

Literacy is possible in the Health Science classroom!



PRESENTED AT NCHSE 2010
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Why focus on literacy?



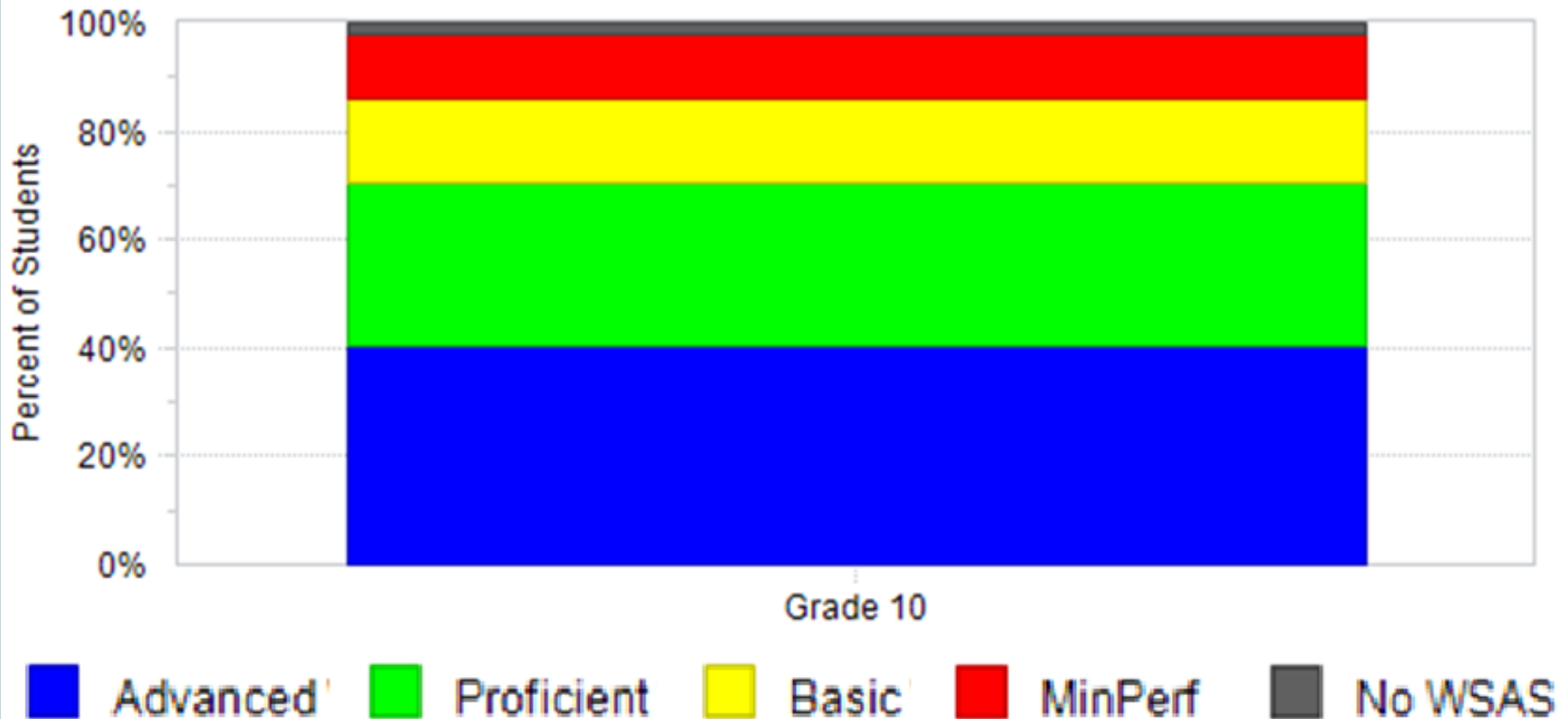
- Approximately 50% of the nation's unemployed youth (ages 16-21) are functionally illiterate with no prospect of a better future.
- 75% of today's jobs require at least a ninth grade education.
- Illiteracy costs the U.S. approximately \$20 billion per year.

~Research from the US Census Bureau, 2007

26% of East HS 10th grade read below proficient



Madison East HS 2009, 10th grade State Test scores – Reading





65% of 12th graders nationally
read 'below proficient'
as measured by the *National
Assessment of Educational Progress.*
~*Journal of Adult and Adolescent Literacy*



the
condition
of education 2004



INDICATOR 18

Remediation and Degree Completion

The indicator and corresponding tables are taken directly from The Condition of Education 2004. Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of the Condition of Education 2004 visit the NCES web site (<http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2004077>) or contact ED Pubs at 1-877-4ED-PUBS.

