FEATURE

INFORMATION + LITERACY

Evidence-Based Practice in the Classroom and the School Library

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LITERACY

"What's *The Brady Bunch*?" asked Maria as she interacted with the other members of her reading inquiry group in our ninth-grade English class. We were reading *Seedfolks* by Paul Fleischman, and the inquiry groups were finding and researching unfamiliar allusions they found in the novel. Their task was to discuss why the author used allusions to create meaning.

"Uh, I think it was some show in the 90s," replied Sarah.

Kyle, a reluctant participant who had not been involved in previous discussions, suddenly came to life. "*The Brady Bunch* was this TV show that ran from 1969 to 1974 and was about this guy and girl who had six kids."

Kyle made eye contact with me as he said, "I think that's the only research I ever did on my own—AT HOME!"

"So does Gonzalo wish he had this big family?" asked Maria. She was making connections between Kyle's information about *The Brady Bunch* and a chapter in *Seedfolks* about a boy's relationship with his father.

Kyle sighed and put down his book. "No, he doesn't wish he had a big family. He wishes he had the *perfect* family, like the American Dream or something," he replied.

Was I hearing correctly? Did Kyle, who reads at a fifth-grade level, experience literary insight? How could this happen? In thinking about Kyle and his motivation to research *The Brady Bunch,* I was struck by what he was able to read and understand. A high level of comprehension affected how he applied his new knowledge about *The Brady Bunch* to experience literacy insight. His work, along with that of his peers, became the foundation for my evidence-based practice in the classroom.

Evidence-Based Practice and the Research

My role as teacher was to monitor student progress, in part, through observation, but to assess my students' progress I needed to know what the research says about literacy development. What are the best teaching methods? What really works? The reading levels of students in Kyle's class ranged from fourth- to eighth-grade. Despite Kyle's low reading level, his performance in the inquiry group aligned with literacy research about prior knowledge. When students start out with the same understandings and information, they can function on grade level, even if that level is above their comfort zone (Baldwin, Peleg-Bruckner, and McClintock 1985; Guthrie 1981; Lipson 1982; Tobias 1994). Like Kyle, I experienced my own insights based on the literacy research.

"THIS BOOK IS ABOUT OPPORTUNITY."

I began to reflect: if interest and knowledge develop and enhance a student's ability to read better, then assisting students in activating prior knowledge prepares them for reading challenges. Being literate goes beyond the ability to read at grade level. It is the ability to process information to analyze, synthesize, and draw conclusions.

More than twenty years ago reading researchers sought to capture the behaviors good readers demonstrated to make meaning from their reading. By shifting the focus away from what was wrong, researchers were able to study and discuss what worked. A comprehensive list of reading strategies emerged from this research. This was an important discovery. Defining literacy shifted from the ability to read words

on a page to the ability to draw conclusions about meaning. The research showed that reading strategies can be taught through practice and reinforcement in the classroom. When I discovered how reading strategies improve comprehension (Olshavsky 1976; Robb 2000; Harvey and Goudvis 2007) I realized these strategies could help me create interventions that help my students become better readers.

The Old Man and the Sea and Reading Strategies That Work

Activating prior knowledge is an important reading strategy that helps students identify what they already know about a subject before they begin to read about it (Spires and Donley 1998). When planning how to guide students

through Ernest Hemingway's *The Old Man and the Sea* the first challenge was connecting young teens with an aging protagonist who yearns to regain the admiration of his community through his prowess as a fisherman. How could I help them identify with Santiago's sense of loss and his journey of self-actualization? Working in small groups, students began by activating their prior knowledge using a K-W-L activity that asked them to map what they knew, how they could relate to the story, and what their personal connections could tell us about potential themes we might encounter. The students made predictions based on the knowledge and experiences they collected as a group. They read the blurb on the back of the book, explored the front cover, and then created a communal list of what they already knew from these two sources. The student entries in the first column of the K-W-L chart (figure 1) indicated that the Old Man will face a struggle.

They didn't know the nature of the struggle, but they knew it involved deep-sea fishing. Their predictions, based on what they already knew, included:

- "Hardships";
- "Persistence";
- "Hope";
- "He will eventually catch a fish";
- "This book is about opportunity."

