

# Update on the Center for the Study of Adult Literacy

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#### **Advisors**

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- Ms. Karen Kimball, Cobb County Adult Education Center
- Dr. Ryan Hall, Literacy Action, Inc.

#### **Partners**

- Texas Institute for Measurement and Evaluation Statistics (TIMES)
- American Institutes for Research (AIR)



## **Mission**

CSAL is committed to understanding the reading-related characteristics that are critical to helping adult learners reach their reading goals and to developing instructional approaches that are tailored to adult learners' needs and interests.



# **CSAL Projects**

- Explore the reading skills as well as the underlying motivational and cognitive attributes of adult learners.
- Refine and develop a multiple-component reading curriculum that includes a web-based e-tutor with conversational agents.
- Test the reading curriculum.
- Supplemental studies.
- Dissemination activities.



# Cognitive and Motivational Functioning Studies



# **Testing**

#### **500 Adult Literacy Students**

- 250 in Toronto, 250 in Atlanta
- Reading between 3.0 and 7.9 grade levels
- Non-native speakers and native speakers





## **Tests**

#### **37 Tests and Surveys**

- Phonology
- Morphology
- Decoding
- Word Reading
- Fluency
- Vocabulary
- Written Comprehension
- Oral Comprehension
- Memory
- General Information/Academic Knowledge
- Reasoning
- Motivation, Computer Familiarity, Demographics



# **Preliminary Demographics**

(n = 252)

- 64% female; 87% native speakers
- Average age: 37 with range of 16-70
- 10% Hispanic/Latino
- 65% Black; 21% White
- Highest education attained:
  - Less than 7<sup>th</sup> grade: 6%
  - Grades 7-9: 55%
  - High School Diploma: 22%



# **Preliminary Findings**

(n = 252)

- Most skills at the 3.0-5.9 grade equivalency levels
- The highest grade equivalency score: TIWRE (7.1 GE)
- The three lowest grade equivalency scores were found in:
  - Word Attack (3.1 GE)
  - TOWRE Phonemic Decoding (2.5 GE)
  - Memory for Words (2.4 GE)



## **Preliminary Findings (n = 252)**

#### Of 435 correlations, only twelve were correlated at or above .70

Tests	r value
WJ General Information & WJ Picture Vocabulary	.859
WJ General Information & WJ Academic Knowledge	.849
WJ Academic Knowledge & WJ Picture Vocabulary	.839
TOSCRF & TOSWRF	.799
WJ Letter Word ID & TIWRE	.785
WJ Word Attack & TOWRE Phonemic Decoding	.768
CASL Meaning from Context & CASL Inference	.739
CASL Inference & CASL Nonliteral Language	.730
WJ Letter Word ID &TOWRE Phonemic Decoding	.729
WJ Letter Word ID & WJ Word Attack	.723
WJ Passage Comp & WJ Academic Knowledge	.706
CELF Word Classes & CELF Word Definitions	.703



## **Examples of Additional Studies**

- Interest and Persistence in Reading
- Adult Literacy Practitioner Survey
- Affective Themes and Attributions
- Digital Literacy Skills Assessment
- Comparisons Across Different Samples



# Preliminary Findings from NorthStar Digital Literacy Assessment

(an adapted version) (n= 105)

#### **Strengths**

#### **Computer Functionality**

- Click on the picture of a mouse. (98%)
- Click on the keyboard. (96%)
- Click on the jack where you plug in headphones. (94%)

#### Program Use

In the picture below, drag the document called "September Calendar" into the Recycle Bin. (93%)

#### Internet Use

Click on the hyperlink. (88%)



# Preliminary Findings from NorthStar Digital Literacy Assessment

(an adapted version) (n= 105)

#### **Difficulties**

#### Program Use

Open the Word document in the taskbar. (37%)

#### Internet Use

Type the web address in the address bar below: www.hotmail.com. Then, click NEXT. (37%)

#### Filling Out Forms

Choose the most secure password from the list below.
 Type the password in the "Re-enter password" box.
 (18%)

# Preliminary Findings from One Comparison Study

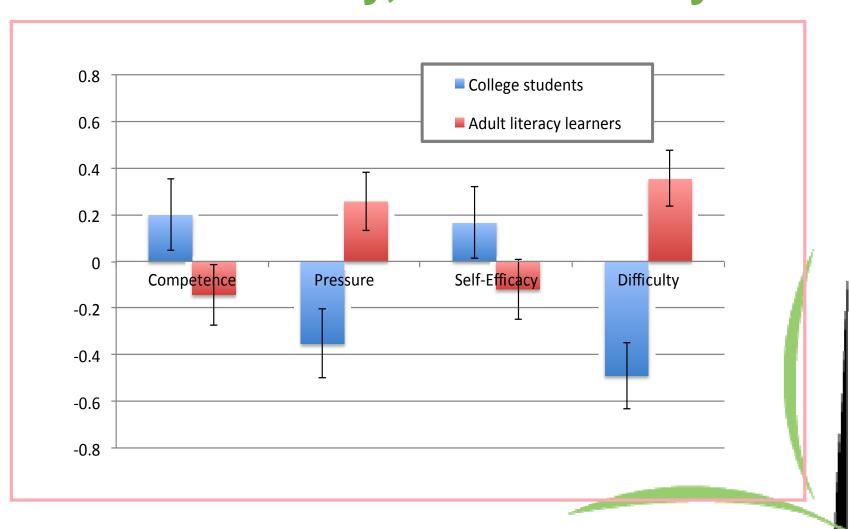
#### **Participants**

- 278 CSAL Participants
- 167 College students:
  - 1st generation university students,
  - economically disadvantaged,
  - reading at adult levels (WJ Reading Fluency SS = 102.1)