Suggested Citation:
Wu, J., Choy, S., Rooney, P., Prosser, S., San, A., and Tobin, R. (2004). The Condition of Education 2004 (NCES 2004-077). U.S. Department of Education, National Center for Education Statistics, Washington, DC: U.S. Government Printing Office.

U.S. Department of Education
National Center for Education Statistics
NCES 2004-077

The need for remedial reading
appears to be the most serious barrier
to degree completion

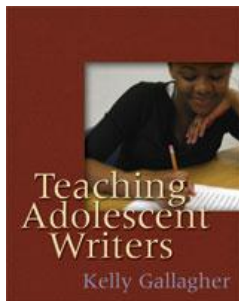
~*The Condition of Education 2004
(NCES 2004-077).*

Why is “Literacy” so hard today?



Many reasons, including:

- More information has been produced in the last 30 years than in the previous 5000 years combined.
- Available information is doubling every four years.



~From Kelly Gallagher's
Teaching Adolescent Writers

Tracking Reading Over Time



For the same group of East High students:

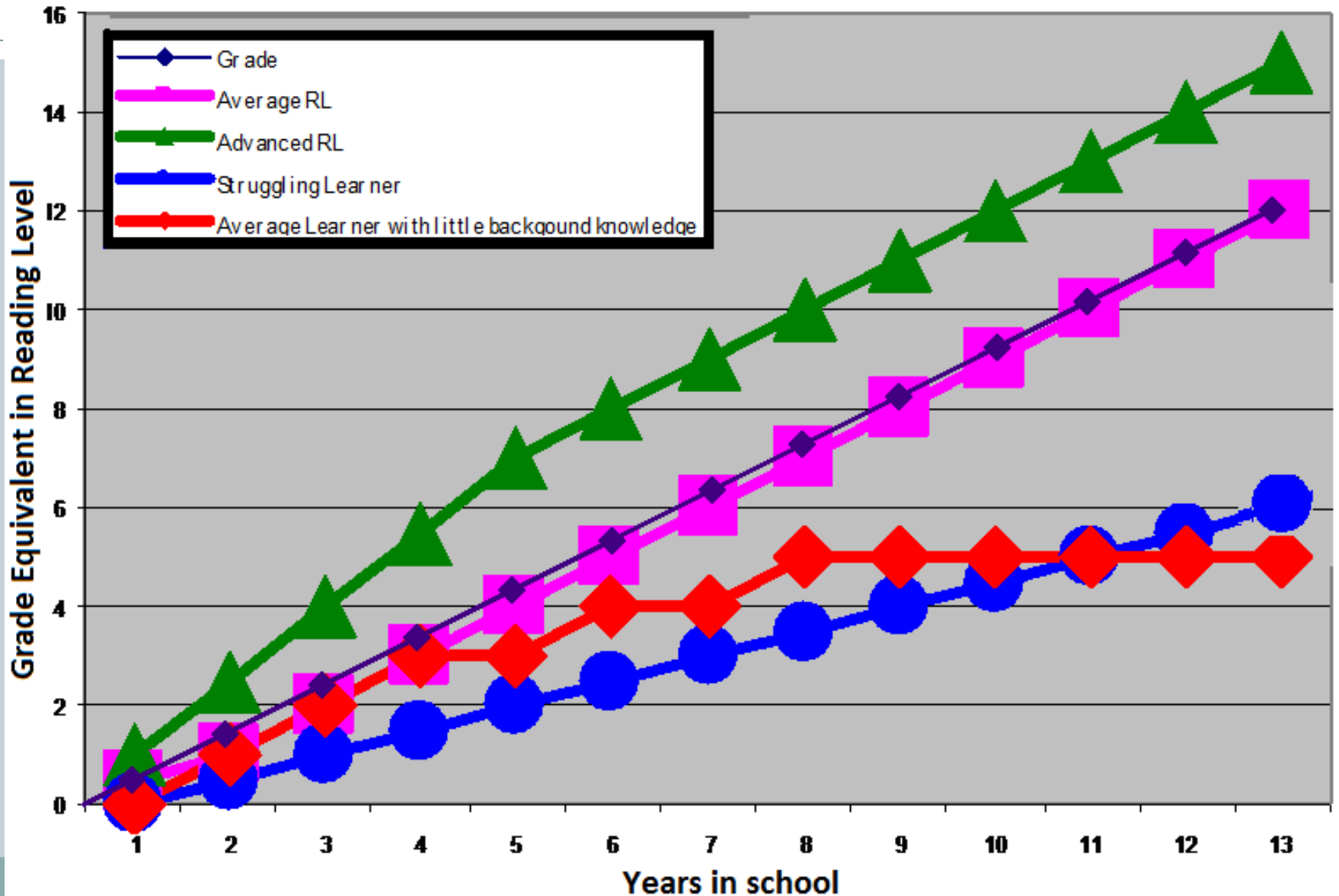
4th grade (2002) – 20% below proficient

8th grade (2006) – 17.5% below proficient

10th grade (2008) – 30% below proficient

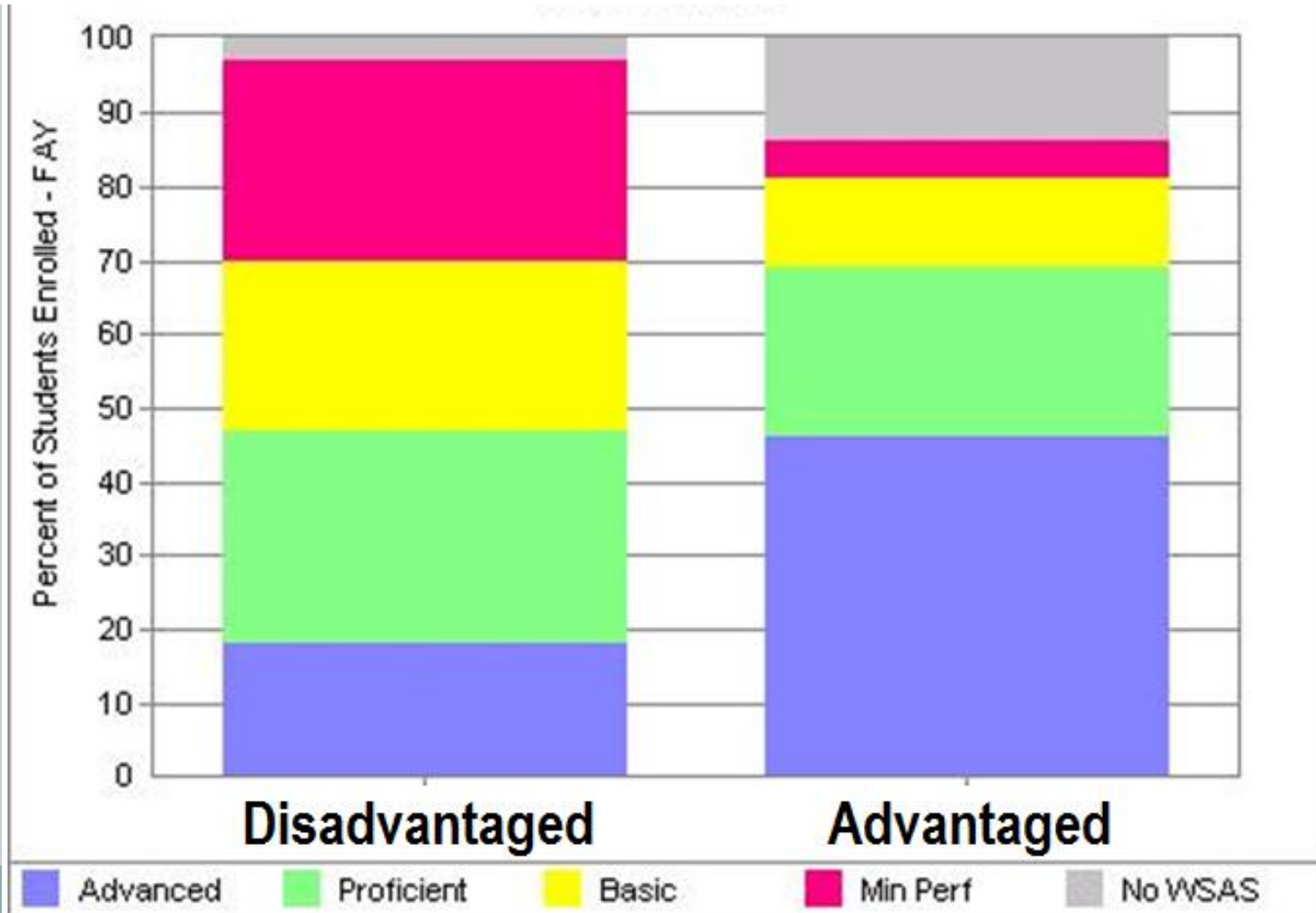
What's going on (or missing) in high school?

