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Supporting the Literacy Development of Striving Readers through Competing Theoretical Perspectives

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Authors' Notes

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Other Languages (GATESOL), and he is the editor of *Focus*, the quarterly newsletter of the Georgia Association of Literacy Advocates (GALA).

Abstract

In this paper, we present educators with the theoretical underpinnings of competing pedagogical approaches to literacy instruction. Given the recent push by many states to universally screen students in the early grades for dyslexia and institute phonics-only standards, we seek to reiterate the importance of a balanced approach. Our purpose is to explain how two contrasting orientations regarding the reading process can together form a framework for providing the best literacy education possible for all students, especially striving readers. We explore both the cognitive information-processing and constructivist perspectives and examine prominent models and theories that inform each approach. Recent research showcasing effective instructional strategies that have emerged from both perspectives is presented, and practical ways that both perspectives find expression in effective classroom practice, including meaningful use of technology, are also delineated. Last, we provide explicit case studies illustrating what literacy support looks like when competing information-processing and constructivist perspectives are blended and how teachers can practically utilize dual approaches to support their most vulnerable students. We join our voices with those of other scholars who call on educators to embrace a holistic, balanced approach to literacy instruction that is informed by various perspectives in their effort to reach striving readers.

Keywords: balanced literacy, effective literacy instruction, striving readers

Supporting the Literacy Development of Striving Readers through Competing Theoretical Perspectives

In this paper, we present educators with the theoretical underpinnings of various pedagogical approaches to literacy instruction. The purpose of this primarily expository article is to explain how two competing literacy theories with differing orientations regarding the reading process can together form a framework for providing the best education possible for *all* students, especially striving readers. We are by no means the first to suggest that more than one approach should be called upon for striving readers, but we are adding our voice to the symphony of voices that have called for similar balanced approaches to literacy instruction (e.g., see Bainbridge & Heydon, 2017; Fisher et al., 2020; Frey et al., 2005; Lombardi & Behrman, 2016; O’Day, 2009; Tarat & Sucaromana, 2014; Velasco, 2012; Willson & Falcon, 2018). This article is a timely reminder of the importance and effectiveness of a blended or balanced approach given the current push by many states to adopt universal dyslexia screeners and phonics-only standards based on what some have described as “the science behind reading” (Gentry & Ouellette, 2019, p. ix).

Despite decades of research into effective reading instruction, students who struggle with reading, or striving readers as we prefer, still make-up a sizeable subgroup of students in U.S. schools, and the numbers appear to be compounding each year (McFarland et al., 2019). Significantly fewer students performed *at or above proficient* in reading in 2019 compared to 2017 on the National Assessment of Educational Progress (NAEP). In 2019, 65% of all fourth-graders and 66% of all eighth-graders scored below *proficient* in reading on the NAEP (NCES, 2019). Viewing the reading process from different theoretical orientations or perspectives can help educators across grade levels and content areas develop a balanced approach to literacy

instruction that can reach all students, including striving readers (Bainbridge & Heydon, 2017; Fisher et al., 2020; Lombardi & Behrman, 2016; Willson & Falcon, 2018).

Both cognitive information-processing models and constructivist theories provide valuable perspectives for understanding the process of reading, explaining potential causes for reading delays or deficits, determining beneficial intervention strategies, and informing classroom instruction. Both perspectives view the reading process as a linear progression of skills with a clear starting point, and both approaches have provided significant classroom implications supported by research that spans decades (e.g., Jones, 1982; O'Day, 2009; Tarat & Sucaromana, 2014). Focusing on just one of these theoretical perspectives naturally excludes the other, which could result in literacy educators shortchanging themselves and their students.

What follows is an exposition of both the cognitive information-processing and constructivist approaches. We first provide background information regarding each approach to orient the reader. We then briefly examine two prominent models or theories that inform each approach. Next, we look at recent research to highlight effective instructional strategies that have emerged from each approach. Last, we bridge the gap between theory and practice by discussing some ways that both the cognitive information-processing and constructivist perspectives find expression in effective classroom practice. We conclude the paper with a brief description of the balanced approach and call on educators to embrace a holistic approach to literacy instruction that is informed by both perspectives in their effort to reach striving readers.

Cognitive Information-Processing Perspective

Developing reading proficiency in students at an early age is a priority. Most would agree that the ultimate goal of reading is to gain meaning from the text. In order to support a robust, critical comprehension of the text, students must be able to read fluently, which includes accurate

and automatic word decoding and recognition. When students struggle in the area of fluency, targeted interventions are necessary to develop the accuracy and automaticity required to support comprehension. Cognitive information processing theories, including Gough's Information-Processing Model (IPM) and LaBerge and Samuels' Automatic Information-Processing Model (AIPM), provide a framework for understanding the importance of decoding and fluency and suggest implications for instruction. These theoretical models reflect a "bottom-up" approach because information-processing moves from lower to higher stages (Tracey & Morrow, 2017, p. 204) with readers starting by identifying letters and words and then processing to understand words and overall text meaning.

