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# **CONNECT**

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### DISCIPLINARY

LITERACY

LEARN MORE

Disciplinary literacy takes a turn away from isolated content-area strategies and clarifies what teachers can do to help their students learn in a more effective way. It respects the varied ways that students read, reason, write, think, speak, and, most important, participate in specific content areas. Researcher Elizabeth Moje (2010) deepens the definition by arguing that disciplinary learning doesn't just build knowledge but actually produces or constructs it. But, how do busy teachers make the shift to a disciplinary literacy classroom? It requires an embedded approach that honors the expertise of content-area teachers. First, they must identify what

embedded approach that honors the expertise of content-area teachers. First, they must identify what students need to learn and do to become successful in their content areas, preferably through dialogue with colleagues who teach the same content. Once they have named such skills and behaviors, they should focus on how to teach these skills while teaching content-not as a sidebar to the content. Focusing on literacy skills within the disciplines brings to life a much richer school-wide curriculum as students learn how to use literacy for different purposes in various subject areas.

What are Literacies within the Disciplines? The following lists for each of the major content areas, while not comprehensive, can act as starting points through which communities of teachers can begin to think in terms of disciplinary literacy (Lent, 2016).

	Read	Write	Think
Science	<ul> <li>When scientists read, they</li> <li>Ask "Why?" more than "What?"</li> <li>Interpret data, charts, illustrations</li> <li>Seek to understand concepts and words</li> <li>Determine validity of sources and quality of evidence</li> <li>Pay attention to details</li> </ul>	<ul> <li>When scientists write, they</li> <li>Use precise vocabulary</li> <li>Compose in phrases, bullets, graphs, or sketches</li> <li>Use passive voice</li> <li>Favor exactness over craft or elaboration</li> <li>Communicate in a systematic form</li> </ul>	When scientists think, they         Tap into curiosity to create questions         Rely on prior knowledge or research         Consider new hypotheses or evidence         Propose explanations         Create solutions
History	<ul> <li>When historians read, they</li> <li>Interpret primary and secondary sources</li> <li>Identify bias</li> <li>Think sequentially</li> <li>Compare and contrast events, accounts, documents and visuals</li> <li>Determine meaning of words within context</li> </ul>	<ul> <li>When historians write, they</li> <li>Create timelines with accompanying narratives</li> <li>Synthesize info/evidence from multiple sources</li> <li>Emphasize coherent organization of ideas</li> <li>Grapple with multiple ideas and large quantities of information</li> <li>Create essays based on argumentative principles</li> </ul>	<ul> <li>When historians think, they</li> <li>Create narratives</li> <li>Rely on valid primary and secondary sources to guide their thinking</li> <li>Compare and contrast or ponder causes and effects</li> <li>Consider big ideas or inquiries across long periods of time</li> <li>Recognize bias</li> </ul>
Math	<ul> <li>When mathematicians read, they</li> <li>Use information to piece together a solution</li> <li>Look for patterns and relationships</li> <li>Decipher symbols and abstract ideas</li> <li>Ask questions</li> <li>Apply mathematical reasoning</li> </ul>	<ul> <li>When Mathematicians write, they</li> <li>Explain, justify, describe, estimate or analyze</li> <li>Favor calculations over words</li> <li>Use precise vocabulary</li> <li>Include reasons and examples</li> <li>Utilize real-word situations</li> </ul>	<ul> <li>When Mathematicians think, they</li> <li>Consider patterns</li> <li>Utilize previous understandings</li> <li>Find connections</li> <li>Estimate, generalize, and find exceptions</li> <li>Employ mathematical principles</li> </ul>
English Language Arts	<ul> <li>When students of English read, they</li> <li>Understand how figurative language works</li> <li>Find underlying messages that evolve as theme</li> <li>Assume a skeptical stance</li> <li>Pay attention to new vocabulary or words used in new ways</li> <li>Summarize and synthesize</li> </ul>	<ul> <li>When students of English write, they</li> <li>Engage in a process that includes drafting, revising, and editing</li> <li>Use mentor texts to aid their writing craft</li> <li>Pay attention to organization, details, elaboration and voice</li> <li>Rely on the feedback of others</li> <li>Avoid formulaic writing</li> </ul>	<ul> <li>When students of English think, they</li> <li>Reflect on multiple texts</li> <li>Ask questions of the author</li> <li>Consider research or others ideas</li> <li>Discuss ideas and themes</li> <li>Argue both sides of a point</li> </ul>



