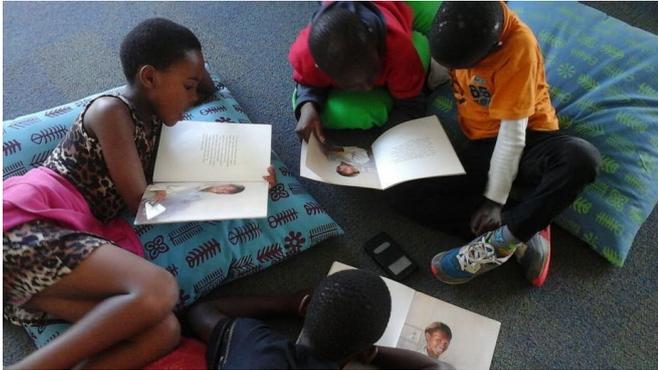


There's no simple answer to what counts as 'science' in teaching reading

3 December 2018, by Carolyn Mckinney



Two adversarial approaches have dominated debates about teaching reading for decades. Credit: Xolisa Guzula

What is the best way to teach children to read? This apparently simple question has, in fact, has been the subject of robust and often polarised debate.

Recently the New York Times ran [an opinion piece](#) titled "Why are we still teaching reading the wrong way?". It claimed that "teacher education programmes continue to ignore the sound [science](#) behind how people become readers".

As a teacher educator who also supports sound science, I think there are two key issues to consider before confidently staking a claim about the "right way" to teach reading. First, what do we mean by "reading"? And second, what counts as sound science?

This is important because the answers guide how reading is – or isn't – taught and tested. If we hold the view that reading is primarily about recognising letter-sound relationships and recognising as well as pronouncing words correctly, then we are likely to focus on instructing [children](#) systematically in letter-sound relationships (a phonics approach).

If we think that reading is primarily a meaning-making process that comes naturally to children, we will focus on engaging children in meaning-making through story reading and writing meaningful texts (a whole language approach).

These two adversarial approaches have dominated debates about teaching reading for decades. My colleagues and I in the newly formed [bua-lit collective](#) believe that this is a false, if not confusing, dichotomy. We are language and literacy researchers, activists, educators and teacher educators working together to share our [collective knowledge](#) and research about literacy, particularly in multilingual contexts.

We [argue](#) that learning to read involves more than decoding letter-sound relationships and making meaning from isolated texts. Children also need to be engaged in specific, meaningful daily practices that demand and model different kinds of reading as well as writing, involving a wide range of types of texts.

Children need to have a purpose to read and write (beyond assessment), positive reading and writing role models, and they need to learn how language and meaning work differently in different kinds of texts – for instance, in a story versus instructions.

Unpacking science

There is [a view](#) among some philosophers of science that science is a discipline with an accepted and uncontroversial methodology. It tests hypotheses by gathering empirical data to discover general laws that make the world more predictable. This approach assumes a certainty to [scientific knowledge](#), and often values data collection above theorising.

Yet this view of science is challenged within science itself. For example, theoretical physicist Carlo Rovelli [offers](#) an alternative position: science

is not about certainty. The methodology of science is not "written in stone", and its conceptual structures have changed over time. In fact, Rovelli states the core of science is continuous uncertainty and "scientifically proven" is a contradiction in terms.

Knowledge in science has changed fundamentally over hundreds of years. Science is an integral part of the modern world, and we understand more about the world through scientific endeavours. But there is much we don't understand. Sound science requires not just careful methods, but also conceptual clarity about what is being measured.

Unfortunately the "sound science" referred to in discussions about the teaching of reading generally ignores such critiques. It operates from a narrow understanding of what science is, and also of what reading is.

That's a problem. Positivist science is relatively successful in testing children's alphabetic knowledge – do they recognise and can they name individual letters of the alphabet, or can they decode the word cat as "c-a-t".

But it is far more difficult to test their ability to make meaning of and to engage critically with a text. This is because every person's ability to understand a text depends on their existing knowledge, experiences, language resources and the practices and activities they've engaged in.

Making meaning

Can you read the sentences below?

Being architecture neutral is a big chunk of being portable, but there's more to it than that. Unlike C and C++, there are no "implementation dependent" aspects of the specification. The sizes of the primitive data types are specified, as is the behaviour of arithmetic on them.

You probably "read" that paragraph quickly and fluently. But how much of it did you understand? If you are familiar with the language and activities of computer programming, you may understand quite a lot. But many, although they recognise the letter-

sound combinations and individual words, can make little sense of it. Even being able to "read" these sentences fluently doesn't help us.

Why? Because we don't have the appropriate background knowledge nor experience in computer programming. Making meaning through reading is a highly complex process. It goes far beyond letter and word recognition. Your ability to decode that test passage should show that "decoding" is not the same as reading.

This fact becomes extremely clear when you consider some children's poor "reading" performance. In South Africa, for instance, most children don't have access to rich print resources at home or in school. They are [not exposed](#) to people around them reading the kind of texts they need to read at school.

This means most of the country's children are at the mercy of a narrow approach whose proponents believe "reading" is a purely cognitive process that can be scientifically tested. This approach won't enable children to learn to read in a way that helps them to succeed at school beyond the early grades.

As well as explicit teaching of decoding and comprehension strategies, children need to participate extensively in purposeful reading and writing practices in order to become successful readers and writers. These activities are not easily assessed – but we cannot allow what is easily measured to drive what counts as successful reading for South African children.

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APA citation: There's no simple answer to what counts as 'science' in teaching reading (2018, December 3) retrieved 13 November 2019 from <https://phys.org/news/2018-12-simple-science.html>

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