Background

The AIPM and Gough's IPM emerged from a cognitive theory of learning which focuses on how the brain processes, stores, and manages information. Cognitive processing perspectives attempt to define or explain the core processes required for individuals to engage in multifaceted mental tasks. Interest in understanding cognitive processes ignited in the 1960s as researchers and theorists moved away from the predominant views of behaviorism and sought to understand and explain the learning process through the framework of cognition (Tracey & Morrow, 2017).

This paradigm shift gave way to new ways of thinking about how literacy skills develop, including the previously unstudied skill of comprehension, "a covert process that takes place in the hidden recesses of the brain" (Samuels, 2006, p. 333). The AIPM applied the cognitive processing perspective to the act of reading. S. Jay Samuels, an educator and researcher, and David LaBerge, a neuropsychologist, developed this model in the mid-1970s (LaBerge & Samuels, 1974).

Philip Gough's IPM also viewed the reading process through a cognitive processing lens. With a background in sociology, psychology, and philosophy, Gough developed an interest in understanding how cognition and linguistics affect reading acquisition, eventually leading him to develop his initial IPM. In 1986, seeking to clarify the role of decoding in the reading process, Gough revised his initial model with William Tunmer and renamed it The Simple View (Gough & Tunmer, 1986).

Selected Models

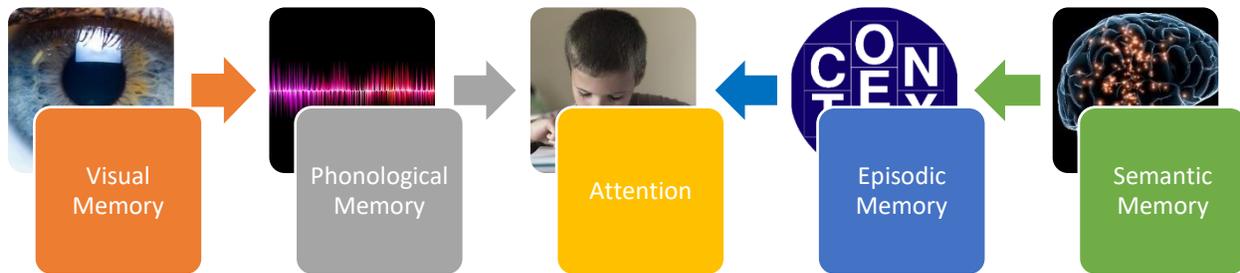
Automatic Information-Processing Model

LaBerge and Samuels' AIPM has been one of the predominant models of reading for the last four decades. At the heart of this model is the desire to explain how print is processed. LaBerge and Samuels (1974) asserted that reading moves from the bottom, which includes letter and word recognition, to the top, which includes word meaning and overall comprehension. Therefore, reading begins as the reader processes the visual print.

The AIPM has five main parts: visual memory (VM), phonological memory (PM), episodic memory (EM), semantic memory (SM), and attention (Tracey & Morrow, 2017). The visual memory component processes the graphic information received as the reader scans the text. Print features are analyzed in order to identify letters. This information then travels to phonological memory where sounds and symbols are paired. Episodic memory captures and notes the context around the targeted print, and this brings the information to semantic memory where comprehension occurs. LaBerge and Samuels suggested that all of these intricate processes depend on attention (see Figure 1 below).

Figure 1

Stages of the Automatic Information-Processing Model (AIPM)



At each stage of the reading process, attention is at the center of information processing because individuals only have a finite amount of attention to use for any given mental task (Schrauben, 2010). According to LaBerge and Samuels (1974), there are two modes of attention: (a) external attention, which is the observable act of attending, and (b) internal attention, which happens within the mind, making it unobservable. Internal attention is central to the AIPM and includes three factors: alertness, selectivity, and limited capacity. Alertness involves a reader actively working to gain meaning from a text. Selectivity involves the practice of choosing what requires attention during the reading process. Limited capacity means that the reader has a limited amount of internal attentional resources to process information from the text (Samuels, 1988, 2004)

Thus, the AIPM suggests that if a reader's internal attention is diverted to the processes involved in decoding and word recognition, there may be little attention left to use for comprehension. As a result, LaBerge and Samuels applied the concept of *automaticity*, which is the ability to execute multifaceted tasks with little attention expended, to the reading process (Penner-Wilger, 2008; Samuels, 1988). An emergent reader gains meaning from the text by switching attention, which is limited, from decoding to comprehending and back again. If readers focus all of their attention on solving words, comprehension cannot happen. Inevitably, the lack

of fluency produces a laborious reading experience and ultimately interferes with understanding. Conversely, fluent readers, who decode and recognize sight words with automaticity, thus little attention expended, will be able to utilize their internal attention to comprehend the text. In LaBerge and Samuels' model, after multiple exposures and sufficient practice, the processing that occurs in visual memory (VM) becomes more automatic and unitization occurs, which is recognizing a group of letters as a word (Samuels, 1988, 2004).

