An Informal Talk About Reading Education

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I Study

- Reading
  - How children learn to read
  - How skilled reading works
  - The brain bases of reading
  - Disorders of reading
  - Cross-linguistic differences in reading
I Study

- Language
  - How children learn a first language
  - How skilled language processing works
  - The brain bases of language
  - Disorders of language
  - Cross-linguistic differences in how languages are acquired, used, represented in the brain
Today: How Should Reading Be Taught?

- We know quite a lot about normal and disordered reading.
- The research has direct implications for controversies about how reading should be taught.
- But linking the research to educational practice is very difficult.
- Methods that have been used to teach reading for 20+ years are inconsistent with facts about how children learn, how reading works.
- Maybe we need to change them?
Reading: A Remarkable Invention

- Reading is so important it’s hard to imagine what civilization would be like without it.
- Yet, writing systems are a relatively recent invention: earliest around 2500 BCE.
- The early systems were primitive.
"Do you spell that with a bird or a tree?"
The Stupendous Advance
Was The Invention of the Alphabet
Around 1500 BCE
Three Reasons to Study Reading
1. Reading is a Complex Skill

- Uniquely human
- Not all people acquire it
- Not all cultures have it
- It’s one of the supreme achievements of human intelligence
- We need to understand it
2. Reading as a Research Tool

- People did not evolve the capacity to read.
- Rather, reading utilizes capacities that evolved for other purposes.
- It therefore provides a tool for studying:
  - Vision
  - Language
  - Learning
  - Plasticity
  - Memory
  - Thinking, etc.
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OECD Programme for International Student Assessment (PISA) 2000 study
3. Concern About Levels of Reading Achievement

- Disagreements about effectiveness of teaching methods
- Cultural factors that discourage literacy
- Government intervention: “No Child Left Behind Act”
Where Cognitive Neuroscience Comes In

- We ask: What does basic research have to say about
  - Skilled reading
  - How children learn to read
  - The causes of reading impairments
  - The effectiveness of instructional, remediation practices: what works and why
  - Brain bases of normal and impaired performance
Different Perspectives

- Educators
- Parents
- Politicians
- Cognitive neuroscientists
  - What does the science tell us?
The Reading Wars

- A long-running debate about how to teach reading
- Featuring
  - “whole language”
  - “phonics”
What is Whole Language?

- A philosophy-ideology
- Assumptions:
  - Reading involves **active construction of meaning**
  - Reader’s background + text = **reader-created meaning**
  - Yields “constructivist” approach
Constructivism

- Child *constructs* meaning out of experience
- Learning = constructing meaning and systems of meaning
- Learning is contextual: not isolated facts
- Leads to definition of reading as:
  - “a process of generating hypotheses in a meaning-making transaction in a sociohistorical context. As a transactional process...reading is not a matter of “getting the meaning” from text, as if the meaning were in the text waiting to be decoded by the reader.”
Constructivism

- Old approach: teacher is instructor
  - Teacher has knowledge, children don’t
  - Teacher facilitates transfer

- New approach: teacher is facilitator
  - Knowledge is valuable if it’s discovered, not taught
  - Teacher facilitates self-discovery
Sources for constructivism

- John Dewey, Jean Piaget, Lev Vygotsky, Jerome Bruner
  - Emphasis on the child’s active role in creating meaning
- Post-modernist doubts about objectivity
  - All knowledge is socially constructed
What Kind of Practices Does Whole Language Inspire?

- Emphasizes “literacy” rather than “skills”
  - In modern educational practice, “literacy” and “skills” are opposing poles!

- In practice:
  - Don’t emphasize direct instruction related to decoding words, learning connections between spoken and written language
  - Do emphasize familiarity with structure of texts, promote development of background knowledge, promote interest in reading
Like Learning a Spoken Language

- Whole language researchers emphasize similarity between *learning to read* and *learning to speak*
- Spoken language is not taught. No direct instruction.
- Rather, children are immersed in a rich linguistic context and pick up how to talk
- This is taken as the model for how to teach reading.
The Broccoli Theory

- How to get kids to eat broccoli:
  - Put it on their plates
  - Don’t force them to eat it
  - After a while, they get familiar with it and just start to eat it

- How to get kids to read:
  - Put it in front of them
  - Don’t force them to decode
  - After a while, they get familiar with it and just start to read
What’s the Problem?

- Are these assumptions valid?
- Is there relevant research?
- How well does this work in practice?
Imagine You’re a Drug Company

- You synthesize a new drug that you think should help relieve some condition
  - Your theory *says* it should work
- The drug will not be introduced until it’s tested
  - There are controlled clinical trials
  - The trials indicate whether the drug works, has side effects, etc.
  - Then and only then would it be introduced
How It’s Actually Done in Education

- Someone gets an idea
  - Often a Guru. Many Gurus in reading instruction.
  - Guru has brilliant insight about how children learn, how to teach reading
    - Their own personal theory
  - The idea may be personally promoted by the guru, with direct appeals to teachers
  - The idea is implemented on a vast scale, based on intuitions that it is good.
Whole Language was a massive, uncontrolled experiment, with millions of children as unwitting subjects.