Student Reading Levels Over Time



Reading Scores by Economic Status

Madison East HS 2008, 10th grade State Test scores – Reading
By economic status



What is a proficient reader?

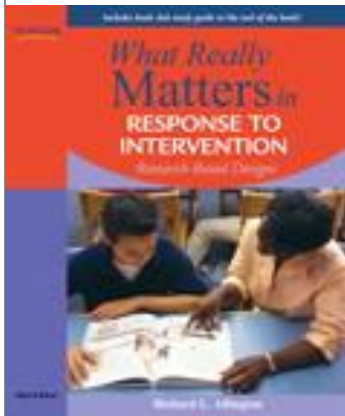
Successful Readers	Struggling Readers
Extensive vocabulary	Limited vocabulary
Read fluently with focus on comprehension	Halted reading with focus on sounding out
Break long words into meaningful parts (prefixes, suffixes, and roots) as they read	Have difficulty breaking long words into parts.
Many comprehension strategies for different types of reading	Approach every text the same way

~Effective Instruction for Adolescent Struggling Readers, 2008

So what can we do?

“...doing little or nothing, as is currently the case in too many school districts, is a good strategy for fostering dropping-out-of-school-behavior.”

~ From Richard Allington



What is Madison East High School doing?



- Conversations about the role of reading and writing in all classrooms
- Sharing assessment data on our current 9th and 10 graders to determine instruction
- Establishing building-wide research-based reading, writing and thinking strategies
- Collaboration for staff on direct instruction and literacy support
- Interdisciplinary literacy team

Interdisciplinary Literacy Team

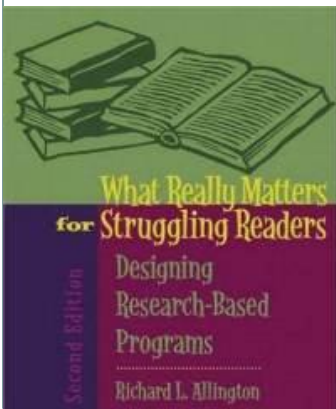


- **Physical Education**-Erin Walker
- **Special Education**- Karyn Chacon
- **Math**-Geeta Reddy
- **English Language Learners**-Amy Piaskowski
- **Social Studies**-Sarah Elmore, Pat McDonald
- **Science**-Erin Parker
- **World Languages**-Kathy Grimm
- **Technology Education**-Greg Rittman
- **Family and Consumer Sciences**-Dottie Winger
- **Learning Materials Center**-Pam Metzger
- **Literacy Coordinator**-Annie Potter

For struggling and proficient readers
to become advanced readers,
they need 3 things:

- 1. Texts they CAN read**
- 2. Texts they WANT to read**
- 3. And TIME to read those texts**
(90 minutes or more a day)

~ From Richard Allington's *What Really Matters
for Struggling Readers*



“Read chapter 2 tonight and answer the questions at the end of the chapter...”



This kind of reading activity

undermines all three

of these requirements
for most struggling
and even proficient readers.

**As a result, lousy readers remain
lousy readers!**

Choose to put your emphasis...



...on Choosing

Appropriate Texts

...on Building and Connecting

Background Knowledge (Front-Loading)

...on Acquiring Necessary

Vocabulary

...on Training students how to

Read for Understanding (Mental Modeling)

Text selection



- What do I want my students to walk away with? (Enduring Understandings)
- Is this the most appropriate text for this subject? What are my options?
- Is this the most appropriate text for these students? How do I know?

Evaluating the reading level:



- Lexiles
- Flesch Reading Ease
- Flesch-Kincaid Grade Level
- SMOG

What is a Lexile?



- Based on word frequency and sentence length
- Measures found at www.lexiles.com
- Achieve 75% comprehension (an instructional level) when reading at their lexile level

Flesch Reading Ease

Percent of adults that can read the text with ease

Writing Style	Average # words per sentence	Average Syllables per word	Type of Material	Grade level	Flesch Reading Ease Score
Very easy	8	1.23	Comic book	4th	90-100
Standard	17	1.47	Reader's Digest	8th	60-70
More challenging	21	1.55	Quality Magazine	10th	50-60
Difficult	25	1.67	Academic Textbooks	12th	30-50
Very Difficult	29	1.92	Scientific Journals	College	0-30

Flesch-Kincaid Grade Level



- Translates Flesch Reading Ease score into a grade level
(but doesn't give % comprehension)
- based on average sentence length and syllables per word

SMOG

(Simple Measure of Goobledygook)



- Gives grade-level for 100% comprehension
- Counts polysyllable words (3 or more syllables)

Reading Levels in Health Science texts?

