FOR-PD'S READING STRATEGY OF THE MONTH

Inferring

February 2009

Printable PDF version

"From a drop of water a logician could infer the possibility of an Atlantic or a Niagara without having seen or heard of one or the other." ~~Sherlock Holmes, *A Study in Scarlet*

RATIONALE

Sherlock Holmes, the consulting detective in the stories by the same name, may have found the skill of inferring as simply "it's elementary, my dear, Watson". Sadly many students cannot say the same as they struggle to grasp the meaning of a passage or book, when the author has not noted specific implications directly in the text. While Sherlock Holmes cleverly uses his background knowledge, prior experiences, and deductive reasoning abilities to infer meaning and solve problems, students may not have ever been taught to go beyond the "literal interpretation and to open a world of meaning" as they read a text. (Keene & Zimmerman, 1997).

The skill of inferring, "merging background knowledge with clues in the text to come up with an ideas that is not explicitly stated by the authors" (Harvey & Goudvis, 2007), can have many labels or names. Teachers often use these with the intent of helping students understand how to derive information about texts. Teachers may advise a student that he or she needs to go back to the text and "read between the lines", "think harder", "draw a conclusion", or "infer". While these suggestions are useful to a student experienced with inferring information from text, students with less experience will benefit first from direct instruction on how to infer and/or graphic organizers that assist them with the skill.

We often find that striving readers, when asked inferential questions, return to the text expecting to find the answer printed in black and white. They may search thinking the answer is somewhere within the text and was just overlooked. In a sense it has been overlooked, as the author gives clues and information within the text, although not directly. "Inferring requires that the reader use an appropriate amount of background knowledge in combination with textual evidence." (Tovani, 2000). Students must learn to analyze text for both explicit and implicit meanings based on their own experiences and the clues left by the author.

Inferential thinking involves many, multifaceted mental processes that enhance understanding. These include the following (Harvey & Goudvis,2007):

- Making predictions
- Using context
- Interpreting Language
    - Figurative language
    - Idiomatic language
    - Metaphoric language
- Visualizing
- Inferring relationships
    - Setting to plot
    - Cause and effect
    - Character's feelings

- Author's Purpose
- Creating Interpretations based on evidence
- Using text evidence to find theme and ideas
- Drawing conclusions based on evidence

Inferring is seen as the foundation of comprehension. Teaching students how to infer is a tool that will assist them with remembering what they have learned and provide practice on how to reapply it in other situations and readings (Harvey & Goodvis, 2007; Keene & Zimmerman, 1997). Inferential thinking provides students a way to gain an understanding of not only what is explicit in a text, but implicit, as well.

HOW TO USE THE STRATEGY

Assisting students with learning inferring techniques will require teachers to use direct instruction and provide practice in order for it to become a more natural part of reading. Tovani (2000) suggests the following process for using direct instruction for teaching students how to infer.

1. Assist students with recognizing the strategy. Offer examples and think-alouds on how you infer information from a text or even a situation.
2. Provide students an opportunity, preferably as a whole group, to experience what it is like to use the strategy.
3. Support attempts for students to implement the strategy on their own.
4. Offer practice opportunities with more difficult material.

The following represent some ideas for teaching inferring to K-12 students.

Using the Cover and Illustrations (Harvey & Goudvis, 2007)
Using pictures and images plus cover art can help support students with gaining experience with inferring. While emergent readers are frequently taught to use the pictures and cover art to gain meaning, older students can also benefit from considering graphics and pictures in fiction and non-fiction texts. Teachers need to take time to help students write down their inferences of these items and then go back and either confirm or dismiss them based on what they read in the text or discuss in a reading group. This is a type of prediction, which many teachers do often, but that is considered an aspect of inferential thinking when confirmed or contradicted by the text (Harvey & Goudvis, 2007).

Text Clues (Harvey & Goudvis, 2007)
Harvey and Goudvis (2007) offer an inferring equation that emphasizes background knowledge and text clues to assist students with inferring. The BK+TC= I formula stands for background knowledge (BK) plus text clues (TC) equals an inference (I). Using this formula students will draw conclusions not only from the text or background knowledge, but a combination of both that helps them predict an outcome, surface a theme, and gain understanding of the author's meaning.

Using a simple sheet of paper, or an organizer, students can reflect on their own background knowledge in relationship to the text, as well as focus on text clues directly from the text. Afterward, a thoughtful inference should be noted.

Example

Background Knowledge	Text Clues	Inference
The car wouldn't start so it might be out of gas. My Dad runs out of gas all the time.	The engine wouldn't start and the lady is "looking down at the gauges with an expression of exasperation."	She's run out of gas because she was in a hurry to get to the doctor.