No informed consent
No IRB approval
Eventually Relevant Research Was Conducted

- Mainly outside the educational establishment
  - Psychologists (in departments like ours)
  - Neuroscientists (using brain imaging)
- This research called into question basic assumptions of Whole Language approach
Basic Problem

- Learning to reading *isn’t like* learning a first language
- Most children don’t just “discover” how the system works
- They need instruction, particularly in the crucial transition phase
  - Kindergarten/grade 1
- Whole Language withheld this early instruction, on misguided theoretical grounds
Critical Research Findings

- Cognitive neuroscience research on reading indicates an important role for **phonology**
  - In learning to read
  - In remembering
  - In skilled reading
- It clearly indicates that mastering the systematic relationship between spelling and sound is crucial
- And so teaching methods should facilitate the acquisition of this knowledge
Critical Research Findings

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Why Is This Suggestion Controversial?

- Because methods that emphasize learning relationships between spelling and sound = “phonics”
- Methods used for teaching reading have discouraged explicit instruction in phonics
- Why?
Why Phonics Was Demonized

- It’s boring: “Drill and kill”
- It’s inefficient:
  - extra step: spelling-sound-meaning vs. spelling-meaning
  - Irregularities: have give said done was were his….
- There are better things to do
  - Immerse children in literacy activities that promote interest in reading; skill will follow
    - More interesting for teachers, too
But

- *It’s boring*
  - Dr. Seuss is not boring.
  - Phonics software is not boring.
  - If it’s important for children to learn, find creative ways to teach it.

- *It’s inefficient*
  - Reading by “phonics” is demonstrably impossible. Ask any computer. (Frank Smith, 1973)
    - I have such a computer program.
    - The irregularities are not that bad: they’re almost all short, high freq words; they aren’t arbitrary.

- *There are more important things to do*
  - The literacy activities would be more effective if the kid already had basic decoding skills.
Summary:

- A large body of “pure research” on reading suggests that mastering the relationship between spelling and sound is a critical step in learning to read.
- It follows that pedagogical practices need to facilitate this: phonics.
- But this conclusion is controversial.
  - Political football
  - Who is “progressive” or “conservative” in this crowd?
Educational Practices are in Flux

- Schools now advocate “balanced” approaches, mixture of different methods
  - Can these approaches be “mixed”?  
  - What does “balanced” mean?
- Many teachers are unprepared to teach phonics
  - They were taught that it was the wrong way to become a skilled reader
  - Responsibility shifts out of school, into home
    - Parental tutoring, computer software, Kumon, etc.
    - Will your child learn this from a teacher or a phonics toy that speaks computerese?
How Do Current Methods Play Out in Madison Schools?

- Here’s a school where the methods work well
Here’s a school where it works less well

Falk Elementary School
WRCT* - Grade 3 - READING
Advanced + Proficient
All Students in School Trend Data
Falk Elementary

Percent of All Students Enrolled

All Students in School

Shorewood School

- Student body
  - Shorewood residents
  - Eagle heights residents
- Education-oriented parents
- Many 2-parent homes
- Often 1 highly educated stay-at-home-parent, who is capable of tutoring
- Computers in the home
- Many can afford private tutors, if necessary
What about schools where...

- Student body
  - Lower SES
  - English not spoken in the home
- Parents with lower education levels
- Many single-parent homes
- Rarely 1 highly educated stay-at-home-parent
- Computers rarely in the home
- Extra tutoring not affordable
Falk School

Proxy for socio-economic status

Enrollment by Economic Status
Groups Arranged Alphabetically Left to Right
Falk Elementary
2003-04 Compared to Prior Years
Elem. Schools

Percent of Students Enrolled
- % Eligible for Subsidized Lunch
- % Not Eligible/No Data
Supplemental Programs?

- “Reading First,” component of NCLB
  - Provides supplemental funds
- MMSD received a $2 million grant under this program
  - Funds were used at 5 local lower-achieving schools
- Funds were GIVEN BACK after one year.
  - Some teachers were using “direct instruction”
  - = phonics
- Supt. Rainwater
  - declared this method inconsistent with MMSD curriculum
  - Said he’d rather give the money back than cede control to the Feds
  - And what happened to those kids who benefited from the extra help those funds provided?
So:

- Current curriculum depends on heavy input outside the classroom
- It’s assumed that parents can provide such input
- Some can, some can’t
  - Returning supplemental funds doesn’t help
- Curriculum will reinforce (increase?) inequities.
Why the controversy continues

- Paranoia about Federal government usurping local control over schools: Rainwater
- Teachers unprepared to incorporate phonics
- Potential to misinterpret findings re: phonics
  - Far-right wing embraces phonics as part of misguided, punitive “back to basics” movement
  - The research does not say that phonics is *all* that matters
- “Balanced literacy” is like the term “natural”: sounds good but can mean anything. Including “business as usual”
The Moral of the Story

- Teaching practices need to be based on sound theory and evidence about
  - The reading process
  - The effectiveness of different methods
- Seems uncontroversial, but it’s not standard practice
- Basic research, conducted at UW and in labs around the world, provides such evidence
- Educational practices need to reflect this
Not So Simple

- Emphasis on “evidence-based” practices seems uncontroversial (part of NCLB)
- But, who determines which evidence “counts”?  
  - Example: charter schools. Evidence that charter schools are underperforming. Will it have an impact?  
    - What if the results had been positive?  
  - Example: Superintendent Rainwater’s claim that MMSD reading program is “evidence-based”  
    - What he means is: our test scores are good  
    - Evidence based means: independent evidence that the programs are based on sound principles  
    - Moreover, what do the tests test?
My Opinion

- If you are lucky, your child will learn to read no matter what they do in school
- Some will just catch on
- Most will not; they need instruction
- Few teachers will provide this
-Parents better be prepared (and able) to step in