Diversified Health Occupations

by Louise Simmers
CENGAGE Delmar Learning

Flesch reading ease 32.6
Flesch-Kincaid grade level 13.1
SMOG Index 11.1
Lexile 1030L

Health Science Fundamentals: Exploring Career Pathways

by Cheesbro & Badasch
Pearson

Flesch reading ease 47.3
Feschman-Kincaid grade level 10.3
SMOG Index 12.0
Lexile 1010L

Introduction to Health Care,

by Mitchell & Haroun
Delmar

Flesch reading ease 49.6
Fleschman-Kincaid grade level 10.1
SMOG Index 12.4
Lexile 1100L

Code Blue, 2nd edition
by Richard E. McDermott
Treamus Books

Flesch reading ease 64.7
Feschman-Kincaid grade level 6.9
SMOG Index 8.1
Lexile 890L

Look for a text where. . .



- A reader can have a **successful experience** without frustration or boredom
- A reader can **read for understanding**
- A reader will be **sufficiently challenged** by vocabulary and syntax

The average Health Science textbook . . .

Grade	Reading Proficiency	Appropriateness
9th	Minimal	Frustration
10th	Minimal	Frustration
11th-12th	Minimal	Frustration
9th	Basic	Frustration
10th	Basic	Frustration
11th-12th	Basic	Frustration
9th	Proficient	Instructional
10th	Proficient	Instructional
11th-12th	Proficient	Instructional
9th	Advanced	Instructional
10th	Advanced	Independent
11th-12th	Advanced	Independent

Selecting Appealing Texts



1. Does it look inviting?
2. Does it Connect to Students?
3. Does it show Diversity?
4. Is the Organization straightforward?
5. Are there useful Learning aids?

Consider Alternative Reading



- Internet
- Magazines
- Newspapers
- Novels
- Graphic Novels (comic book style)
- Textbooks at varying reading levels
- Texts YOU read to learn about your subject

How do we “hook them” and connect to what they know?



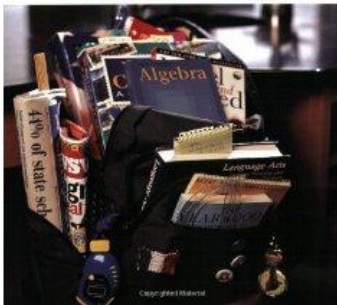
Most can sound out the words, but they don't understand what they've read

They don't have prior knowledge to understand the topic they are reading about

Harvey Daniels and Steven Zemelman

Subjects Matter

Every Teacher's Guide to
Content-Area Reading



~From Daniels and Zemelman's *Subjects Matter: Every Teacher's Guide to Content Area Reading, 2004*

“Your first decision is to choose the size you desire. Once you have made your selection, examine the general shape to determine where to start. The initial incision is always at the top, and you should continue until you can lift it cleanly. The removal of the interior portion can be fun, although some people regard this as the least enjoyable aspect. Once the shell is empty, you can begin to craft a personality. Some prefer a forbidding likeness, while others follow a more humorous direction. Finally, arrange for a source of illumination. Enjoy your results while you can, for your work will soon begin to sag.”

Front-loading Strategies



- Skim
- Question
- Predict content
- Predict meaning of new vocabulary
- Visualize
- Set purpose
- Brainstorm, cluster, web, fast-write, list

A Chapter “Tour Guide”



Invite the students to “skim” the chapter with you before they begin reading

- Identify important features and the big picture . . .
- Show how organization points out key concepts
- Pre-sort new vocabulary

(Essential? Good to know? An extra challenge?)

- Highlight useful visuals and learning aids

The essence of reading is thinking



It's all about making the connections to background knowledge ...

- **Text – to – Self (T-S):** connections with personal experiences
- **Text – to – Text (T-T):** connections with other text
- **Text – to – World (T-W):** connections with the world around them

What connections can you make?

Something was lodged in her windpipe. As I probed with my gloved fingers, I discovered that it was a piece of gum.

Normally, this wouldn't be odd, except that I found it in a cadaver I was dissecting as a first-year medical student.

Cadavers are preserved hulls of bodies, donated remains

Doctors-to-be become acquainted with them in anatomy classes. To us, they aren't people. We learn to depersonalize our cadavers, to think of them as structures and tissues, not as human beings. And in med school, they're used to teach us anatomy, not how to find the cause of death.

