Update on the Center for the Study of Adult Literacy

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Maureen Lovett
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- Ms. Francis Ward, Literacy Action, Inc.
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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)
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 7th 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

<table>
<thead>
<tr>
<th>Tests</th>
<th>r value</th>
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<tbody>
<tr>
<td>WJ General Information &amp; WJ Picture Vocabulary</td>
<td>.859</td>
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<tr>
<td>WJ General Information &amp; WJ Academic Knowledge</td>
<td>.849</td>
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<td>WJ Academic Knowledge &amp; WJ Picture Vocabulary</td>
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<td>WJ Letter Word ID &amp; TIWRE</td>
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<td>WJ Word Attack &amp; TOWRE Phonemic Decoding</td>
<td>.768</td>
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<tr>
<td>CASL Meaning from Context &amp; CASL Inference</td>
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<tr>
<td>CASL Inference &amp; CASL Nonliteral Language</td>
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<tr>
<td>WJ Letter Word ID &amp; TOWRE Phonemic Decoding</td>
<td>.729</td>
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<tr>
<td>WJ Letter Word ID &amp; WJ Word Attack</td>
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<tr>
<td>WJ Passage Comp &amp; WJ Academic Knowledge</td>
<td>.706</td>
</tr>
<tr>
<td>CELFL Word Classes &amp; CELF Word Definitions</td>
<td>.703</td>
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</tbody>
</table>
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

Competence, Pressure, Self-Efficacy, and Difficulty

College students
Adult literacy learners
Value, Interest, Effort, and Intrinsic Motivation

College students
Adult literacy learners
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
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 l 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!”
Weeding the garden is backbreaking work.
Weeding the garden is backbreaking work.
Weeding the garden is backbreaking work.
Weeding the garden is backbreaking work.
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
<table>
<thead>
<tr>
<th>Challenge Words</th>
<th>Workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>collaboration</td>
<td>references</td>
</tr>
<tr>
<td>application</td>
<td>apprenticeship</td>
</tr>
<tr>
<td>orientation</td>
<td>promotion</td>
</tr>
<tr>
<td>correspondence</td>
<td>occupational</td>
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<tr>
<td>Challenge Words</td>
<td>Finance</td>
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<td>-------------------------</td>
<td>------------------------</td>
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<tr>
<td>amortization</td>
<td>authorization</td>
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<tr>
<td>mortgage</td>
<td>recession</td>
</tr>
<tr>
<td>audit</td>
<td>commodity</td>
</tr>
<tr>
<td>bank reconciliation</td>
<td>revenue</td>
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</tbody>
</table>
Adult PACES Comprehension Program

- Predicting the Author’s Purpose.
- Acquiring Vocabulary using Context Clues.
- Clarifying Common Sources of Confusion.
- Evaluating and Elaborating through Questioning.
- 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.
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

Reader’s Purpose
- To Enjoy
- To Learn
- To Choose

Saves the reader time and allows choice
- To Entertain
- To Inform
- To Convince

Writer’s Purpose
Driving Rampage

Danger in CSAL Superstore parking lot

Be alert for Text Signals and gather information to make good predictions.
## Affix Knowledge

<table>
<thead>
<tr>
<th>Affix</th>
<th>New Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>write</td>
<td>rewrite</td>
</tr>
<tr>
<td>happy</td>
<td>unhappy</td>
</tr>
<tr>
<td>honest</td>
<td>dishonest</td>
</tr>
<tr>
<td>do</td>
<td>undo</td>
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</tbody>
</table>

## 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>foreign words</td>
<td>attaché</td>
</tr>
<tr>
<td>jargon</td>
<td>hippocampus</td>
</tr>
<tr>
<td>proper names</td>
<td>Sidney Poitier</td>
</tr>
<tr>
<td>abbreviations</td>
<td>Mr.</td>
</tr>
<tr>
<td>acronyms</td>
<td>CNN</td>
</tr>
</tbody>
</table>

## Context Clues

- word definition signals
- other familiar words
- glossary
- visual cues
Acquiring Vocabulary from Context

Acquiring Vocabulary means learning new words as I read.