Students used their communal prior knowledge to build a foundation for their eventual analysis of theme and characterization and to arrive at conclusions about the author's intended meaning. They did this
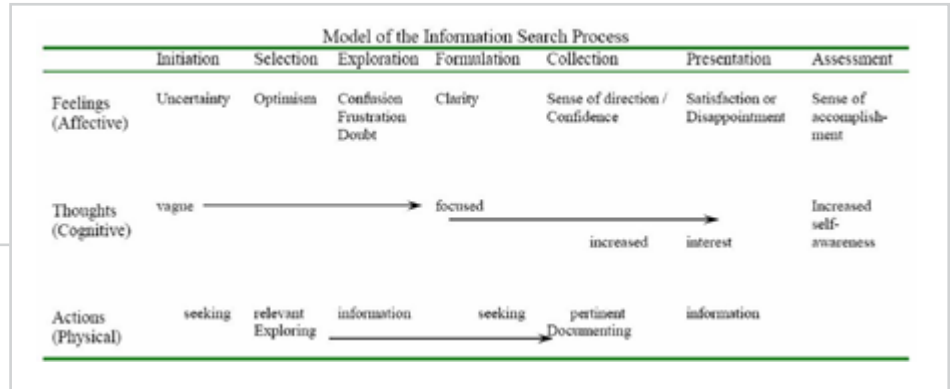

Figure 1. K-W-L chart for *The Old Man and the Sea*.

Figure 2. Model of the information search process.

before reading the first chapter. The second column of figure 1 contains evidence that students began to connect to the story and the character by talking about when they felt or experienced any of the items predicted in the first column. They identified "sense of loss." In the short summary they read, they connected with Santiago's inability to catch a fish and the degradation he feels at others' pity for his loss of skill and ability. They related to the "frustration, anxiety, depression" that could result from change and metamorphosis. They went on to discuss what this novel would eventually tell them about life, such as, "Life is not always easy, and you will not always get what you want."

Through this group activity, students used the following reading strategies to gather information and prepare for reading *The Old Man and the Sea*:

- Activate prior knowledge;
- Make predictions;
- Draw conclusions;
- Ask questions;
- Make inferences;
- Synthesize;
- Build fluency.

Now they are ready to read.

Reading Strategies and the Information Search Process

Students need to experience inquiry both in and out of the classroom with some consistency and reinforcement. One of the nine widely accepted reading strategies is asking questions (Olshavsky 1976; Robb 2000; Harvey and Goudvis 2007). When students formulate questions and develop their own answers they are engaged in critical thinking that requires critical reading. Information literacy research offers a diagnostic tool in the form of the Information Search Process (ISP) (Kuhlthau 1983). As a teacher I think of the ISP as a framework for critical thinking that develops through interaction with information. Students frequently need to revisit and refine skills as they develop their research and their thinking. Reading strategies help students engage in independent and deep reading so they can develop interpretive and analytical skills. Like the ISP, reading strategies provide students with research-based supports in the gathering, processing, and analyzing of information for the purpose of constructing new knowledge and understandings. When compared with ISP stages (figure 2) these reading strategies are remarkably compatible with interventions commonly used to

help students successfully complete an information-based inquiry.

In the Task Initiation phase of the ISP (see figure 2) students feel uncertain and their thoughts are vague. Activating prior knowledge supplies them with a foundation and confidence to move forward to Topic Selection. In the Exploration stage they are inundated with information and may lose focus and motivation. Reading strategies such as asking questions, making predictions, and synthesizing can help them filter the information and arrive at Focus Formulation so they can generate questions. At the Information Collection stage they are prepared to discriminately select or reject information relative to their questions and focus. Reading strategies such as drawing conclusions and making inferences help them to collect *relevant* information so that they can synthesize it in the Presentation stage when they are using their knowledge and skills to create a new understanding while meeting the learning targets for the project.

In Presentation and Assessment stages building fluency and developing vocabulary helps students communicate effectively with others about what they have come to know.

The deliberate and thoughtful use of reading strategies, particularly when students are engaged in a unit of inquiry where they encounter information overload, is compatible with interventions used in the various stages of the ISP. The teacher and school librarian, working as a team, can help students become literate—and information literate—as reading strategies become interventions for information processing as well as reading comprehension in both the classroom and the school library.