The Simple View of Reading

Gough's initial model, the IPM, also asserted that the reading process moved linearly through specific distinct phases, proceeding from part to whole. Gough suggested that reading begins when the eye registers the input of letters from the text. Gough's initial IPM is very complex and includes several distinct stages (Gough, 1972). Information processing starts with visual input, which captures an *iconic image*. The *scanner* examines the icon and moves to the *character register*. When the character register recognizes the iconic image as a letter, the information moves to the *decoder*. The decoder utilizes a *codebook* to match a phoneme to the symbol. The phoneme transfers to the *phonemic tape* as a sound. The *librarian* puts the sounds of incoming letters together and retrieves the meaning of the word from the *lexicon*. The *primary memory* is responsible for forming sentences. Finally, *Merlin*, the magician, uses semantic and syntactic information to process the meaning of the sentences and they move to the *PWSGWTAU* or "the Place Where Sentences Go to When They Are Understood" (Gough, 1972, p. 302).

Gough later revised his initial model, and it became known as The Simple View. In The Simple View, Gough and Tunmer (1986) attempted to explain the relationship between decoding and the reading process. They suggested that reading was the product of decoding and the comprehension of language, $R = D \times C$ (Figure 2). If a person struggles with either variable, then

reading is not occurring. Therefore, reading is contingent upon both the ability to decode words and the understanding of what those words mean.

Figure 2

The Simple View of Reading Equation (D x C = R)



The cognitive information-processing perspective suggests implications for intervention and instruction, particularly in the area of reading fluency. Fluency includes both decoding accuracy and automatic word identification, which involves blending individual sounds together to read words and acquiring a growing repertoire of high frequency words. Information-processing models posit that readers can develop these skills through multiple opportunities to engage with print (Schrauben, 2010). The instructional practice of repeated reading provides this opportunity. The impact of repeated reading on reading fluency, and overall literacy achievement, continues to be an area of exploration.

Selected Strategies and Interventions

Listening Passage Preview

Swain et al. (2017) evaluated the effectiveness of three different research-based reading fluency interventions, including repeated reading, audio listening passage preview, and listening passage preview. For this study, reading fluency included reading accurately, quickly, and with appropriate expression (prosody). Researchers believed that the use of decoding strategies would produce automaticity and thereby free up internal attention to make or gain meaning. The single-

subject case study focused on one striving reader, a fifth-grade male who demonstrated weaknesses in reading fluency but did not qualify for special education. The student was participating in a Midwestern university clinic that supported students who struggle with literacy and numeracy skills.

Progress monitoring occurred using curriculum-based measures (CBM) that calculated words correctly read per minute (WCPM). The repeated reading intervention involved the student reading a short CBM passage (350–400 total words) twice, each time for one minute. Audio listening passage preview involved the student listening to an audio recording of a passage two times. The first listening was broken into 150-word chunks and the second included the entire passage with no break. Listening passage preview involved the researcher reading a passage aloud while the student listened and followed along. Then the student read the passage on his own for one minute.

All three interventions produced an increase in WCPM. The student's baseline WCPM was 82, which placed him in the 10th percentile for a fifth-grade student based on the norms used. With repeated reading, the student's WCPM increased to 104. The interventions that included a listening component produced the greatest improvement. With both audio listening passage preview and listening passage preview, the WCPM rate increased to 110. While only including one student, this study suggests that instruction and intervention for reading fluency is an essential component of any reading program for striving readers (Swain et al., 2017).

Readers Theatre

Readers Theatre provides an authentic opportunity for students to engage in repeated reading as it involves taking parts and rehearsing as an instructional activity. In their quasi-experimental study, Young and Rasinski (2018) explored the impact of engaging in Readers

Theatre on reading fluency with a group of second-grade students. Much like the previous study, Young and Rasinski defined reading fluency as reading accurately, automatically, and with appropriate prosody. They asserted that comprehension of grade-level texts is more likely when students read with appropriate prosody and students' confidence their reading ability connects to their motivation to read.

The study included 70 second-grade students with 29 students in the treatment group and 41 students in the comparison group. The study took place at an elementary school in the southern U.S. with the largest demographic group being Latinx students. Many of the students were from economically disadvantaged home environments and were multilingual learners (also referred to as English learners). The same classroom teacher taught both groups of students over two years. There were minimal instructional differences between the two groups. The comparison group engaged in 15 minutes of independent reading with texts from their book boxes at the start of each day, while the treatment group engaged in 15 minutes of Readers Theatre activities. Both groups engaged in a 75-minute daily block of reader's workshop that utilized a balanced literacy approach.

Readers Theatre followed a five-day format. On the first day, students selected their script and read it in its entirety. The second day, students met with their group, selected their parts, and practiced together. This practice focused on word recognition and reading accuracy. On the third day, students continued to practice but focused more on prosody with their teacher modeling fluent reading and providing feedback. On day four, students held a final rehearsal with continued coaching and feedback. On the fifth day, students performed for a variety of audiences, which included parents, peers, and other school staff.