Questioning
Inferring and questioning go hand in hand to support and build understanding. *Questioning* has been used by teachers as a way to guide and monitor student learning. "Research shows that teacher questioning strongly supports and advances students' learning from reading (Armbruster,

Lehr, & Osborn, 2001)." One useful approach to assist students in gaining understanding is the Question-Answer Relationship or QAR. Teachers can use these guidelines to help students learn how to distinguish questions with answers that are found "in the book" and questions with answers found "in my head." Understanding how Question-Answer-Relationships work is crucial for learning and aids students with going beyond the explicit and into the implicit meaning of the text. For more information on the QAR approach click here.

Visualizing and Inferring

Inferring is greatly related to visualization as visualizing strengthens our inferential thinking (Harvey & Goudvis, 2007). Visualization is the ability to build mental pictures or images while reading. If we are able to construct any mental image from what we read, it is likely that our understanding of the material will be greater than had we not (Gambrell & Jawitz, 1993). Visualization can be developed through a variety of activities and lessons. Click here to read more about visualization strategies.

Making Connections

Knowledgeable and experienced readers bring to the text is extremely important to successful inferring. Good readers draw on prior knowledge and experience to help them understand what they are reading and are thus able to use that knowledge to make connections. Accessing prior knowledge and experiences is a good starting place when teaching students to infer because every student has experiences, knowledge, opinions, and emotions that they can draw upon and connect with the text.

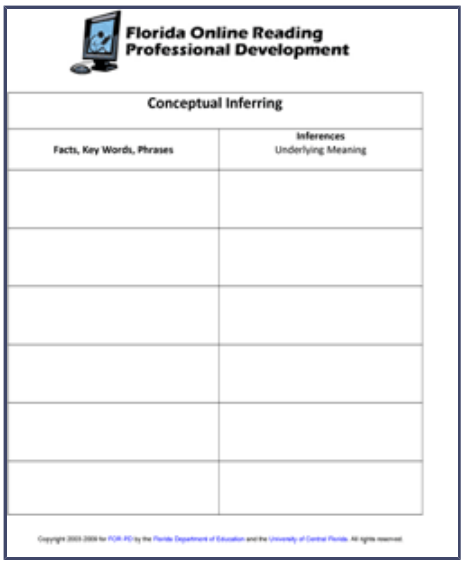
Keene and Zimmerman (1997) concluded that students comprehend better when they make different kinds of connections:

- Text-to-self
- Text-to-text
- Text-to-world

By using this strategy, students can get a better grasp on what the author is trying to convey through the text, but is not actually writing directly within the text. Click here to learn more about the making connections strategy.

Conceptual Inferring

Using a graphic organizer, as you see below, can be extremely useful when assisting students to gain factual understanding. Having students record facts, keywords, and phrases and then considering inferences they are making, is a great way to help them make sense of content area information.


Florida Online Reading Professional Development

Conceptual Inferring

Facts, Key Words, Phrases	Inferences Underlying Meaning

Blank Conceptual Inference

Florida Online Reading Professional Development

Conceptual Inferring
Elementary Math Example

Facts, Key Words, Phrases	Inferences Underlying Meaning
Beth needs 6 girls to come to her birthday party. If she invites all 10 girls in the class to the party but only half show up will she have enough girls?	I know that even though it doesn't tell me subtract that I can figure out how many girls come by subtracting 6 from half of 10.
Andy has 19 new movies on DVD. This is 8 more than Ken has at his house. How many does Ken have?	I know how many Andy has but I'm not sure how to get the number Ken has at his house. I know Andy has 8 more so I think I'm either going to add or subtract the two numbers. The word "more" is a clue.
Fido has 12 bones he wants to share with his other dog friends. If he gives every dog 3 bones each, how many dog friends can he share with?	Since each dog gets 3 bones I can count by 3s. 3, 6, 9, 12. That's 4 dogs. The word share was a clue.
Kate spent $4.00 on her 3 brothers and $5.00 on her 2 sisters. Did her brothers or sisters get more spent on them?	Kate has 3 brothers and 3X4 is $12.00. I knew that I needed to count out each brother and then put the amount together because I needed to get all of the brothers and sisters into groups.
The graph reads that Roger at 9 hotdogs in week 1 and 12 in week 2. But, in week 3 he got the flu.	My prediction is that he won't eat as many hotdogs in week 3 because he was sick and I know that flu makes you not want to eat hotdogs.
Mary had 6 cats and one of her cat had 4 kittens. How many animals does she have all together.	The word all together makes me think I'll need to add. So she has 10 animals all together.