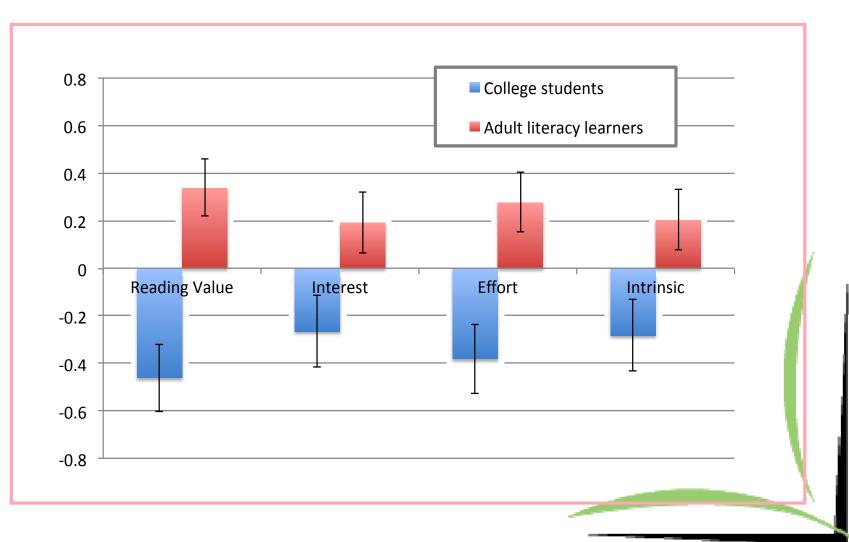
#### **Motivation Surveys**

- Expectancy Value Questionnaire (EVQ: Eccles & Wigfield, 1995; 2002)
- Intrinsic Motivation Inventory (IMI: Ryan, 2002)
- Reading Motivation Scale (RMS: Guthrie & Wigfield, 2009)

# Competence, Pressure, Self-Efficacy, and Difficulty



# Value, Interest, Effort, and Intrinsic Motivation



# Curriculum



# **Curriculum Components**

- Human instruction in decoding
- Human instruction in comprehension
- AutoTutor
- Independent Reading



# Adult PHAST PACES CSAL's Teacher-Led Group Instruction Programs

#### **Adult PHAST Program**

- Flexible strategies for decoding unfamiliar words
- Addresses gaps in letter-sound knowledge (igh, ea, ie)
- Identifying multisyllabic words with greater ease

#### **Adult PACES Program**

- Strategies to predict author's purpose, acquire new vocabulary, and clarify confusion in text
- Promotes deeper comprehension through evaluating, elaborating, and summarizing from text
- Offers training in research and internet skills for learners at higher levels



# Adult PHAST Decoding Strategies

#### **SOUNDING OUT**

Filling gaps in letter-sound knowledge and basic decoding skills

#### **PEELING OFF**

Learning affixes and how to deal with multisyllabic words

#### **VOWEL ALERT**

Learning variable vowel pronunciations and vowel combinations



## Sounding Out Strategy Phonology Basics

#### Goal:

 Teach the phonological preskills necessary for successful strategy application (reading and spelling)

#### **Skills for monosyllabic words:**

- Letter-sound knowledge
- Blending and segmenting sounds
- Strategy steps and dialogue
- Application to text reading

#### Concepts:

- Consonant blends
- Vowel teams and consonant teams
- Silent 'e' rule and consonant teams rule

#### Worksheet applications:

Sound practice/dictation; word and sentence reading/dictation



#### **Vowels (always continuous)**

a e i o u \*w \*y

#### **Continuous Consonant Sounds**

f I m n qu r s v w x y z

#### **Stop Consonant Sounds**

b c d g h j k p t



## **Peeling Off Strategy**

#### Goal:

 Teach affix preskills necessary for successful strategy application (reading and spelling)

#### Skills for multisyllabic words:

- Identifying and articulating affixes
- Blending and segmenting syllables
- Strategy steps and dialogue
- Application to text reading

#### **Concepts:**

- Affix(es) can be 'peeled off' and root remains
- Multiple affixes must be connected
- Be flexible with variable affix pronunciations

#### Worksheet application:

 Prefix and suffix practice/dictation; word and sentence reading/dictation



## **Vowel Alert Strategy**

#### Goal:

 Teach learners to be flexible with single vowel and vowel team sounds for successful strategy application

#### **Skills for multisyllabic words:**

- Recognizing and articulating the variable sounds of single vowels and vowel teams—and c, g, gh, ch effects
- Consonant teams—tch, dge
- Strategy steps and dialogue
- Application to text reading

#### **Concepts:**

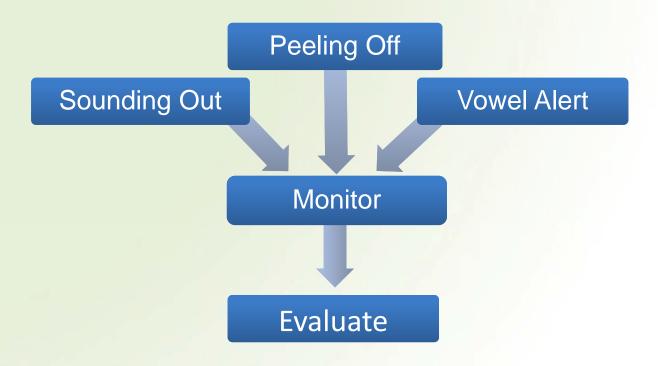
- Flexibility with variable vowel sounds
- c and g alert; gh and ch alert

#### Worksheet application:

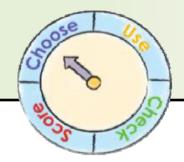
Variable sound practice/dictation; word and sentence reading/dictation



### **Using the Three Decoding Strategies**

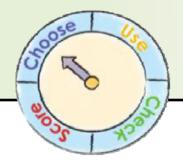


SELECT the best strategy
APPLY the strategy correctly
MONITOR each step - "How am I doing?"
EVALUATE the result - "That's a word I know. I did it!"