- Look AT the word
  Do I see a Root Word and Affixes?

- Look NEAR the word
  Do I see any Punctuation Definition Signals or Word Types I recognize?

- Look AROUND the word
  Do I see Context Clues?

- FIGURE OUT what the word means

- REPLACE your meaning into the original sentence and CHECK to see whether it makes sense.

- Use dictionary to confirm meaning (if needed)
Common Sources of Confusion

- Pronouns
- Unfamiliar words and jargon
- Multiple Meaning words
- Nonliteral language
- Contradictions
- Ambiguous words/phrases
Clarifying Confusion with Questions

SEE the source of confusion.

Pronouns
Multiple Meaning Words
Nonliteral Language

CLARIFY the confusion with questions exclusive to each source.

REPLACE the confusing word or phrase with answers to the clarifying questions.
Evaluating means asking ourselves good questions to monitor our understanding of a text.

Elaborating means adding to what is directly stated in the text.
<table>
<thead>
<tr>
<th>Beginning</th>
<th>Middle</th>
<th>End</th>
</tr>
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<tbody>
<tr>
<td><strong>Who</strong> are the main characters?</td>
<td><strong>What</strong> are the important events/actions in the plot?</td>
<td><strong>How</strong> is the problem solved?</td>
</tr>
<tr>
<td>How would you describe them?</td>
<td>Why did the event/action occur?</td>
<td></td>
</tr>
<tr>
<td>What are the character’s motives?</td>
<td>How are other characters affected by an event/action?</td>
<td></td>
</tr>
<tr>
<td>Where and When does the story take place?</td>
<td><strong>What</strong> is the major shift in the plot? (Where the problem starts getting resolved.)</td>
<td></td>
</tr>
<tr>
<td>What is the problem?</td>
<td></td>
<td></td>
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<tr>
<td>What caused the problem?</td>
<td></td>
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</table>

Evaluating Our Understanding of Narrative Texts (First level)
<table>
<thead>
<tr>
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<th>End</th>
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<td></td>
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<tr>
<td><strong>What</strong> caused the problem?</td>
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</tbody>
</table>
Evaluating and Elaborating Through Questioning

To evaluate our understanding of informative texts, we ask ourselves:

What is the topic?

What is the main idea?

What information supports the main idea?

Computers: Faster than the Speed of Byte

Computers are very valuable machines because they 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.
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
Building Bridges
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?

- What are we supposed to learn from this text?
- 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.
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 self-published or professionally published?
- When was the text written?

**Check for Bias**
- What is the bias towards?
- Is the writer transparent about their bias?
## URL Knowledge

<table>
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<tr>
<th>Domain</th>
<th>Description</th>
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<tr>
<td>.com</td>
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<td>slideshare.net</td>
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<td>United States</td>
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<tr>
<td>.ca</td>
<td>Canada</td>
<td>google.ca</td>
</tr>
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<td>.uk</td>
<td>United Kingdom</td>
<td>google.co.uk</td>
</tr>
<tr>
<td>.au</td>
<td>Australia</td>
<td>google.com.au</td>
</tr>
</tbody>
</table>
Using a search engine to research a topic, like genetically modified foods.
Deeper comprehension, more engaged reading, elaborated vocabulary.
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**
Are you new? Click HERE!