The researchers utilized reading fluency measures on the Texas Primary Reading Inventory to assess the pre- and post-word recognition accuracy (WRA) and reading prosody of each of the students. ANOVA results verified that both groups made statistically significant gains in both areas, WRA and reading prosody, but with the group that engaged in Readers Theatre demonstrating greater progress than the comparison group. Engaging students in Readers Theatre can have a positive effect on reading fluency because it involves the repeated reading of text, allows opportunity for peer collaboration, and may act as a confidence booster for many students (Young & Rasinski, 2018).

Letter-Sound Reading

Wolf (2016) studied the progress in letter-sound reading and CVC (consonant-vowel-consonant) word decoding in 44 preschool students across four schools. The study compared the progress of a control group, which received typical instruction in these areas, and a treatment group, which received intensive three-step letter-sound instruction. The researcher believed that to develop decoding automaticity, students needed to practice making print-to-sound connections. The study had three primary goals: (a) determining the effectiveness of three-step letter-sound instruction, (b) comparing the progress of both groups concerning accurate letter-sound reading and accurate CVC word reading, and (c) gaining understanding about the phenomena of learning to read letter sounds and CVC words.

The three-step letter-sound instruction lesson involved the students repeating a letter sound after the teacher, pointing to the correct letter as the teacher read the letter sound (sound-to-print processing), and reading the correct letter sound when presented with a letter (print-to-sound processing). The three-step intervention lasted approximately 3 minutes and occurred

three times each week. Students also read CVC words if they had been able to read correctly 16 letter sounds.

Results showed that preschool students in the intervention group learned to read more letter sounds per week than students in the control group. While four students who participated in the three-step letter-sound intervention group went on to read CVC words by week eight, no students in the control group could decode CVC words by that point. Students who were able to decode demonstrated excitement that they could read, which seemed to increase motivation to learn more. This study suggests that using modeling could be worthwhile when developing early literacy skills (Wolf, 2016).

All of these studies (i.e., Swain et al., 2017; Wolf, 2016; Young & Rasinski, 2018) examined effects on reading fluency, decoding, and automaticity—all foundational literacy skills emphasized in cognitive information-processing models. The goal of each study was for students to develop the ability to read words or letter sounds with accuracy and automaticity. An underlying assumption of the cognitive information-processing perspective is that when word recognition is automatic and accurate, readers can use available internal attention to gain meaning. However, if the goal of reading is to support students with stronger, more insightful interactions with text (LaBerge & Samuels, 1974), then these studies are missing a much-needed additional lens. The studies neglected to assess how or if a student's comprehension of the text or words they were reading improved with multiple exposures as well.

Instructional Implications

Current classroom instruction continues to reflect strategies that are consistent with these cognitive information-processing models. Many supplemental reading programs use the strategy of repeated reading, including Read Naturally (readnaturally.com) and the Fountas and Pinnell

Leveled Literacy Intervention (fountasandpinnell.com). Readers Theatre also engages students in repeated reading that leads to gains in accuracy, automaticity, and motivation (Jones et al., 2016; Young & Rasinski, 2018). Shared reading is another strategy that can have positive effects on reading fluency. In choral reading, students read the text together, often with the teacher reading along as well. A similar strategy, echo reading, involves the teacher reading a passage of text to model accurate decoding, pacing, and prosody and then students repeating or “echoing” the reading. Samuels (as cited in Jones et al., 2016) suggested that both choral and echo reading practices help to build fluency skills in students, which could lead to stronger comprehension.

There are many ways to integrate technology into reading fluency interventions in 21st-century classrooms. In the study by Swain et al. (2017), intervention occurred through audio listening passage preview. Listening to passages read aloud through a media format (audio or audio/visual) is a low-tech option to provide opportunities for independent repeated readings. Audiobooks and online reading platforms, such as Scholastic’s BookFlix® (scholastic.com/digital), offer formats for supported reading, listening, and re-reading of texts.

Using a “flipped” format for instruction or intervention is another option for integrating technology. Using this strategy, teachers could record the reading of a passage of text with instruction or feedback that students could view at home or in the classroom when working at an independent literacy station. There are many options for websites to make the audio or audio/visual recording, including Screencast-O-Matic (screencast-o-matic.com) and VoiceThread (voicethread.com). Students could also learn to record their own reading or repeated readings in order for teachers to provide targeted, specific feedback.

Each of these classroom strategies or interventions would provide opportunities for students to build accurate and automatic word decoding and recognition as well as prosody.

Prosody may have a stronger, more direct effect on reading comprehension because in order to read with appropriate expression and pacing, a student would need to be actively engaged in meaning-making. Reading fluency often functions as the “bridge to comprehension” (Young & Rasinski, 2018, p. 483). As proponents of the cognitive information-processing perspective argue, when readers struggle in the area of decoding, explicit instruction and intervention are required so that readers can move on and focus attention on gaining meaning from the text, which ultimately remains the purpose and goal of reading.