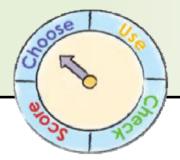
# backbreaking

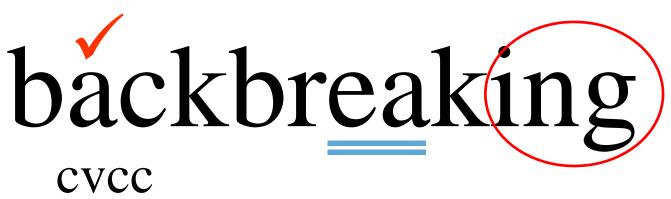




# backbreaking











# backbreaking

CVCC

bead head great



# Metacognition

- Self-talk and self-regulated learning
- Conscious awareness of strategy use
- Learner understands strategies, can name and describe them, knows when to use them
- Select, Apply, Monitor, and Evaluate
- Multi-strategic, flexible, and persistent
- Attributes success to strategy use





collaboration

application

orientation

correspondence

Workplace

references

apprenticeship

promotion

occupational



amortization authorization

mortgage recession

audit commodity

bank reconciliation revenue

# Adult PACES Comprehension Program

- P Predicting the Author's Purpose.
  - A Acquiring Vocabulary using Context Clues.
    - C Clarifying Common Sources of Confusion.
  - **E** Evaluating and Elaborating through Questioning.
- S Summarizing Important Information.

## **Lesson Anatomy**

## **Utilizing Gradual Release of Responsibility Principles**

#### **EXPLANATION**

• Clear discussion as to the skills and strategies that will be taught in the lesson.

#### **JUSTIFICATION**

• Discussing the utility and benefits of the skills and strategies taught.

#### MODEL EXAMPLE(S)

• Instructor lead demonstrations of the skills and strategies.

#### **GROUP EXAMPLES(S)**

• Instructor guided demonstrations where the instructor encourages correct responses and interjects as needed.

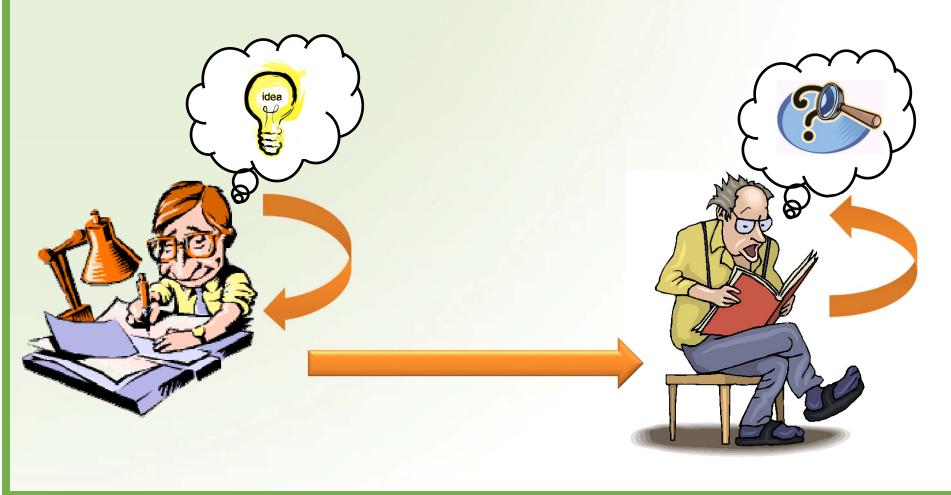
#### **INDIVIDUAL PRACTICE**

• Independent applications of the skills and strategies taught on a computer running the AutoTutor adult literacy computer program.

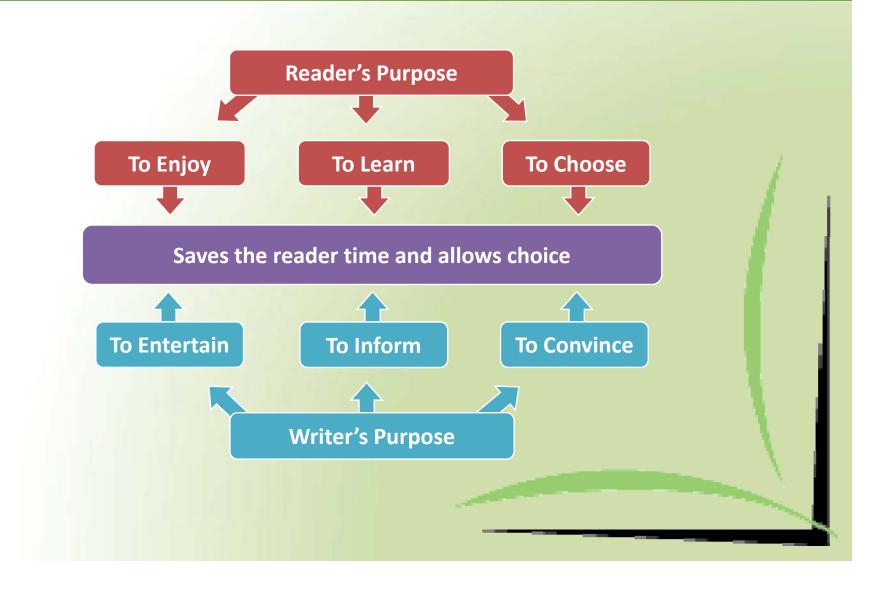


## Relating reader and writer

Reading is a conversation between the reader and writer. It is up to the writer to pass on information in a clear way, and it is up to the reader to engage with the writer's ideas and make sense of the information.