A Snapshot of Low-Stakes Writing at Pelahatchie High School



The 21st century delivered a tremendous evolution in how young learners engage with textual information. As these young learners prepare to become productive citizens, they must be able to understand and construct information using print and nonprint materials in fixed and virtual platforms across multiple disciplines. These changes demand instruction that incorporates not only content literacy, but disciplinary literacy.

Disciplinary literacy is literacy (reading and writing) that requires young learners to have a clearly defined background knowledge about how to read purposefully, engage in productive interchange, and write in meaningful ways. Disciplinary literacy is not just the hip new name for content area literacy. Rather than focusing on the commonalities of literacy in the content areas, disciplinary literacy centers on the differences. Literacy in the various content areas is, indeed, different. This difference stems from the way these disciplines create, communicate, and evaluate information (T. Shanahan & Shanahan, 2008; C. Shanahan, Shanahan, & Misischia,

2011). For example, historians create knowledge using the historical record, scientists use experimentation and systematic observation, mathematicians use principles of logic, and literacy critics use philosophical stances. These different

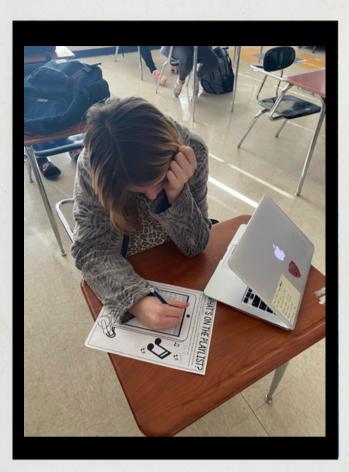
ways of creating new knowledge demand instructional changes. Due to increased reading demands of college, workforce training programs, and citizenship requirements which have risen over the past fifty years, educators must change the face of their classrooms. Today's educators must bring their classrooms to life through the implementation of practical, research-based strategies.

At Pelahatchie High School, teachers have been challenged to do just this. Teachers are using low stakes writing daily to address disciplinary literacy. Low stakes, or informal writing, is a quick way to increase the amount of writing students do in class. Low stakes writing refers to any writing activity that is short, typically ungraded, and focused on thinking through a problem or question. The PHS Teacher Tribe has implemented several strategies. In the eighth-grade math classes, teachers have often been challenged to find ways to include literacy – particularly writing. The eighth-grade math teacher has incorporated the use of daily writing with prompts that ask students to write about what they have learned about definitions of mathematical terms or how they might recognize a probable solution for an equation. The teacher evaluates the student answers and provides feedback designed to help students grasp the concepts more completely.

The tenth-grade language teacher uses prompts that vary depending on the standards that are being covered. For example, students are required to cite strong and thorough textual evidence to support analysis of what a text says explicitly as well as inferences drawn from the text. Students read a short passage or story and are then asked to analyze the text by writing a short paragraph their own words. Students are given an opportunity to share their writings. Other language students are shown trending video clips and asked to write a response to it.







PHS students have indicated that low-stakes writing is beneficial because it helps the learning process. PHS senior Brionna Hillie shared, "It helps me get more comfortable expressing my ideas, feelings, and builds a better understanding of what I am learning." Some students reported that they like writing about pictures so they can be more creative. Others enjoy getting to choose the topic that they get to write about. Regardless of the strategies used for low stakes writing, teachers and students are working strategically to improve disciplinary literacy. Using low stakes writing, the PHS Tribe is fulfilling the Rankin County School **District Mission: Bring Everyone's Strengths Together!** We will all intentionally focus on empowering our students to reach their maximum potential by embracing opportunities and challenges while cultivating a tradition of distinction in education.