Constructivist Perspective

While bottom-up cognitive information-processing models are oriented to build the skillsets of emergent and striving readers, top-down holistic models can also enhance the literacy support and instruction provided to new readers or students who struggle with reading. Gaining meaning from print remains the ultimate goal of reading a text; meaning can also affect the entire reading process. Another prominent perspective concerning literacy learning, the constructivist approach, suggests that the mechanisms for making meaning do not reside in the print alone. Instead, the reader makes meaning through active engagement and interaction with the text. Through these interactions with text, new knowledge builds upon prior knowledge, leading the reader to engage in higher-order thinking, reasoning, and problem-solving. Constructivist theories of reading provide another framework for understanding and explaining the reading process in which the focus is on the reader’s active role in the learning process (Tracey & Morrow, 2017, p. 204). Several theories have influenced literacy teaching and learning from a constructivist viewpoint, including most prominently Transactional Reader Response Theory (TRRT) and Psycholinguistic Theory (PT).

Background

The constructivist theory of learning underscores the importance of the active creation of knowledge and understanding by the learner. In the 1960s, as cognitive information-processing models gained traction, interest in constructivism also intensified as researchers distanced themselves from behaviorism. Constructivists believed that the process of learning occurred internally with systems or procedures that were often unobservable. Cognitive processing models focus on the internal mechanisms required in learning and approach learning through discrete steps that moved linearly from lower-order to higher-order thinking. In contrast, constructivist theories highlight the importance of higher-level cognition and its influence on lower-level processes (Tracey & Morrow, 2017).

In the 1970s, Louise Rosenblatt's work was in response to ongoing discussion and debate shaped over the better part of the 20th century concerning what determined meaning—the text or the reader (Rosenblatt, 1993). Ken Goodman contributed to Psycholinguistic Theory, which gave way to the WLT in the 1970s. The role of language and language competency in the reading process interested Goodman and influenced his extensive body of research and scholarship. He viewed literacy as an active and even social process (Goodman, 2005).

Selected Theories

Transactional Reader Response Theory

TRRT asserts that readers interact with and respond to a text based upon their experiences. Rosenblatt (1993, 1994/1978, 2013) expanded schema theory to the field of reading. Schema theory attempts to explain how individuals gain and use knowledge. According to this theory, individuals organize all known information into schemata, and these constructs support information by confirming, modifying, or extending that prior knowledge. In terms of reading,

the more background knowledge a reader has, the easier the reader's job will be to read, comprehend, and remember the information. Through the lens of schema theory, texts themselves do not convey meaning to readers but act to stimulate readers to construct their own meaning (Anderson & Pearson, 1984).

Building upon schema theory, Rosenblatt believed that the experience of reading a text was unique to every reader. She argued that the reader does not extract information from the text but *transacts* with the text—bringing something to the reading that is unique and personal. She believed that a reader's response to the text was contingent upon the prior knowledge of the reader (Rosenblatt, 1993). Rosenblatt's TRRT suggested that readers respond to texts in two different ways: *efferent*, or fact-based responses; and *aesthetic*, or personal, feeling-driven responses. Rosenblatt (2013) asserted that when students respond aesthetically to a text, they are making meaning through emotional connections based on their lived experiences. Some have argued that without the aesthetic response of the reader, comprehension is not fully achieved (Pennell, 2014). TRRT highlights the role of the reader in meaning-making.

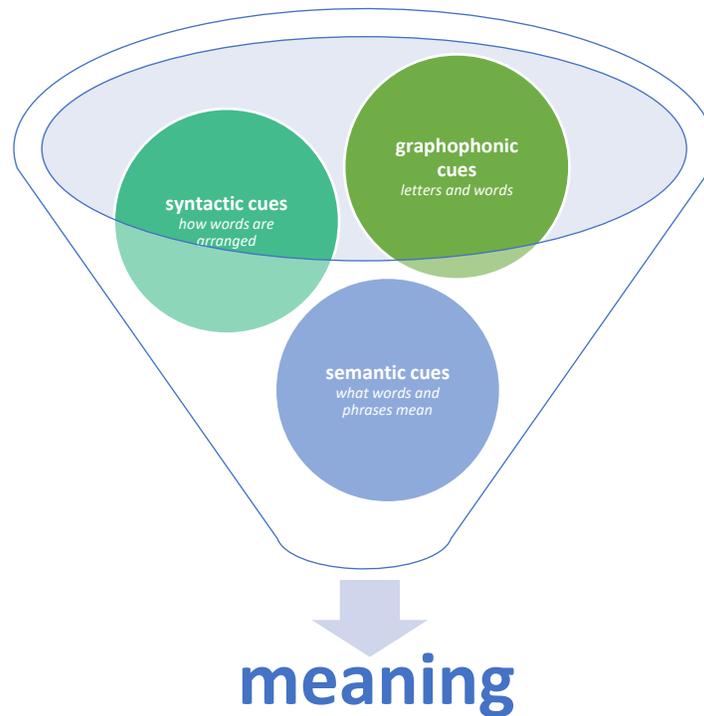
Psycholinguistic Theory

Ken Goodman and Frank Smith developed the Psycholinguistic Theory (PT) in order to understand how students learn to read. Psycholinguistics examines the relationship between basic psychological processes and linguistic behavior (Goodman, 2005). As a result, reading becomes a language process. Goodman (1967) identified three language cueing systems that readers utilize and rely on as they make sense of print and interact with the text (Figure 3). Graphophonic cues are those related to the visual patterns of print. The grammatical structure of the text provides syntactic cues, and semantic cues come from the meaning or context of

the text. PT suggests that readers use these cueing systems to solve words and comprehend the text.