## The Goal of Predicting Writer's Purpose





### **Predicting Purpose using Text Signals**





Be alert for **Text Signals** and gather information to make good predictions.

center for the study of adult literacy



### **Acquiring Vocabulary**

#### **Affix Knowledge**

write <u>re</u>write

happy <u>un</u>happy

honest <u>dis</u>honest

do undo

#### **Punctuation**

- Student obligations: be on time, be prepared, be respectful.
- Kale (a leafy green vegetable) can help lower cholesterol levels and keep you healthy.
- □ The dip will be served with bagels/baguettes.
- Superfoods are nutrient-rich and lead to good health.
- Luxor, a city in Egypt, contains many magnificent temples.
- □ Vegan someone who does not eat animals, or anything from an animal.

#### **Word Type**

foreign words attaché

jargon hippocampus

proper names Sidney Poitier

abbreviations Mr. acronyms CNN

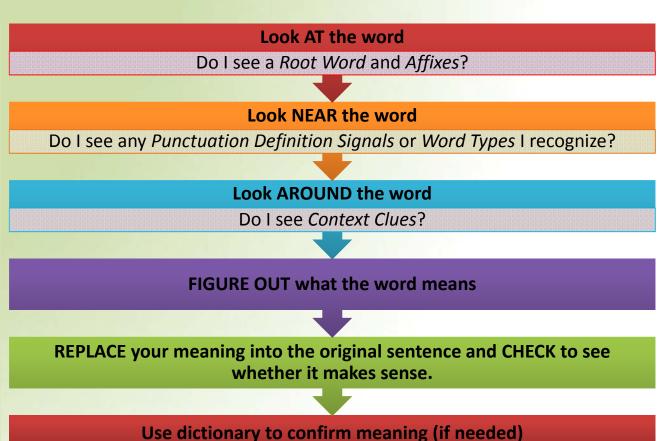
#### **Context Clues**

word definition signals other familiar words glossary visual cues



## **Acquiring Vocabulary from Context**

Acquiring
Vocabulary means
learning new words
as I read.



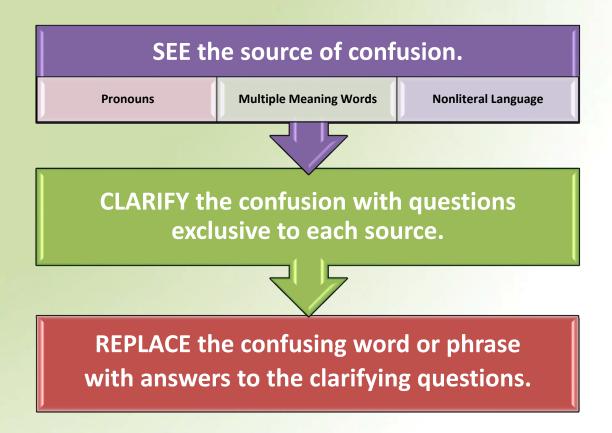


## **Common Sources of Confusion**

- Pronouns
- Unfamiliar words and jargon
- Multiple Meaning words
- Nonliteral language
- Contradictions
- Ambiguous words/phrases

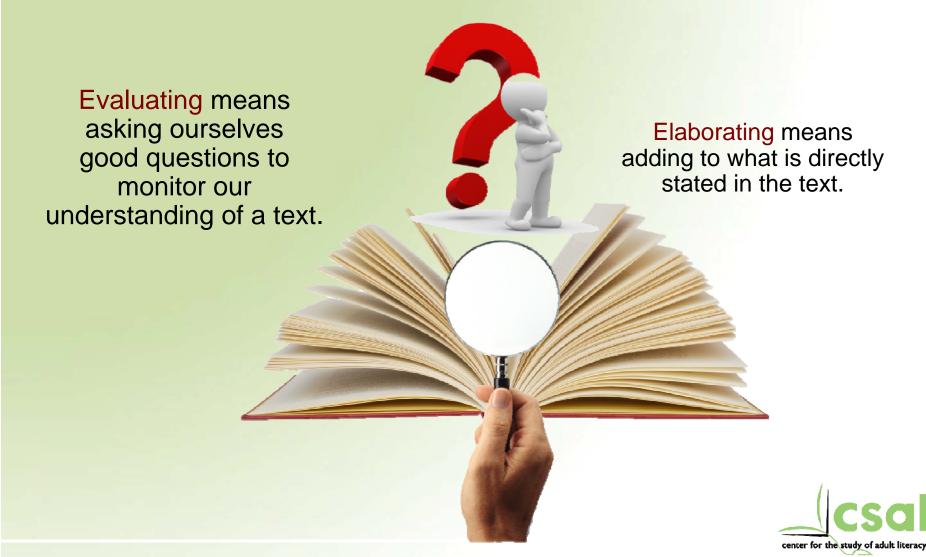


## **Clarifying Confusion with Questions**





# **Evaluating and Elaborating Through Questioning**



# E

### **Evaluating and Elaborating Through Questioning**

**Evaluating Our Understanding of Narrative Texts (First level)** 



Beginning	Middle	End
Who are the main characters?	What are the important events/actions in the plot?	<b>How</b> is the problem solved?
<b>How</b> would you describe them?	Why did the event/action occur?	
What are the character's motives?	<b>How</b> are other characters affected by an event/action?	
Where and When does the story take place?	<b>What</b> is the major shift in the plot? (Where the problem starts getting resolved.)	
What is the problem?		
What caused the problem?		