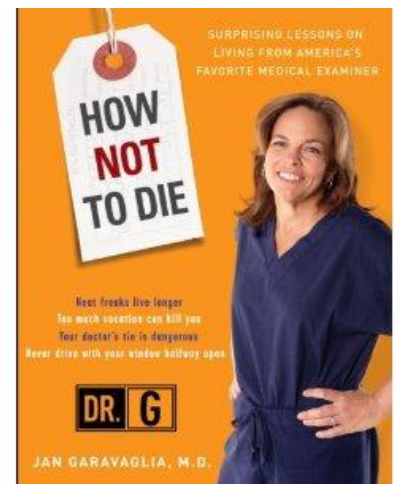
Cadavers don't usually give up clues. That's not their job.

But, when this one died, she was chewing gum. This made me curious.

How did she get to this point? Where did she come from? How did she die? I started asking if anyone could get me some history on my cadaver.

The body, it turned out, was of a nun who died suddenly of cardiac arrest while chewing gum.

And so began my fascination with how people die.



Students who frontload:



- **Expect connections** in a reading with what they already know or have experienced.
- Are conditioned to **make predictions**, then read to confirm or reject their predictions.
- Are more likely to **search for main ideas**, rather than wandering aimlessly

Pre-teaching vocabulary . . .



Can have a HUGE effect
on reading comprehension and
accessing information in difficult
texts for all levels of readers.

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(Essential? Good to know? An extra challenge?)
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Essential Concept
terms:

Licensed
Certified
Registered
Accredited
Scope of practice
Career ladder

Important for
Understanding terms:

Therapeutic
Diagnostic
Informational
Environmental
On-the-job training
Vocational training
Integrity
Bachelor degree
Doctoral degree
Technician
Assistant

Good to Know terms:

Manual dexterity
Holistic
Conduct
Biases
Efficiency
Conscientious
Consequences
Integrity
Dependable
Courteous
Cost-conscious
Problem-solving process
Opinions
Assessment
Objective
Subjective

What does it take for vocabulary to stick?

Use multiple modes of learning!

- Speaking
- Writing
- Drawing
- Singing
- Creating
- Performing
- Demonstrating...



Essential elements or examples

- *Written*
- *Violates privacy*
- *Hurts reputation*

Opposites or non-examples of the term (what it isn't)