Figure 3

Three Cueing Systems of the Psycholinguistic Theory



When determining the meaning of unknown words, PT asserts that readers rely heavily on their predictions or hypotheses about what an unknown word will be based on their schemata or prior knowledge of language, print, text structure, or the context of the text. In order to understand what cueing systems students are utilizing or neglecting when reading, PT emphasizes miscue analysis. Goodman devised the word *miscue* to represent an error or a discrepancy between what the reader was expected to say and what the reader actually said (Goodman, 2005). According to Goodman, an analysis of these miscues can yield valuable information about how students process. As a result, PT highlights the importance of engaging

students in reading authentic texts rather than controlled texts. It also emphasizes the reader as the meaning maker rather than meaning residing in the text; readers construct meaning during their transactions with the text (Goodman, 2005).

Selected Strategies and Interventions

Scaffolding for Word Solving

Scaffolding is an instructional practice in which teachers provide temporary support until students acquire a skill and can perform independently. Rodgers (2016) studied the amount of and type of scaffolding that teachers provided students during the process of solving words or decoding. Rodgers sought to determine how best to operationalize the practice of scaffolding while studying variances in the help teachers provide at the point of difficulty and how these differences might affect student progress. The study focused on two contingencies: instructional contingency is the amount of support a teacher provides to a student at the point of difficulty, and domain contingency is the focus of that support. Rodgers collected videos of Reading Recovery (Clay, 1987) lessons that captured interactions between teachers and students. These interactions reflected the exchanges that occurred when students encountered difficulty with decoding. The video clips fell within two groups: (a) students who demonstrated higher than average outcomes based on national Reading Recovery data and (b) students with lower than average outcomes.

Informed by the work of Goodman (1967, 2005), the study asserted that students utilize cueing systems (meaning, structure, and visual; see Figure 3 above) when attempting to problem-solve unknown words. From this psycholinguistic perspective, teachers should prompt students to use the cueing system neglected by the reader at the point of difficulty rather than defaulting to just one specific system. A rubric was utilized to measure the level of scaffolding provided

(more or less support given depending on need). The support was determined to be domain contingent if the teacher prompted the student to use the neglected cueing system.

Findings showed that teachers provided the appropriate amount of support over 60% of the time for both groups. However, for the group of students performing higher than the Reading Recovery average, the teachers were eight times more likely to provide domain contingent support, prompting students to use the neglected cueing system. Providing this type of scaffolding may have a significant effect on student performance. Taking running records and analyzing this data is one way to look for trends in what cueing systems students are most often using and neglecting. Overall, this study underscores the importance of being intentional in the type of support provided to students to enable them to construct new knowledge about words (Rodgers, 2016).

Strategies for Miscue Self-Correction

PT suggests that analyzing reading miscues provides valuable information about how the reader is processing print. Additional information can be derived from examining what strategies or cueing systems the reader is using when correcting those miscues. The self-correction of miscues has important implications. When significant reading errors occur and remain uncorrected, those errors can interfere with the student's ability to make meaning. As such, Kucer (2017) studied the strategies that students utilized when correcting or attempting to correct their reading errors. The study sought to determine if there was a correlation between the chosen strategy and the successful or unsuccessful correction. A skilled reader might utilize several strategies, including reading past the error and then returning, re-reading the portion of text that came before the error, using visual information to "sound out" the word, using text features and pictures, or substituting a different word for the error.

The study involved fourth-grade readers ($n = 34$) who were reading on grade level. Students had the same degree of sufficient background knowledge for the fiction text they were given. The researcher recorded running records in one-on-one sessions with students, documenting 1,167 miscues. Analysis showed that students employed three main strategies—rereading, reading on, and sounding out—and they corrected 81% of their miscues. The results of the study indicated that students successfully corrected 45% of miscues at the word level (sounding out) and 53% using context or meaning. Conversely, 67% of unsuccessful attempts happened at the word level, and 33% of attempts used contextual information.

The study showed that proficient readers are selecting an appropriate strategy to self-correct the majority of the time. Using meaning or context when attempting to problem-solve unknown words is as equally important as relying on graphic information or the strategy of sounding out words, which underscores the importance of building schemata or background knowledge when supporting striving readers (Kucer, 2017).

Discussion-Based Reading Intervention

Close reading of a text or passage is a commonly used instructional practice that supports readers as they extract key pieces of information from a text. Close readings usually focus on what Rosenblatt (2013) termed *effere* responses (fact-based or acquired information) rather than *aesthetic* (emotional or personal) responses, which Rosenblatt and other constructivists suggest is the more meaningful connection, as they are likely to lead to a more critical or reflective discussion of the text. For students who struggle with deeper-level comprehension, helping them make meaningful connections with texts could be a vital component of support. As such, Pennell (2014) developed an intervention study that utilized an inquiry-based approach to determine if engaging students in philosophical critical thinking and reasoning about a text

would have a positive effect on overall reading comprehension. The assumption was that philosophical inquiry permits readers to leverage their prior knowledge to make meaning. The intervention study included four third-grade males who were identified as striving readers.