# Summarizing Narrative using Plot Graph



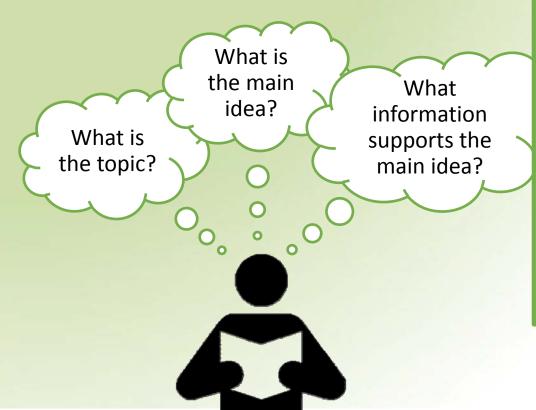
Title:

Beginning	Middle	End
Who are the main characters?	What are the important events/actions in the plot?	<b>How</b> is the problem solved?
<b>How</b> would you describe them?	Why did the event/action occur?	
What are the character's motives?	<b>How</b> are other characters affected by an event/action?	
Where and When does the story take place?	<b>What</b> is the major shift in the plot? (Where the problem starts getting resolved.)	
What is the problem?		
What caused the problem?		



### **Evaluating and Elaborating Through Questioning**

To evaluate our understanding of <u>informative</u> texts, we ask ourselves:



## Computers: Faster than the Speed of Byte



Computers are very valuable machine because the work so fast. In the time it takes to push a few buttons a bank manager can develop a mortgage payment plan for a potential home owner. Within seconds, telephone computers connect thousands of callers around the world. Long and difficult mathematical problems can be solved in milliseconds.

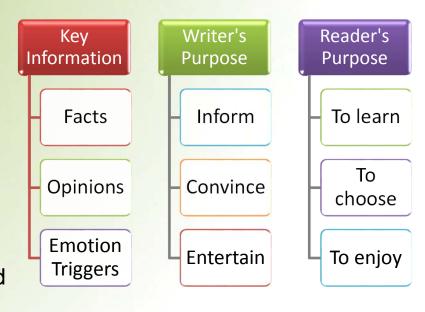


# S

## Informational, Persuasive vs. Narrative Text

#### Ways to determine text type:

- 1. Ask yourself 'Is this...
- "...telling me a story?"
- □ '...giving me information?',
- "...stating an argument?"
- 2. Look for Key information.
- Informative texts will be packed with facts.
- Persuasive texts will have both facts and opinions.
- Narrative texts will contain many emotion triggers.

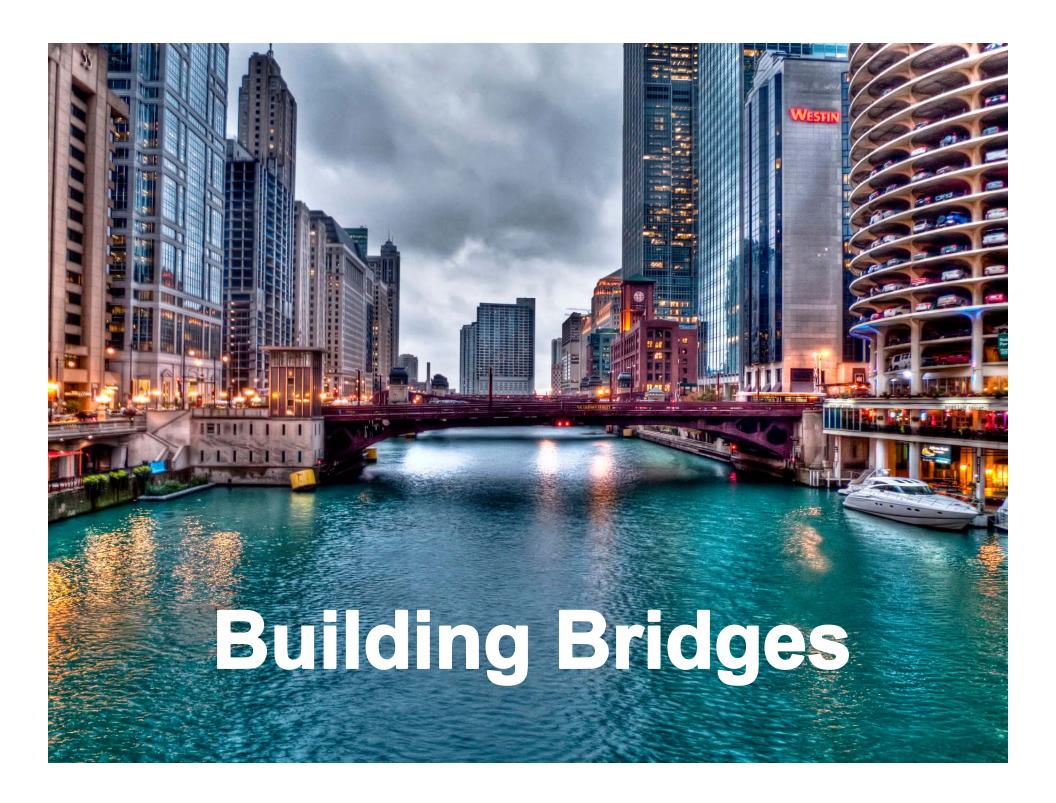




## Summarizing Informative and Persuasive Text Structures

- Statement and Explanation
- Problem and Solution
- Cause and Effect
- Compare and Contrast
- Description and Spatial
- Order: Time and Importance
- Procedural







### **Elaborating Through Questioning**

Elaborating means adding to what is directly stated in a text. To do this we ask questions that help us make inferences.