I have used CSAL. Click HERE!
Typing tutorial instructs students how to use a keyboard.
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
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<tbody>
<tr>
<td>0</td>
<td>Introduction to Program/Orientation</td>
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<tr>
<td>1</td>
<td>Predicting Using Text Signals</td>
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<tr>
<td>2</td>
<td>Predicting the Writer's Purpose</td>
</tr>
<tr>
<td>3</td>
<td>Predicting the Writer's Purpose in Hybrid Texts</td>
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<tr>
<td>4</td>
<td>Affixes</td>
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<tr>
<td>5</td>
<td>Punctuation Pre Skills for Acquiring</td>
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<tr>
<td>6</td>
<td>Word Types and Context Clues</td>
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<td>7</td>
<td>Acquiring Words Strategy</td>
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<tr>
<td>8</td>
<td>Clarifying: Multiple Meaning Words</td>
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<td>9</td>
<td>Clarifying: Pronouns</td>
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<td>10</td>
<td>Clarifying: Non Literal Language</td>
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<td>11</td>
<td>Review (PAC)</td>
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<td>12</td>
<td>Differentiating Between Narrative, Informational, Persuasive Texts Using Key Information</td>
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<td>13</td>
<td>Questioning Strategy: Narrative Texts</td>
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<td>14</td>
<td>Bridge Building in Narratives</td>
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<td>15</td>
<td>Summarizing Narratives Using a Plot Graph</td>
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<td>Questioning Strategy: Informative Texts</td>
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<td>Questioning Strategy: Persuasive Texts</td>
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<td>Summarizing: Statement and Explanation</td>
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<td>Summarizing: Problem Solution</td>
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<td>Summarizing: Time Order, Order of Importance</td>
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<td>Summarizing: Procedural</td>
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<td>Review of Text Structures</td>
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<td>Elaborating on Narrative Texts</td>
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<td>28</td>
<td>Elaborating on Informative Texts through Questioning</td>
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<td>29</td>
<td>Elaborating on Persuasive Texts through Questioning</td>
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<tr>
<td>30</td>
<td>Looking at Documents/Question and Answer Structure</td>
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</table>
Welcome to CSAL AutoTutor
# Teacher’s Access Page Database Class View

## CSAL Database Application Class lai

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<thead>
<tr>
<th>Meeting Time</th>
<th>Location</th>
<th>Teacher(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR 9-12</td>
<td>atlanta</td>
<td><a href="mailto:laura34@gmail.com">laura34@gmail.com</a>, <a href="mailto:devan@brown.edu">devan@brown.edu</a></td>
</tr>
</tbody>
</table>

Please note that averages are based on the students' last attempt on a lesson. You may examine all attempts a student has made by clicking on a score.

### Lesson Breakdown

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Class Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. Introduction</td>
<td>77%</td>
</tr>
<tr>
<td>1. Text Signals</td>
<td>87%</td>
</tr>
<tr>
<td>2. Writer’s Purpose</td>
<td>87%</td>
</tr>
<tr>
<td>3. Hybrid Texts</td>
<td>75%</td>
</tr>
<tr>
<td>4. Affixes</td>
<td>89%</td>
</tr>
<tr>
<td>5. Punctuation</td>
<td>71%</td>
</tr>
<tr>
<td>6. Context Clues</td>
<td>70%</td>
</tr>
<tr>
<td>7. Acquiring New Words</td>
<td>75%</td>
</tr>
<tr>
<td>8. Multiple Meaning Words</td>
<td>78%</td>
</tr>
<tr>
<td>9. Pronouns</td>
<td>70%</td>
</tr>
<tr>
<td>10. Non-Literal Language</td>
<td>76%</td>
</tr>
<tr>
<td>11. Review</td>
<td>78%</td>
</tr>
<tr>
<td>12. Using Key Information</td>
<td>75%</td>
</tr>
<tr>
<td>13. Questioning: Narrative</td>
<td>78%</td>
</tr>
<tr>
<td>14. Bridge Building</td>
<td>75%</td>
</tr>
<tr>
<td>15. Summarizing Narrative</td>
<td>75%</td>
</tr>
<tr>
<td>16. Questioning: Informational</td>
<td>78%</td>
</tr>
<tr>
<td>17. Questioning: Persuasive</td>
<td>65%</td>
</tr>
</tbody>
</table>
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

- PACES Instruction
- PHAST Instruction
- AutoTutor Instruction and Application
- Independent Reading
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
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”.

QUESTIONS