#### References

Shanahan, C., Shanahan, T., & Misischia, C. (2011). Analysis of expert readers in three disciplines: History, mathematics, and chemistry. Journal of Literacy Research, 43(4), 393–429.

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. Harvard Educational Review, 78(1), 40–59.

Science teachers have used different approaches.

For example, in biology, students were assigned research topics on genetic disorders and given several sources to find information. The students then worked with partners to complete a carousel type activity to compile information on chart paper. The carousel activity was followed by a class discussion about each topic. In zoology, students have been given prompts that require them to give their opinions about ethical topics related to animals. One example involved pearl formation and the potential death of the oyster after the pearl is formed. Other topics such as harvesting oysters for pearls and as a food source were also written about by the students. In the eighth-grade science classes, exit tickets are given to students so they can write about what they learned in class. The teachers read the responses about what students have learned to find misconceptions about the topics being covered. The misconceptions are used for reteaching purposes the following class block.

> Low stakes writing "helps me get more comfortable expressing my ideas, feelings, and builds a better understanding of what l am learning." BREONNA HILLIE SENIOR PELAHATCHIE HIGH SCHOOL



### Teacher Spotlight - Lauren Peterson

#### 6th Grade Science Teacher - Northwest Rankin Middle School

Since September, I have implemented one small change in my classroom, and it has proven to be an essential and effective addition to our daily routine. For the first few minutes of class, I will read an excerpt from any science journal or article. This may be from current issues, new findings, historical events, etc. The students are asked to actively listen to my readings and write out at least one word that I have read to them. The word must be a term that the student is not familiar with or is not fully confident with the meaning or usage of the word.

Once the reading is completed, I will walk around the room and gather the information from the students' writings. We take 2-3 words from the sample and break them down into easier and more manageable forms.

This has proven successful in multiple ways. First, I am noticing a significant shift in spelling. Students are learning to really listen to the pronunciation of these words and attempt to sound them out to spell them as best they can. Second, students are becoming more familiar with common root words, prefixes and suffixes that they may have prior knowledge of or that we frequently use in class and lessons. Finally, students are beginning to build connections with not only science terms and concepts, but are also finding similarities within other classes and their content.

It is an exciting realization to watch students begin to break down the meaning of unfamiliar words as I am reading before I even lead the class to do this process. This has become a positive habit as we read through passages or discuss new concepts, and it has allowed us to bridge the gap between prior knowledge and further understanding.





An Interventionist's

Note On

### DISCIPLINARY LITERACY

### By Dr. Heather Hines - Interventionist - Northwest Rankin Middle School

By the time middle school students enter our classrooms, we expect them to be able to have the basic skills needed to read and comprehend certain text. We are seeing more and more each day that students do not have these basic skills that are needed and are in need of academic interventions. This is where disciplinary literacy comes into play in the world of intervention.

Disciplinary literacy in the intervention classroom is where we as interventionists use skills to specialize in content areas. What does that mean and what does it look like? Let's consider math for instance. Disciplinary literacy in math is focusing on the vocabulary and language of the subject and comprehension and understanding of the math language. This is done by writing and speaking mathematically. It is vital that proper terminology be used in disciplinary literacy when it comes to math content. This aids in better understanding of math objectives and competencies.

It is important as an interventionist that I have my students demonstrating their knowledge of content through reading, writing, speaking, and listening. Disciplinary literacy is used in the intervention classroom to make meaning within a specific discipline. In the intervention classroom we are teaching structured note taking and direct instruction in vocabulary. Disciplinary literacy allows the intervention world to demonstrate to students how to read and use information for each subject at hand.

## Improving Literacy

## Improves Behavior

By: Lorie Yates Curriculum Specialist



- Many older students who have comprehension difficulties also struggle with word-level reading.
- This reality flies in the face of the maxim that students "learn to read" in K-3 and then switch to "read to learn" in older grades. In fact, as this research demonstrates, the issue is less clear-cut. Students who didn't get enough practice with word-level reading will continue to struggle as the demands of content knowledge and comprehension ramp up.
- According to a special report, Early Warning, from the Annie E. Casey Foundation, "...the process of dropping out begins long before high school. It stems from loss of interest in middle school, often triggered by retention in lower grades...and that, in a great many cases, is the result of not being able to read proficiently as early as fourth grade."