The Greek Heroes Project: Guided Inquiry as a Tool of Evidence-Based Practice

How does the marriage of reading strategies and the Information Search Process work in a sustained unit of inquiry? The Information Search Process is the backbone of Guided Inquiry:

Guided Inquiry is carefully planned, closely supervised targeted interventions of an instructional team of school librarians and teachers to guide students through curriculum based inquiry units that build deep knowledge and deep understanding of a curriculum topic, and gradually lead towards independent learning. It is grounded in a constructivist approach to learning, based on the Information Search Process developed by Professor Emerita Dr. Carol Kuhlthau's extensive research over a twenty-year period (Center for International Scholarship in School Libraries 2014)

Since reading strategies are compatible with the ISP, a Guided Inquiry unit on Greek heroes was another way I could support my students' literacy development in the context of information processing

and inquiry learning (Kuhlthau, Caspari, and Maniotes 2007). Students worked in collaborative groups of three to create a poster about a Greek hero; the poster was to contain a synthesis of stories about him, his family tree, a picture of him, and an original poem celebrating his life. The assignment articulated student roles: researcher, organizer, and poet. Group members self-selected their roles and worked together to collect, sort, and process information.

Students were provided with a short dossier (created by their teacher) about their hero. This dossier was the foundation of their work and provided opportunities for them to engage in annotation, decide what was important, use their prior knowledge of Greek mythology, and develop a plan for how they would gather their information. Although they did not experience the selection of information sources, learners

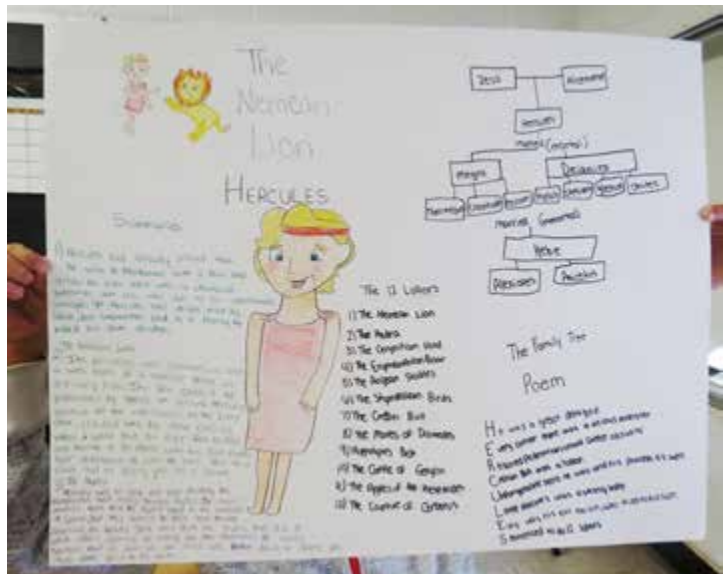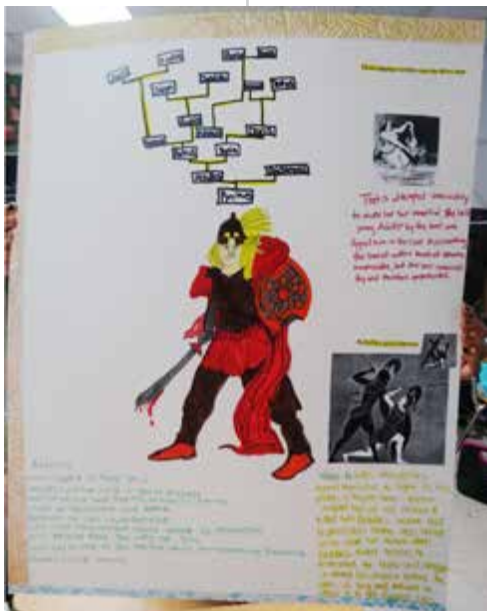Figure 3. Student product of Greek Heroes Guided Inquiry project.

Figure 4. Another example of poster generated during a Guided Inquiry project.

GUIDED INQUIRY BECOMES AN OPPORTUNITY FOR SELF-REFLECTION & SELF-EVALUATION FOR THE EDUCATOR, AS WELL AS FOR HER STUDENTS.

were able to experience the ISP and Guided Inquiry as a way to learn about Greek mythology and improve their reading comprehension and critical thinking. Students' ability to annotate was the key to their success in this unit of inquiry. Annotation helped them, particularly in the Focus Formulation ISP stage, so they could complete their work within three days.

As evidenced in two examples of their work in figures 3 and 4, students were able to accurately depict information in a clear, organized format that they designed.