Copyright 2003-2009 for FOR-PD by the Florida Department of Education and the University of Central Florida. All rights reserved.

Elementary Example

Florida Online Reading Professional Development

Conceptual Inferring
Secondary History Example

Facts, Key Words, Phrases	Inferences Underlying Meaning
The great depression, with the involvement of the US government via the New Deal, lingered along until the beginning of World War II.	Although the author didn't write that the New Deal prolonged the Great Depression, his use of the words lingering and government expansion leads me to think that was his meaning.
Gas - $2.00 a month Groceries - $6.00 a month Telephone – no phone Trash Pick-up—none	Looking over these expenses for a family in the Great Depression makes me think about how poor they really were. My other text read that on average groceries, for a family this size was at least $15.00.
"Papa was a land owner and made lots of money until 1929 when he lost it all."	Although it doesn't say the land and money was lost in the stock market crash, I know that the market crash started the depression so I figure he lost it there.
California promised to be the land of opportunity. It ended up being a land of turmoil.	I am unsure about this because the author doesn't' talk anymore about it. I think that perhaps there were jobs promised but not delivered.
The photo in the text is a family walking on a lonely road beside other families carrying possessions.	They look sad and upset. They look tired. The author doesn't write about this but asks what we see. I see a family broke down by the depression and having to leave home.
The graph reads that families for that region that lost their homes in 1929-1934 tripled from the 1920s.	The graph notes the family that lost their homes and the author notes this in her writing. Yet, the one thing I noticed was the relationship to job loss and home loss.

Copyright 2003-2009 for FOR-PD by the Florida Department of Education and the University of Central Florida. All rights reserved.

Secondary Example

ASSESSMENT

When assessing students on their inferring skills teachers will want to choose a piece of text, either fiction or non-fiction, and after having the student read it, ask the following questions to gage the needs of their students.

1. What do you think the author wants you to learn from the text?
2. What did the author mean by _____?
3. What details in the text help you know that?
4. What do you know about this text that the author didn't write? How do you know this?

Using questions like these, along with classroom observation, can provide teachers with an effective, informal assessment.

RESOURCES

Into the Book
http://reading.ecb.org/teacher/inferring/infer_lessonplans.html
Review ideas and lessons for teaching students how to infer.

Inference Lesson Plan
http://teachingtoday.glencoe.com/lessonplans/inference-lesson-plan
This lesson plan for secondary students offers thoughts on how to use graphics to infer an author's meaning

Critical Thinking Strategies
http://www.powayusd.com/projects/literacy/CriticalThinking/Inference.htm
Review this lesson for information on how students can learn how to make inferences using a variety of newspaper cartoons.

PBS: Dead Men's Tales--Science
http://www.pbs.org/saf/1203/teaching/teachPDF2.pdf
This six-page PDF file includes a lesson plan on inferring height from bone length. It will help students understand how inference is related to the scientific process.

Making Inferences from Graphs in Math
http://www.doe.state.la.us/lde/uploads/5654.pdf
This 14-page PDF file includes a lesson plan for teaching students how to infer information from graphs.

REFERENCES

Armbruster, B., Lehr, F., & Osborn, J. (2001). *Put reading first: The research building blocks for teaching children to read.* Washington, DC: The U.S. Department of Education.

Gambrell, L.B., & Jawitz, P.B. (1993). Mental imagery, text illustrations, and children's story comprehension and recall. *Reading Research Quarterly, 28*, 264-276.

Harvey, S. & Goudvis, A. (2000). *Strategies that work: Teaching comprehension to enhance understanding.* Portland, ME: Stenhouse.

Harvey, S., & Goudvis, A. (2007). *Strategies that work: Teaching comprehension for understanding and engagement* (2nd ed.). York, ME: Stenhouse.

Keene, E.O., & Zimmermann, S. (1997). *Mosaic of thought: Teaching comprehension in a reader's workshop.* Portsmouth, NH: Heinemann.

Tovani, C. (2000). *I read it, but I don't get it: Comprehension strategies for adolescent readers.* Portland, ME: Stenhouse.

Go to Strategy of the Month Archive.

Go to Adobe PDF instruction page.

About | Registration | Participants | Facilitators | Educators | Parents | Resources | Help Desk | eStore | Contact | Search | Site Map

UCF Stands For Opportunity

For comments and suggestions, please contact us at forpd@mail.ucf.edu or 407-207-7296.

© Copyright 2003-2007 for FOR-PD by the Florida Department of Education and the University of Central Florida. All rights reserved.