- Reading on grade-level by the end of third grade is one of the most critical milestones in education. Studies show that 74% of third graders who read poorly still struggle in ninth grade.
- As Donald Hernandez reported in Double Jeopardy, children who do not read proficiently by the end of third grade are four times more likely to leave school without a diploma than proficient readers.
- Illiteracy and crime are also connected. The Department of Justice states, "The link between academic failure and delinquency, violence, and crime is welded to reading failure. Over 70% of inmates in America's prisons cannot read above a fourth grade level."

 Illiteracy is a threat to the teacher's classroom as much as it is to the student's future. Students who struggle to read act out during class in a variety of ways. Some students may have outbursts or make snide remarks as a way to distract from doing a task that is challenging to them. Worse, some students may get angry and lash out aggressively because they feel embarrassed or discouraged. These disruptions can impact the learning environment for all students. Eventually, students who struggle will become adverse to school.

- 95% of all students <u>can</u> learn to read (National Reading Panel).
- A teacher's beliefs about student achievement can have 2 times the effect on students as socioeconomic status. As Jon Saphier states in 'High Expectations Teaching' (2017), "to get students to believe it, we have to act as if we (their teachers) believe it ourselves in all the daily interactions of class instruction and class business that make up the emotional environment. And we have to create structures and routines that would exist only if we believe our students could be successful at a proficient level."
- Regardless of their diagnostic label, poor readers get poorer without the benefit of <u>effective</u> <u>instruction.</u>
- In order to prevent the retention of weak literacy skills, appropriate stake-holders such as school psychologists, general education teachers, special education teachers, speech and language specialists, reading specialists, administrators, and parents need to initially <u>establish collective</u> <u>efficacy about the relationship between</u> <u>instruction and performance</u>. In fact, an increase in reading achievement occurred in schools where beliefs about teaching and learning competencies were shared collectively by stakeholders (Goddard, Hoy, & Woolfolk-Hoy, 2000).
- Repeated exposures to words in multiple contexts are also important for storing words in memory and recalling them easily (Pressley, 1998).
- While specific literacy skills are important to teach, educators must keep in mind that the purpose of reading is to construct meaning from text. Several scholars claim that children acquire decoding, spelling, grammar, and comprehension skills more easily if the context from which they are presented is personally meaningful (Gambrell et al., 1999).
- Embrace the science behind reading instruction. In 2018, Emily Hanford's documentary, "Hard Words: Why Aren't Our Kids Being Taught to Read?," sparked a new round of debate over reading instruction and best practices, and her conclusion—that the scientific underpinnings of how children learn to read have mostly not been shared with teachers—helps explain her finding that "more than 6 in 10 fourth-graders aren't proficient readers."



For students who have some phonics skills and can decode short words, one research-based recommendation is word study. This includes morphology: the study of the smallest units of meaning within words. Morphology instruction teaches how to break up words like "untouchable" into parts: the prefix "un-," the root "touch," and the suffix "-able." And it teaches the meaning of those parts, which research has shown can support vocabulary development.

 Read aloud to your students. Read alouds not only allow teachers to model that reading is a great way to spend time but also exposes students to more complex vocabulary than they typically hear or read.

Practice conscious classroom management. In Rick Smith's book, he and his co-author Grace Dearborn suggest we imagine that each of our students has an invisible subtitle running along in front of them that is communicating to the adults in their lives what they really need. Everything else, the nonsense that comes out of their mouth and bodies during difficult interactions, is just noise. It is just interference, meant to get in the way of us reading and responding to their subtitle. As much as possible, try to ignore the noise and respond to the subtitle. For example, a student might be yelling out "This is stupid! Why we gotta do this?"

But the subtitle might say "This is hard for me. Help me to succeed and let me save face, too." As the teacher, if I can find the subtitle, instead of losing my cool and raising my voice and lecturing the student about disrespect and appropriate

language, then I can respond more compassionately. I might say "Yes. I know this is hard and sometimes hard things feel unnecessary and we want to avoid them. But I'm here to help. Let's work it out."