Students' work product provided the teacher with evidence of the success of her instruction. In the rubric for this project, students were assessed on how well they used evidence from their research to support how they characterized their heroes. For example, the poster of Achilles (figure 3) conveys Achilles's avoidance of warnings because of his pride. The poster of Hercules lists his trials but showcases his battles with the Nemean Lion and the Hydra as definitive stories in his heroic journey. The posters shown in figures 3 and 4 both demonstrate that students recognized relevant information and were able to interpret and communicate the information concisely and accurately. The posters are examples

of evidence educators can use to determine how effectively students achieved the expected learning outcomes. Guided Inquiry becomes an opportunity for self-reflection and self-evaluation for the educator, as well as for her students. As students discovered their roles in this collaborative project their teacher also learned to collaborate with the school librarian. Inquiry and literacy development were no longer confined to the classroom, and information literacy was no longer confined to the school library. Literacy and information literacy could be taught together in a way that generated rich evidence of student progress and teaching success.

Assessment of Student Work and Evidence-Based Practice

Teacher effectiveness has been a strong theme in education reform in the past decade (Danielson 1996; Marzano et al. 2012; Marzano and Toth 2013; Darling-Hammond 2013; Weisberg et al. 2009). Frequently, the research explores the assessment of teacher competency through student achievement. Evidence-based practice is one way teachers collect evidence of their effectiveness.

Student work provides a road map for instruction when assessment instruments are aligned, consistent, and frequently employed to

measure student growth. In the ELA curriculum students are assessed at the beginning of the school year on four main concepts articulated in the Common Core State Standards for grades nine and ten: theme, characterization, language, and written expression. Students are asked to read a fictional story, annotate it, and answer four questions based on these standards. Figure 5 is a sample of a student's annotation at the beginning of the school year prior to literacy instruction.

The student marked the text presented to him by underlining, drawing attention to the word "dreaded." He did not respond with notations or remarks, nor is there any evidence of his consistent interaction with the text. The only evidence of interaction lies in the box he drew around one word, but what does that mean? The teacher can draw significant conclusions from this sample. The student does not understand how to determine what's important in a text (Robb 2000; Harvey and Goudvis 2007). The lack of ability to filter and sort information in the text indicates that he does not know how to use his prior knowledge to organize information nor can he adequately synthesize information as he reads. He poses no questions, indicating he doesn't know how to engage with the text. He is not

THE WAY THE STUDENT HAS ANNOTATED THE TEXT DEMONSTRATES HIS ABILITY TO ENGAGE WITH IT.

Figure 5. Example of student annotation before literacy instruction.

with you?"
It was the moment I'd dreaded. I mean, you can hardly deny that finding a hundred-dollar bill is newsworthy, even if, technically speaking, it didn't happen in school and therefore wasn't covered by her original question.
I would have kept the news to myself, except there was no way I could come home from having spent the hundred dollars without Mom noticing. And I didn't want her to think I'd entered into a life of crime. Mom watches a lot of sitcoms, so she worries about things like shoplifting and bank robberies.
"I found some money on the corner of Maple and Grove," I said, trying to sound real casual about it.
I shouldn't have bothered. Mom's eyes lit right away, and even

Figure 6. Same student's annotations one week later after direct instruction on annotation strategies.

connecting what he reads with what he is being asked to do, so he marks what he *thinks* might be important or interesting rather than confidently noting what will help him to the best answer the questions he is asked to address.

Figure 6 is the same student's work after one week of direct instruction on annotation strategies based on reading strategies. This instruction provided the student with specific, concrete ways to connect what he is reading with what he needs to do. Annotation instruction helps students determine their own learning outcomes based on the questions or tasks they have been asked to perform. When students have clarity and focus, two expected outcomes of the Information Search Process, they can more effectively use information.

He is questioning the text, making notes about words and vocabulary, and writing comments about the character acting benevolently "cause he loved her to [sic] much." Underlining is meaningful because the student connects words or sentences to thoughts and ideas, sometimes using arrows and lines. The way the student has annotated the text demonstrates his ability to

engage with it. For example, he has underlined "She promised" and asked, "Why would Zeus bealeave [sic] her if she lied to him before?" He is questioning why Zeus would release his wife, Hera, from her prison solely on her promise, when she has been proven a liar in the past. The student now has notes that help him to ask questions and reach clarity about characterization and theme with more precision and focus. When this student engaged in the Greek Heroes Guided Inquiry

project, he was able to successfully navigate the information he found and to decide what was important and what didn't need to be included in his group's project.

When students can more effectively and strategically engage with text they can become more successful inquirers. Their inquiry and the journeys they undertake can guide teachers through the curriculum, through their teaching, and through their self-assessment of their effectiveness.

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