> • What is the writer suggesting here? Why is the writer telling me this? **Work It Out** this text? **Uncover the**

Message

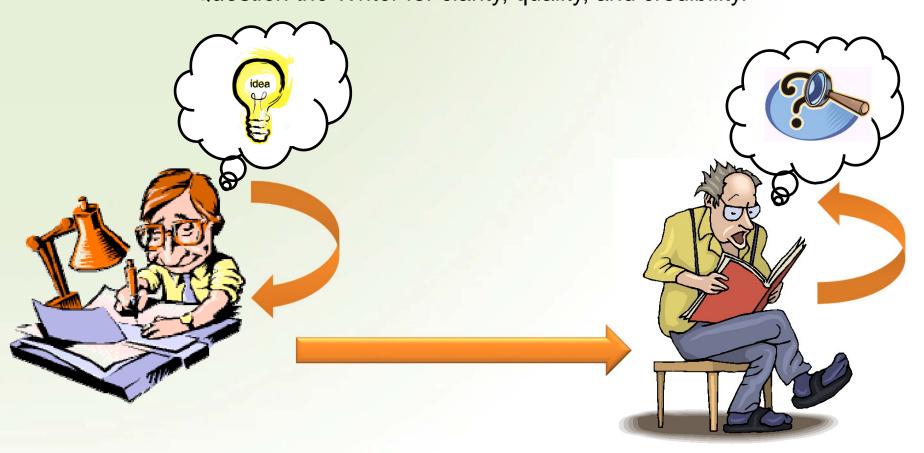
• What are we supposed to learn from

• What main messages is the writer trying to get across?



# **Evaluating the Author Through Questioning**

Reading is a conversation between the reader and writer. Sometimes, writers do a good job of explaining something, but other times, they do not. So as we are reading, we should *Question the Writer* for clarity, quality, and credibility.





### **Evaluating the Writer Through Questioning**

Sometimes, writers do a good job of explaining something, but other times, they do not. So as we are reading, we should **Question the Writer** for clarity, quality, and credibility.

## Check for Clarity, Organization and Quality

Does the writer explain this information or argument clearly?

How could the writer have explained things more clearly?

How well is the text organized?

How well are the ideas connected to each other? Does the text flow? Does the text make sense?

What are the flaws in this text?

How could the writer improve this text?

What are the strengths of this text?

#### **Check the Writer**

Who is the writer?

What are the writer's credentials?

Is the writer an expert?

#### **Check the Source**

Where did the text come from?

Is the text selfpublished or professionally published?

When was the text written?

#### **Check for Bias**

What is the bias towards?

Is the writer transparent about their bias?



### Research and Internet Navigation

### **URL Knowledge**

```
.com - commercial (i.e. dictionary.com)
```

```
.edu - education (i.e. csal.gsu.edu)
```

.gov - government (i.e. usa.gov)

.org - organization (i.e. wikipedia.org)

.net - network (i.e. slideshare.net)

.us – United States (i.e. vote.us)

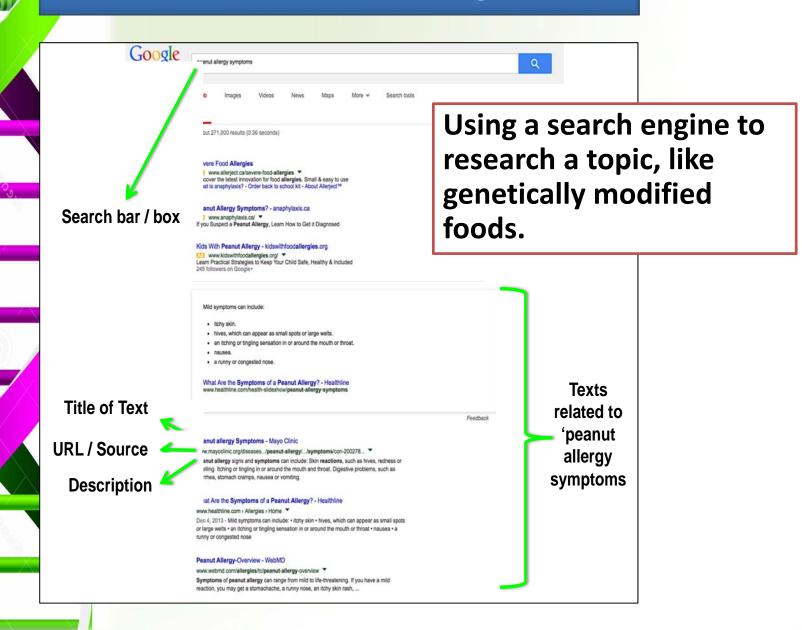
.ca - Canada (i.e. google.ca)