# Reading and Writing in the Disciplines

When students enter middle and high school, their teachers expect that they have learned the basic skills and strategies for reading and comprehending text. However, even students who have developed effective literacy practices in the early years may not have the reading and writing skills they need to successfully read and write the complex texts required in middle and high school.

These four units from Annenberg Learning will provide you with a more detailed overview of disciplinary literacy.



### For more information, check out these resources:

**Culturally Responsive Disciplinary Literacy Strategies Instruction** 

**Content Area and Disciplinary Literacy** 

**<u>Reading Intervention For Older Struggling Students</u></u>** 

**Disciplinary Literacy: Just The Facts** 

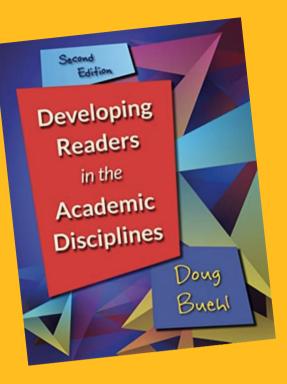
Complete an interactive activity in which you read a short text in each of the major disciplines: history. English. science, and mathematics. Texts from each discipline address the same topic of economics, but differ in purpose, structure, and reading strategies needed to comprehend and respond to the text ideas. As you read, consider the text structure. vocabulary. language use, text features, etc., used to present the important ideas. After reading each text, you will answer questions to assess your learning. The goal of this activity is to experience the different text types and specialized literacy practices required to make sense of the ideas presented that students encounter each school day. Click below to get started.

### Quiz – Experiencing Discipline-Specific Texts

# It`s Quiz Time

Consider the specific strategies you used to make sense of the text (e.g., text structure, background knowledge, graphics, knowledge of context, close reading, knowledge of how that discipline works) in the interactive activity. What was challenging? What did you do to make sense of the text? How did this experience help you understand the challenges your students encounter in your discipline?

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What does it mean to read, write, and think through a disciplinary lens?

How do you develop students as readers, writers, and thinkers in the different academic disciplines? Doug Buehl, author of <u>Developing Readers in the</u> <u>Academic Disciplines</u>, shows you how to:

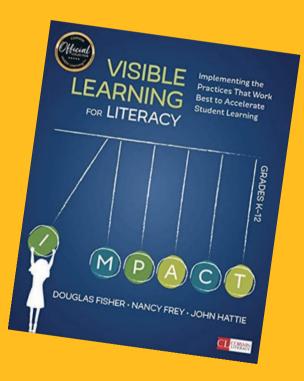
- Teach to the match of literacy and disciplinary understanding to bridge academic knowledge gaps
- Frontload instruction that activates and builds academic knowledge
  - Build inquiring minds through questioning

Writing with standards in mind, Doug shows teachers in all subjects-not just the language artshow to help students meet literacy expectations. You also get instructional practices to help your students work with complex texts, as well as helpful information for customizing literacy practices to meet the demands of your discipline.

If you agree with the authors' statement that "every student deserves a great teacher, not by chance, but by design", then <u>Visible Learning for Literacy</u> is a good starting point for your next learning design decisions. The book is based on John Hattie's research. In more than 15 years he has synthesized over 1800 meta-studies on learning and achievement and has identified instructional routines that have the biggest impact on student learning. Based on this evidence, the authors address:

(1) Surface and deep learning: How do you intentionally design classroom experiences that hit the surface, deep, and transfer phases of learning?
(2) Which activities are most effective at specific phases of learning? Word sorts, concept maps, close reads, annotations, discussions, formative assessments, feedback, collaborative learning, reciprocal teaching.

 (3) How can the 8 Mindframes for Teachers inspire you to be a change agent in students' lives?
 The authors think: "It's time we embrace the evidence, and update our classrooms." With this Visible Learning book, you can start the process right now!





### From all of us in the Secondary Curriculum Department,







Pelahatchie Pisgah Puckett Richland

TRADITION OF EXCELLENCE