

[If You're Going to Write About Science of Reading, Get Your Science Right](#)

Daniel Willingham

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There's a new [report](#) out about the teaching of reading. It came to my attention when Diane Ravitch [tweeted](#) about it, with the tag "There is no Science of Reading." It turns out to be a relatively brief policy statement from the [National Education Policy Center](#), signed by the [Education Deans for Justice and Equity](#).

I think the statement is pretty confused, as it conflates issues that ought to be considered separately. This statement is meant to be about the science of reading, so much of the confusion arises from a failure to understand or appreciate the nature of science, how basic science applies to applied science, and the scientific literature on reading.

FIRST. The distinction between basic and applied science ought to be fundamental to any discussion of the science of reading. Basic science in this context refers to the cognitive processes that enable reading. It is descriptive. Applied science in this context refers to helping people learn to read, *given a particular goal for what it means to be a successful reader*. Applied science is normative. It entails goals that are not determined by science.

This distinction is analogous to the difference between the basic sciences of physics and materials science and the applied science of architecture. The latter draws on the former to help an architect predict whether a building will stand, but the sciences don't tell you how to design a building. It can't, because designing a "successful" building requires knowing its function: how many people will the building hold? What will people do there? Do you care what the building looks like? What's your budget?

It may first appear that goals couldn't vary that much among educators—we want kids to read. But goals actually run throughout education decisions. What do you do if a practice facilitates fluency, but prompts a modest decline in reading attitudes? Or consider whether every child should become a good reader of content intended for "the intelligence layperson." Committing to that goal commits one to a broad content curriculum, and an attendant reduction in opportunities for students to pursue personal interests in depth.

The NEPC statement conflates basic and applied science. That matters because different methods ought to be used when there's disagreement with either. If the disagreement concerns basic science, the scientific method is appropriate, but disagreements about application are often disagreements about goals, or the collateral effects of pursuing goals, and therefore ultimately about values. For example, the report suggests that policymakers should "acknowledge and support that the greatest avenue to reading for all students is access to books and reading in their homes, their schools, and their access to libraries (school and community)." What goal does "greatest avenue to reading" refer to? That children will read more? That children will improve fluency? Gain vocabulary? That children will be able to read more challenging texts? These are not the same outcomes, and in fact there is a robust research literature on the extent to which access to books serves any of these goals.

Or take this recommendation " [Federal or state legislators] Should adopt a wide range of types of evidence of student learning." To what end? To what purpose is the evidence of student learning to be put? To make book recommendations for leisure reading? As a high school graduation requirement? Elsewhere the report mentions student portfolios positively. One of my children's school uses portfolios to help children take ownership and pride in their work and, although there's no evidence it helps in this way, I kind of like that they do. On the other hand,

there's ample evidence that portfolios are very poor in terms of predictive validity for future school outcomes (e.g., grades and graduation).

Most of the recommendations in the report are like that. They end up being empty because they tell you what to do, but they don't specify what outcome they hope the recommendation will achieve.

SECOND. The authors of the report either don't understand how science works or are trusting that the reader doesn't. They write "The truth is that there is no settled science of reading. The research on reading and teaching reading is abundant, but it is diverse and always in a state of change." On the one hand, that's science, folks. Knowledge from science is always understood to be contingent, and we use the best model we have (of reading or whatever else) as we're working towards the next, better model. Even though an existing model may be *known* to be flawed, it may nevertheless be a close enough approximation that can be usefully applied.

But on the other hand, that's not the conclusion the report invites. Rather, the suggestion is that we don't know anything about reading from a scientific point of view with enough certainty that it will be useful in education. This claim doesn't hold up to even passing familiarity with the literature ([Here](#) and [here](#) are a couple of good undergraduate textbooks on the basic science of reading. Or what the hell, read [my book](#).) When it comes to application of science, what we know is less certain, but we still know a great deal. ([This volume](#) will get you started.)

To indicate that there is controversy and no settled science, the report cites contrarian scholars like Steven Krashen and Jeffrey Bowers. But again, if you have any familiarity with science, you'd know this is not a sign of unusual discord in the scientific community. There are *always* people challenging the mostly-accepted view. That's part of the process. Very occasionally these outsiders are vindicated and an extremely different model becomes the norm. Occasionally their criticisms lead to a moderate adjustment of the accepted model. Most often these challenges prompt those taking the central view to provide better evidence and to be more rigorous in their thinking.

THIRD. The NEPC report commits the ivory tower blunder of recommending an ideal, and ignoring realities on the ground. For example, the report says

"This "balanced literacy" approach, which stresses the importance of phonics and of authentic reading – and which stresses the importance of teachers who are professionally prepared to teach reading using a full toolbox of instructional approaches and understandings – is now strongly supported in the scholarly community and is grounded in a large research base."

We might note that balanced literacy is said to be grounded in a large research base. But presumably not scientific research, because there's no settled science. So what research? It goes unnamed.

To return to the main point, the fuel behind the current controversy is NOT that anyone thinks that balanced literacy, as described here, is a bad idea.

Rather, journalists have been reporting as true what has been a sneaking suspicion of edu-pundits for about a decade: (1) that one component of a balanced literacy classroom—phonics instruction—is being poorly taught and/or getting little time and; (2) some balanced literacy programs include methods of instruction (e.g., multi-cuing) that applied research indicates is counterproductive and (3) 1 and 2 are exacerbated because some teachers are poorly prepared during teacher education, and because most commercial reading programs do little to facilitate solid instruction, and because administrators tasked with selecting reading programs sometimes know very little about reading instruction.

There's also a very real question of whether balanced literacy, even absent these problems, could be taught by any but a handful of the most experienced educators. The original idea was that each teacher would have a big toolbox of literacy education tools, and that children would be individually evaluated for which instructional tool would be just right at which time. It's a lovely vision—again, who would argue with that if all the tools are good?—but that individualized instruction represents an enormous challenge for any educator. We should probably be asking whether, even with top-notch teacher education and materials, that vision is realistic in classrooms and if not, what supports would make it realistic OR how we could modify it into something doable.

CLOSING. The NEPC didn't say "science doesn't matter." That would sound like climate change denial. But note too they didn't say "they've got the science wrong. HERE'S the way the science of reading really works." Instead they said "hey, this is all pretty murky and complicated...no one really knows what's right, it's all controversial, but those folks are pretending that they've got the science of reading figured out." The authors of this report try to render science irrelevant by claiming it's premature to apply it. This argument is undercut by their repeated demonstrations that they misunderstand science, the application of science, and the extant literature on reading.

Ironically, most of their recommendations *have nothing to do with science*. The report objects to policies meant to raise test scores in the short-term when doing so risks longer term harms. It objects to policymakers ignoring the impact of out-of-school factors (e.g., poverty) on student achievement. It objects to policymakers ignoring the expertise of educators when establishing policy.

If these are problems, they are a result of wrong-headed (in the NEPC's view) paths toward educational goals, or wrong-headed educational goals. They are not a direct result of reading science. Whoever wrote this report did not know enough science to see the difference.

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