- *Nice*
- *Compliments*
- *Public knowledge*

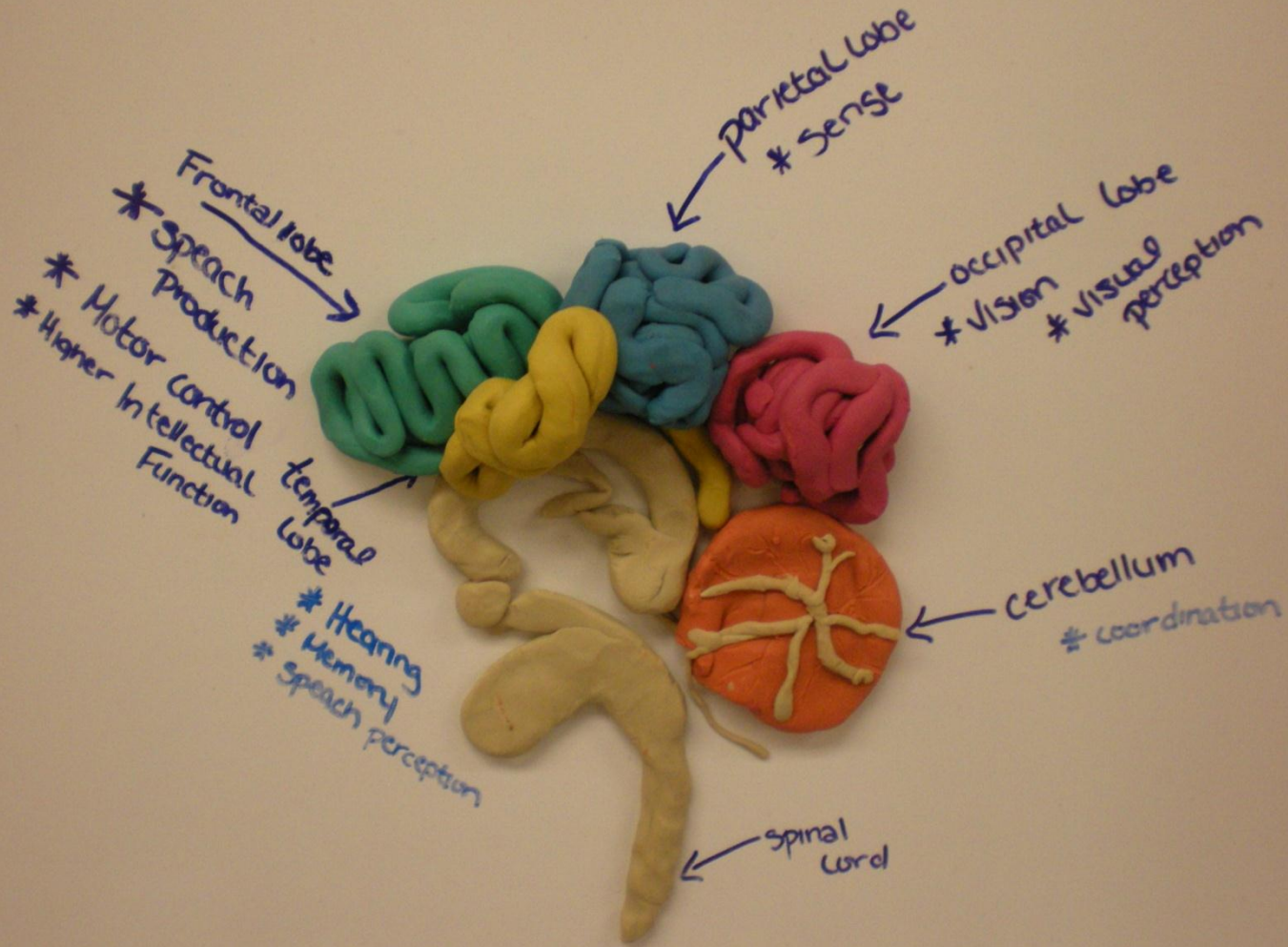
Libel

- *Defamation*
- *slander (spoken)*
- *liable*

Other words that relate to this term (shared word part, similar meaning). . .



Draw a picture to represent this term or Use the word in a meaningful sentence.





Hi, I'm Don.
I'm your
Director of Nursing!

Use **mneumonics** and humor
to remember terms and abbreviations . . .

-ectomy

exit Tommy



surgical removal

Dean Vaughn's Audionyms
are visual, auditory, and memorable !

dacry = da cry place



oto = o t o = ear

“Proximal is approximately here,
Distal is more distance away”


WORD SORT

Hospital
Psychiatric
Ambulatory services
Long-term care facilities
Nursing Homes
Skilled Nursing Facility
Intermediate Nursing
Care Facility
Assistive Living
Residence
Continuing Care
Community
Home health care
Outpatient
Hospice

Complementary Therapies

Holistic Medicine
Osteopathy
Chiropractic
Massage Therapy
Homeopathy
Homeopathy

Supernatural
Pandemic
Monks
Quackery
Quarantine
Dissection
Hygiene
Vaccination
Baby Boomers



System

Input Throughput Output
Feedback loop
Environmental constraints



Goals for Key Terms...



1. To Deeply Understand
2. To use Meaningfully in Real Ways
3. To Retain (beyond the test)

Mental Modeling

- Asks the teacher or reader to make their reading/thinking process transparent by “Thinking Aloud.”
- Demonstrates this process aloud to help poor readers learn these skills



A poor reader's mental model. . .



- I hate reading!
- This is stupid!
- It takes me so long to read something.
- Don't call on me, I'm embarrassed to read.
- I just seem to get stuck when I try to read a lot of the words in this chapter.
- Reading through this book takes so much energy, I can't even think about what it means.

Highly skilled readers do the following unconsciously:



- Build context or use prior knowledge.
- Ask Questions ?????
- Create Sensory Images
- Draw Inferences
- Determine What Is Important
- Synthesize New Information



~ Six Traits of an Effective Reader

The process:



1. Model your thinking aloud, showing that effective learners use purposeful questions (it isn't accidental!)
2. Include students in your dialogue about thinking
 - “Tell us how you figured that out”
 - “What were you thinking. . .”
1. Focus student-to-student discussions on what strategies and content they found most important
 - “How did you decide that was the right answer?”
2. Ask students to reflect on their own thinking in journals, 2-column notes, etc.

What will you do to improve literacy in your classroom?