Students received training for dialogic discourse techniques for two weeks. Pennell used components of a curriculum called Philosophy for Children (P4C) as the framework for the dialogic discourse. In addition to this framework, Pennell provided explicit instruction for story vocabulary and engaged the students in interactive story mapping. The daily intervention also included generating a list of questions or issues from the text, selecting a question to explore and generating hypotheses, discussing the validity of the hypotheses, and deciding on the most plausible possibility. The researcher facilitated the discussions by posing questions, encouraging the elaboration of ideas, and supporting the students as they explored and connected ideas. The group focused on problem-solving rather than achieving correctness. The intervention lasted for four months, and the group met four days each week for 35 minutes each session.

The study showed that students did demonstrate rich, critical analyses of the texts. The study confirmed that the philosophical framework supported students with using experiential knowledge to form opinions, engage in debate, draw conclusions, and integrate new ideas. Each student demonstrated improvement on the *Qualitative Reading Inventory-5* (Leslie & Caldwell, 2010), and all four students improved a whole reading level. Pennell's post interviews with the students suggested that they viewed their discussions as a means to construct knowledge, which represented a shift in thinking for the students. This study supports the constructivist viewpoint that activities that help students make meaningful connections with texts lead to active engagement and propel them toward higher levels of thinking, reasoning, and problem-solving (Pennell, 2014).

Instructional Implications

Constructivist literacy theories have influenced many current classroom practices and instructional strategies. Background knowledge or schema is a vital component of what the reader brings to the reading process and serves as a “road map” that supports the active construction of meaning or story comprehension (Neuman et al., 2014, p. 146). Many instructional activities help build background knowledge, including categorizing words, exploring comparisons and contrasts, using analogies to explain or describe things, and encouraging or allowing students to read texts on a wide variety of topics that interest them. Graphic organizers such as KWL charts (bit.ly/2UOS7Sc) help elicit and build background knowledge by charting what students already know (K) about a topic, what they would like to know (W), and later adding what new information they have learned (L; Neuman et al., 2014).

Brainstorming activities, such as webbing, allow students to organize prior and new knowledge into relevant and meaningful categories. Webbing activities are also a great way to integrate technology into classroom instruction. Several websites offer free brainstorming platforms where whole groups, small groups, or individual students can create information or semantic webs, including Bubbl.us (bubbl.us) and ReadWriteThink (readwritethink.org). For students who lack specific experiential knowledge, engaging in virtual field trips, such as those freely available through Discovery Education (bit.ly/3bDCbb8), can be a way to build that knowledge and integrate technology in the classroom.

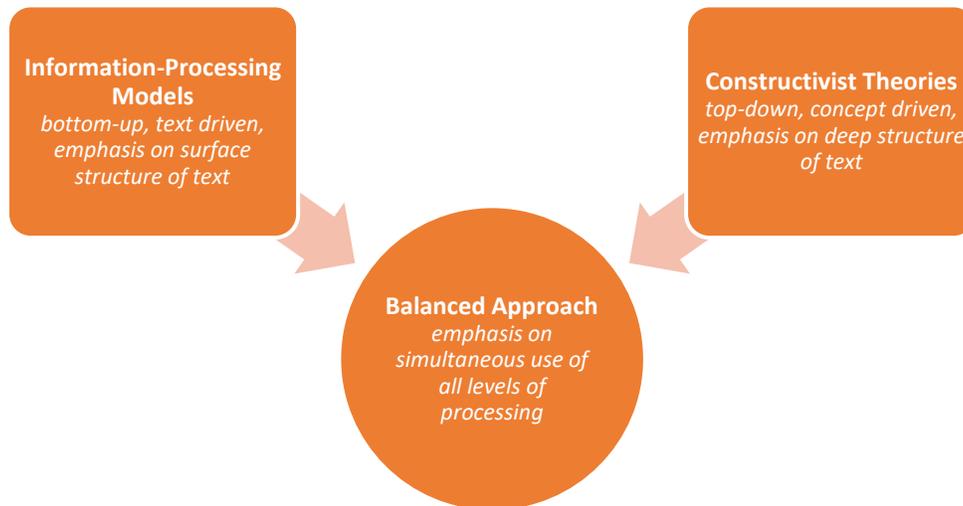
TRRT suggests that capitalizing on students’ aesthetic responses to texts supports the meaning making process and provides a doorway to higher levels of critical thinking and text analysis. There are many classroom applications for fostering both efferent and aesthetic responses and connections to texts. Common practices include keeping a reading response

notebook (bit.ly/38q9DQD) in which students can journal after reading a passage or book (Kesler, 2018). Literature circles (bit.ly/38p0NT3), where students meet in small groups to engage in dialogic discourse after reading a text, are often the catalyst for deeper critical thinking, inquiry, reflection, synthesis of information, and even socioemotional growth (Venegas, 2019). Post-reading novel activities, such as engaging in Readers Theatre (Young & Rasinski, 2018), creating a story map or story box, or using puppetry arts, are other ways to develop and leverage students' efferent and aesthetic responses (Tracey & Morrow, 2017).