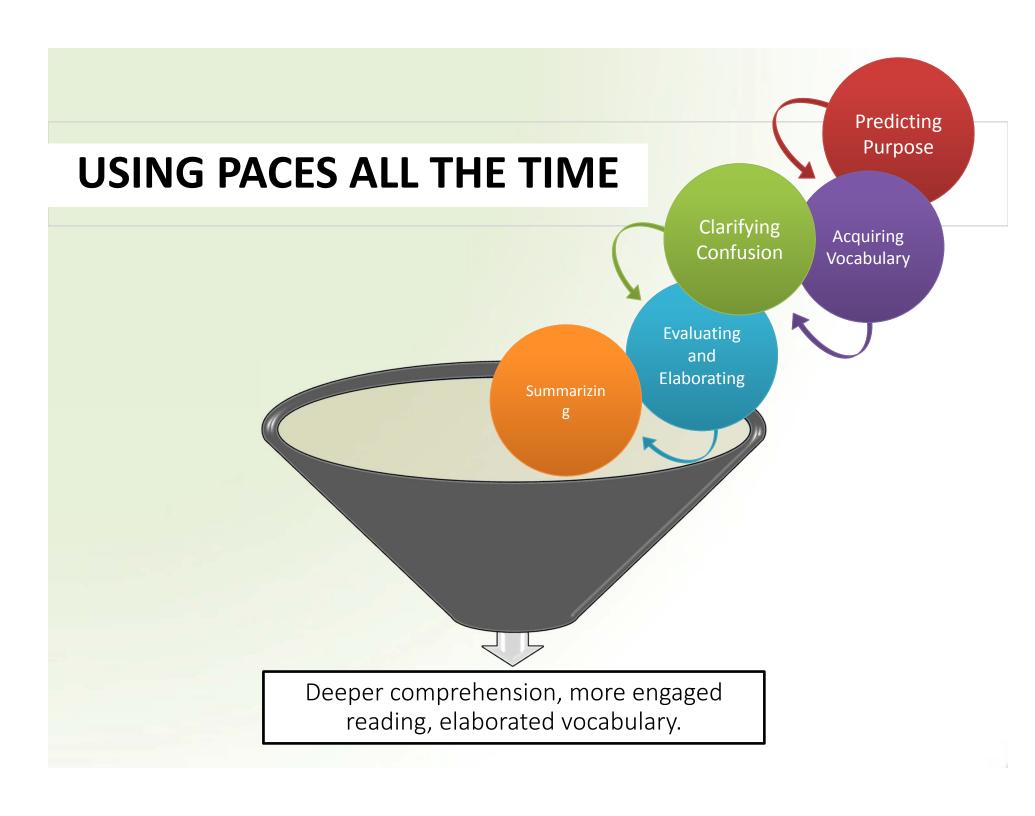
.uk – United Kingdom (i.e. google.co.uk)

.au - Australia (i.e. google.com.au)



### Research and Internet Navigation





## **AutoTutor Highlights**

#### Conversation Patterns

- Interacts with students by questioning, hinting, eliciting information, filling in gaps, correcting the student
- Direct and indirect feedback
- Intelligent conversational scaffolding

#### Multiple Agents (Trialogs)

- Human, student agent, and teacher agent
- Vicarious learning and interactive tutoring versus learning by teaching
- Tutoring modes: Helping the peer, game competition, and authentic contexts rather than schoolish drill

#### Evaluating and Responding to Student Contributions

- Advances in computational linguistics
- Content knowledge, skills, strategy use, emotions, motivation
- Individualized instruction by responding adaptively to the student's answers

#### Multiple Media

Practical Texts and Tasks for Adults



# Typing tutorial instructs students how to use a keyboard



# Scope and Sequence of PACES Adult Comprehension Program

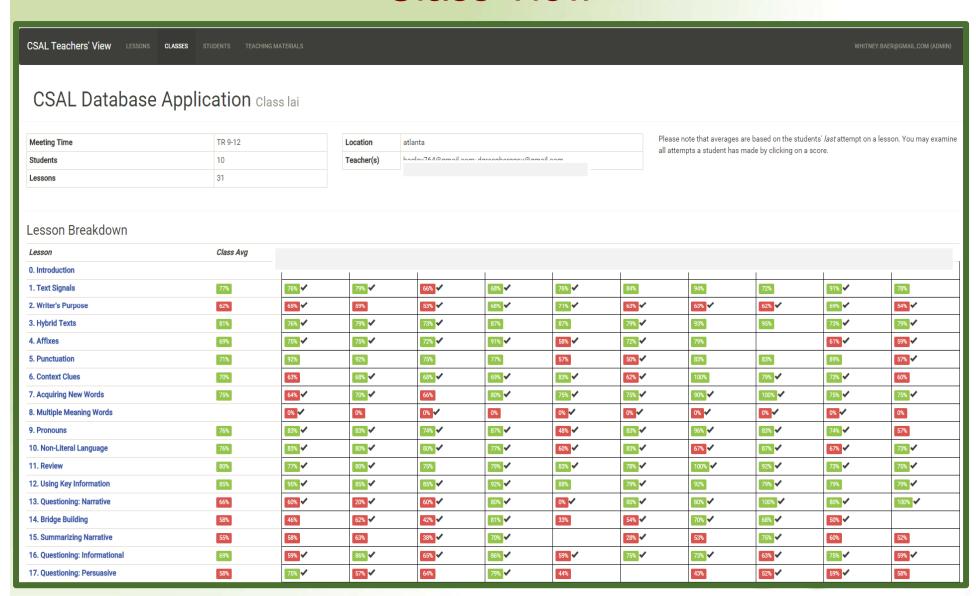
Lesson 0	Introduction to Program/Orientation
Lesson 1	Predicting Using Text Signals
Lesson 2	Predicting the Writer's Purpose
Lesson 3	Predicting the Writer's Purpose in Hybrid Texts
Lesson 4	Affixes
Lesson 5	Punctuation Pre Skills for Acquiring
Lesson 6	Word Types and Context Clues
Lesson 7	Acquiring Words Strategy
Lesson 8	Clarifying: Multiple Meaning Words
Lesson 9	Clarifying: Pronouns
Lesson 10	Clarifying: Non Literal Language
Lesson 11	Review (PAC)
Lesson 12	Differentiating Between Narrative, Informational, Persuasive Texts Using Key Information
Lesson 13	Questioning Strategy: Narrative Texts
Lesson 14	Bridge Building in Narratives
Lesson 15	Summarizing Narratives Using a Plot Graph