...Choosing **Appropriate Texts**

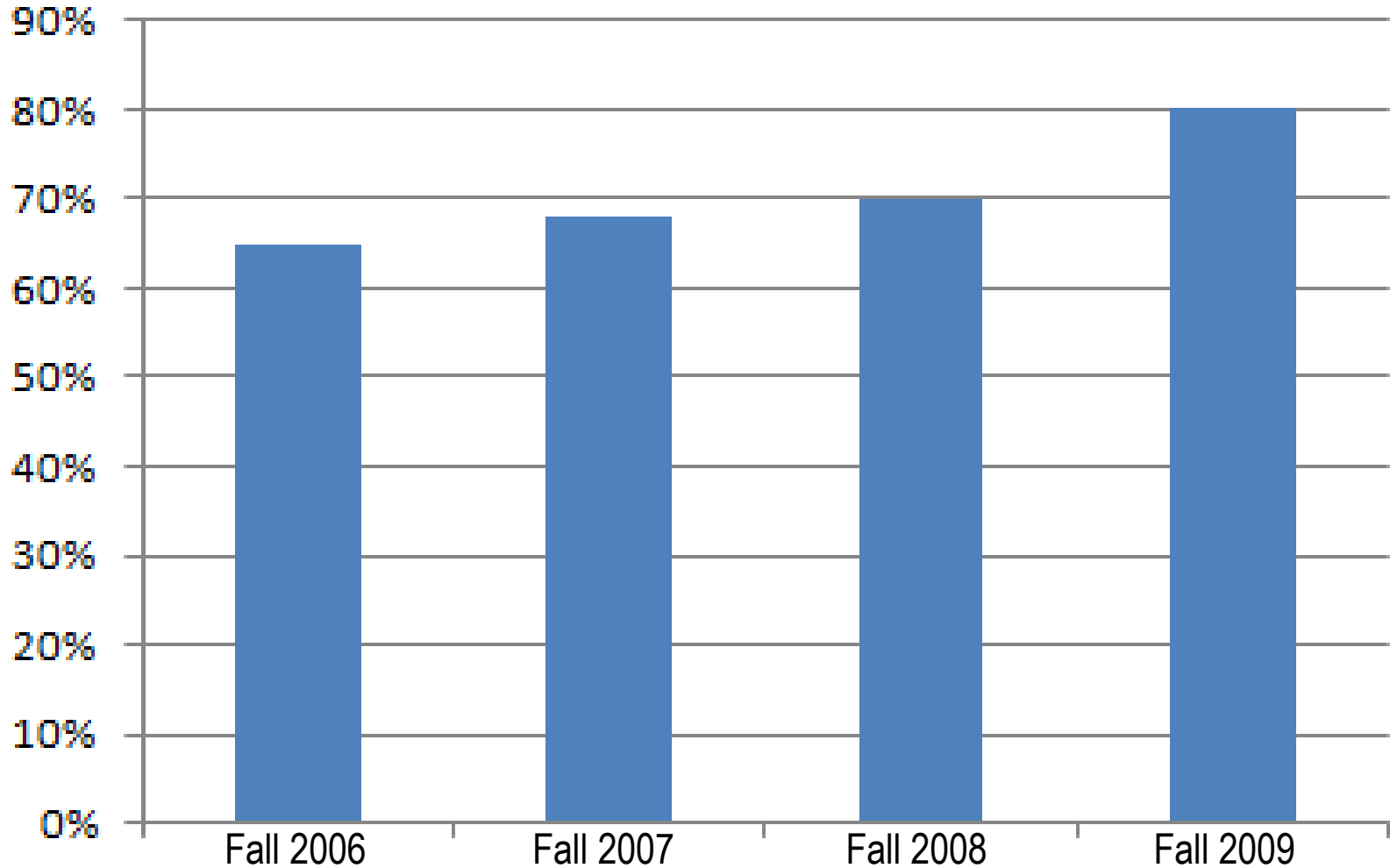
...Building and Connecting

Background Knowledge (Front-Loading)

...Acquiring Necessary **Vocabulary**

...Model how to **Read for Understanding**

How much can it benefit YOUR students?



East High 10th graders Proficient on State Reading Test

Recommended Reading



- “Integrating Comprehension Instruction into Content Learning” by Doug Buehl (2008)
- “Strategies for Boosting Vocabulary Learning Across the Curriculum” by Doug Buehl (2007)
- “The Principles of Readability” by William DuBay
<http://www.impact-information.com/impactinfo/readability02.pdf>
- “Effective Instruction for Adolescent Struggling Readers” by Murray, Wexler, Vaughn, Roberts, Klingler Tackett, Kosanovich (2008)

Questions? Dottie Winger at Dwinger67@yahoo.com