile River

The Nile River, the longest river in the world, is the most important river in Egypt. Its **riverbank** is lined with trees and behind the trees is sand. It stretches right through the Sahara Desert as far as the eye can see. The population of Egypt lives close to the Nile as it is its main **source** of drinking water. It provides water for farmers who have used it for irrigation of **crops** for thousands of years.

Three Major Rivers of Africa



Vocabulary

riverbank, n. land at the edge of a river

source, n. where something comes from

irrigation, n. the process of watering crops by using water from a river.

crops, n. plants grown for eating



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Teacher and students read together.



Why is the Nile an important river for the Egyptian people?



The Nile is an important river for the Egyptian people because it provides them with drinking water and it provides irrigation for crops.

Vocabulary

riverbank, n. land at the edge of a river

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Huang He: The Yellow River

The Huang He, or Yellow River, found in China, is also used for irrigation of crops. Its name comes from the yellow **silt** in its water. Water from the river is **diverted** into ditches so that the river water can flow through to rice fields. Clearing out the ditches of weeds and twigs is **essential** in allowing the rice to grow, thus providing an **income** for farming families.



What would happen to the rice fields near the Yellow River if the irrigation ditches were ruined?



If the irrigation ditches were ruined, the rice fields near the Yellow River ____.

Some Major Rivers of Asia



Vocabulary

silt, n. tiny pieces of soil or earth carried by water in a river

diverted, v. shift something onto a different path

essential, adj. extremely important

income, n. money you earn



Huang He: The Yellow River

The Huang He, or Yellow River, found in China, is also used for irrigation of crops. Its name comes from the yellow **silt** in its water. Water from the river is **diverted** into ditches so that the river water can flow through to rice fields. Clearing out the ditches of weeds and twigs is **essential** in allowing the rice to grow, thus providing an **income** for farming families.



What would happen to the rice fields near the Yellow River if the irrigation ditches were ruined?

If the irrigation ditches were ruined, the rice fields near the Yellow River would not survive (because they would not receive irrigation water).

Some Major Rivers of Asia



Vocabulary

silt, n. tiny pieces of soil or earth carried by water in a river

diverted, v. shift something onto a different path

essential, adj. extremely important

income, n. money you earn

Matthew Effect

The rich get richer, and the poor get poorer.

Stanovich, K. E. (2009). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Journal of education*, 189(1-2), 23-55.

Peter Effect

I cannot give what I do not have.

Binks-Cantrell, E., Washburn, E. K., Joshi, R. M., & Houghton, M. (2012). Peter effect in the preparation of reading teachers. *Scientific studies of reading*, 16(6), 526-536.

See Pamela Snow's work on this too.

Pearson and Swain:

“Students should **inquire** from a place of knowledge”

Knowledge is **what we think with** (see [Ashman, 2001](#))

Creativity & critical thinking is **domain-specific** (see Tricot and Sweller)

Tricot, A., & Sweller, J. (2014). Domain-specific knowledge and why teaching generic skills does not work. *Educational Psychology Review*, 26(2), 265–283. <https://doi.org/10.1007/s10648-013-9243-1>

There is a tributary going to the river. →

The rocks are to show people's houses. →

Irrigation of crops next to the river →

There is fish in the ocean →



Well done!



← The source of the river is at the base of the mountain.

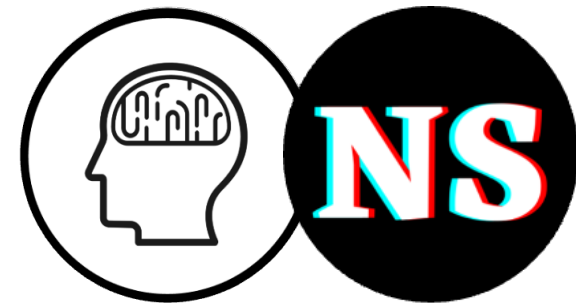
← trees and bushes along the river.

← There is a bridge.
← There is a boat made from leaves next to the bridge.

← People here somewhere. Why do people settle close to rivers?

← river going in to the ocean.

← The mouth of the river where the river goes out to the ocean.



REVIEW

Knowledge is vital, but **missing**, from reading comprehension

Two major flaws in anglophone curricula

Knowledge as an anchor for learning and literacy

Knowledge as a social equaliser

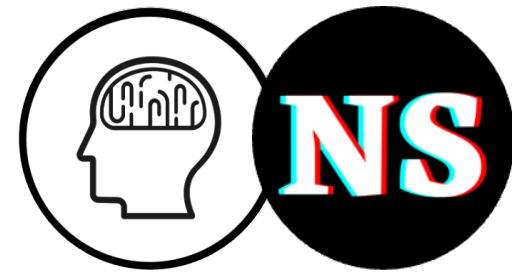
A N O T H E R C H A L L E N G E

What knowledge is worth teaching?

How do we decide?

Can we avoid these decisions any longer?

KEY MESSAGES



Knowledge is a vital under-valued and contributor to reading and all learning

Teaching knowledge as part of reading comprehension is a game-changer

Our national or state curricula are not always conducive...
Learn to operate within and beyond the curriculum

Knowledge-rich curricula
bring all students to the reading table

Hear and read more about this...

Reid Smith [Check out Ochre](#)

Smith, R., Snow, P., Serry, T., & Hammond, L. (2021). The role of background knowledge in reading comprehension: A critical review. *Reading Psychology*, 42(3), 214-240.

Resources on [Reading Science in Schools](#)

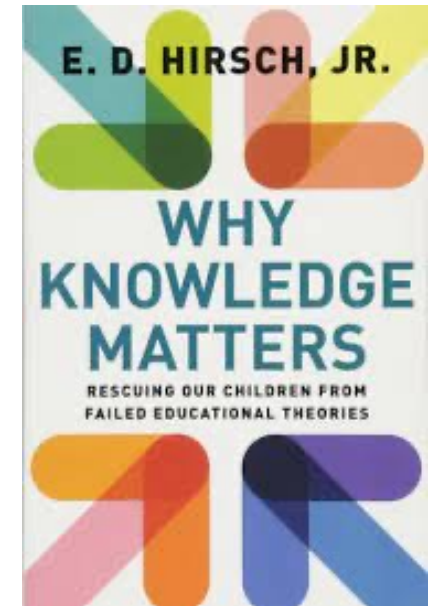
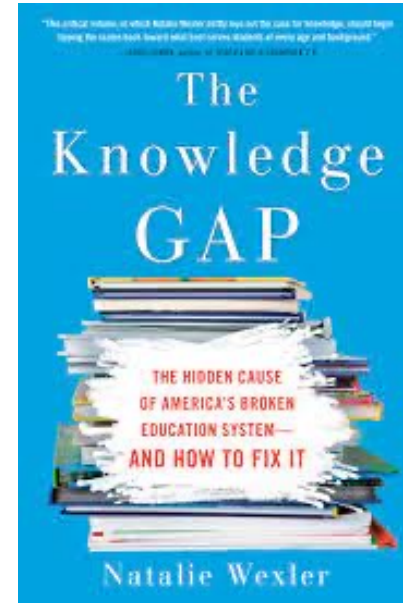
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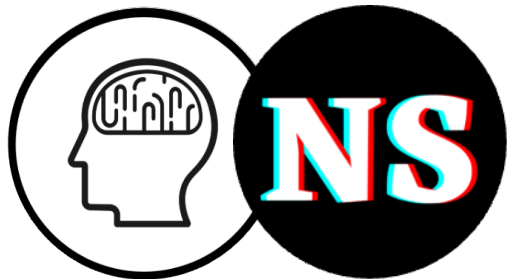


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