Lesson 16	Questioning Strategy: Informative Texts
Lesson 17	Questioning Strategy: Persuasive Texts
Lesson 18	Review of the Evaluating Strategy
Lesson 19	Summarizing: Statement and Explanation
Lesson 20	Summarizing: Problem Solution
Lesson 21	Summarizing: Cause and Effect
Lesson 22	Summarizing: Description and Spatial
Lesson 23	Summarizing: Compare and Contrast
Lesson 24	Summarizing: Time Order, Order of Importance
Lesson 25	Summarizing: Procedural
Lesson 26	Review of Text Structures
Lesson 27	Elaborating on Narrative Texts
Lesson 28	Elaborating on Informative Texts through Questioning
Lesson 29	Elaborating on Persuasive Texts through Questioning
Lesson 30	Looking at Documents/Question and Answer Structure

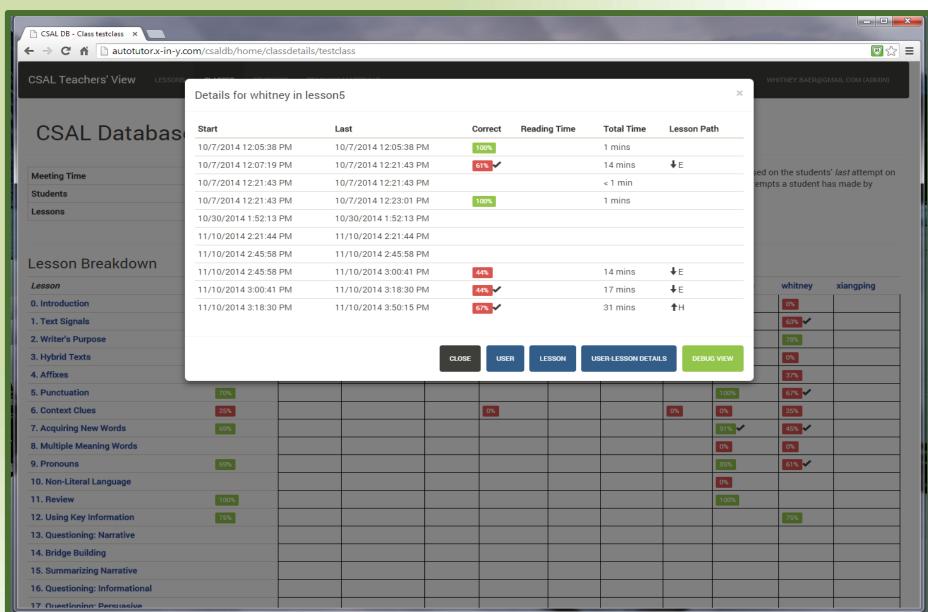
## Video



# Teacher's Access Page Database Class View



## Teacher's Access Page Database Student Details



# Iterative Development and Feasibility



## **Iterative Development**

- Lessons created
- Memphis, Georgia, and/or Toronto gave feedback
- Lessons revised
- Cycles of revisions until folks are happy
- Aspects of lessons tried on adult learners
- Cycles of revisions until folks are happy
- Eventually field testing!

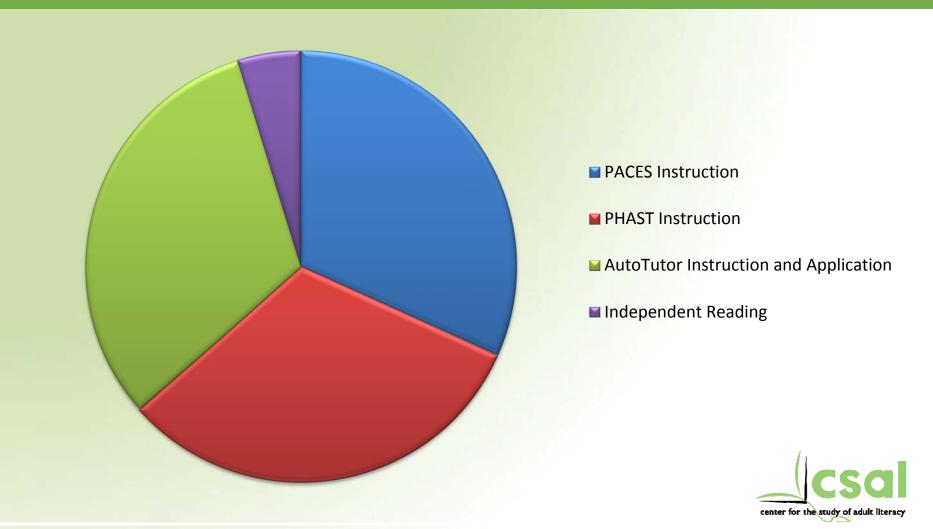


# Feasibility Studies Preliminary Demographics

- Started in January, with 32 in Canada and 20 in US
- Mean age 41 years, majority female, African
   American/Canadian, native speakers of English, non high school graduates



# Instructional Framework During Feasibility Study



## **Feasibility Anecdotes**

- "I love that we are learning the correct sounds of all the letters."
- "At the hospital, I was able to use my strategies to know how to find my way around."
- "I now know, how to know what to think about when reading something."
- "I love how the teacher on the computer talks to me about my answers."
- "Poor Jordan, he gets so many answers wrong-he needs to listen to what I say more often."

## **Examples of Lessons Learned**

- More time than expected needed on PHAST LESSONS
- Greater review needed on PACES lessons
- Enthusiasm for course content and focus greater than expected



## Dissemination



# Our Website http://csal.gsu.edu/



## **Future Conference Presentations**

**Artificial Intelligence in Education** 

June 22-26, 2015

Society for the Scientific Study of Reading

July 15-18, 2015

**ProLiteracy** 

October 14-17, 2015



## QUESTIONS

Use the chat feature in the lower right corner of the screen to submit your question to everyone.

### Can you see us?

To enlarge video, right-click on the video and click "Expand to Full-screen Mode".