PT emphasizes the importance of assessing and analyzing student reading which provides valuable information on what processing or cueing systems students are using or neglecting during the reading process. Fountas and Pinnell (2018) suggest that teachers need a variety of methods and practices for observing and assessing student reading behaviors. Observation and assessment can occur informally during the instructional practice of guided reading and when listening to individual students' reading and capturing information about decoding, fluency, and comprehension via a running record. Teaching decisions often happen in the moment, but observation and assessments should drive these teachable moments. Time spent observing and assessing reading behaviors must lead to intentional, responsive teaching (Fountas & Pinnell, 2018). Rodgers (2016) suggested that teachers examine their own practices of prompting and scaffolding instruction by videotaping their interactions with students to ensure that they are offering the appropriate amount of support but also targeting that support to specific, observable needs. Examining instructional practices through a constructivist lens will enable teachers to select and utilize best practices in reading instruction for supporting the active engagement and meaning-making of striving readers.

Blending Perspectives

Operating from a stance that includes both the cognitive-processing and constructivist theoretical perspectives provides the most advantageous and balanced approach that can potentially reach the greatest number of students (Mondesir & Griffin, 2020). While both the cognitive information-processing and constructivist perspectives have significant merit, neither is sufficient alone, especially for emergent or striving readers. A blended approach provides the best of both competing approaches, where higher-level thinking, reasoning, and understanding interact with lower-level skills like letter and sound recognition, decoding, and word recognition (Tarat & Sucaromana, 2014). These skills are connected and can be used simultaneously throughout the reading process. Balanced models of reading combine more than one perspective (Figure 4). A large body of research suggests that a balanced stance provides a better understanding and description of the reading process than the information-processing or constructivist approaches do alone (e.g., Bainbridge & Heydon, 2017; Fisher et al., 2020; Frey et al., 2005; Lombardi & Behrman, 2016; O’Day, 2009; Tarat & Sucaromana, 2014; Velasco, 2012; Willson & Falcon, 2018).

Figure 4*Three Orientations Concerning Literacy Acquisition*

An amalgamation of both the information-processing and constructivist orientations, balanced reading models involve simultaneous cognition and perception (Rumelhart, 1994). The reader is free to use information from multiple sources, including logographic, graphemic, phonemic, morphemic, orthographic, semantic, lexical, syntactic, and schematic (Dechant, 2009/1991). Text processing supports both higher level (meaning) and lower level (decoding, word recognition) thinking throughout the reading.

Many instructional strategies that focus on a bottom-up information processing approach carefully attend to letter identification, letter sounds, decoding, and word recognition, while only minimally supporting vocabulary and comprehension. Utilizing reading word lists or controlled texts, while beneficial for emergent and striving readers who need targeted exposure to the mechanics of decoding and sight words, does not leave opportunities to engage in rich-text readings and literature discussions. Conversely, strategies that utilize a top-down constructivist perspective exclusively often engage students in what Goodman (1967) called the “psycholinguistic guessing game” (p. 126), which involves making hypotheses about unknown

words encountered in the text. This process requires copious amounts of attention and background knowledge and may leave striving readers feeling frustrated. As such, effective balanced literacy instruction for striving readers should blend teacher-directed instruction of skills, strategies, and processes with student-directed tasks centered on authenticity, choice, and meaning (Frey et al., 2005).

Case Studies: What Blending Perspectives Looks Like

In settings where dual approaches are utilized, striving readers can potentially receive the specialized support they need to become successful readers. What follows are three brief case studies. In each of these scenarios, the three students (Jamal, Angélica, and Kayla) could be classified as striving readers. The purpose of this section is to illustrate what literacy support looks like when competing information-processing and constructivist perspectives are blended and how teachers can practically utilize dual approaches to support their most vulnerable students. In doing so, we reference the specific strategies and technology discussed earlier in the paper, showing how one or two strategies per student can be used to support the student.

Jamal

To illustrate our point, let us first consider Jamal, a third-grade student whose assessment results have consistently shown that he struggles with comprehension and fluency. Jamal's teacher is concerned because she has tried everything in her instructional toolbox to promote Jamal's literacy development. However, because of her strong orientation toward constructivist or Whole Language approaches, Jamal has fallen through the cracks. Examining Jamal's reading difficulties through a cognitive information-processing lens as well might lead his teacher to a better understanding of how Jamal is processing print and at what stage his reading is breaking down.

Jamal's poor fluency is an indicator that he is struggling with decoding accuracy and automatic word retrieval, which are foundational reading skills that comprehension depends upon (Swain et al., 2017). Improving fluency would ultimately support Jamal in making essential connections with a text and constructing a deeper sense of its meaning. A bottom-up approach to building fluency would include providing repeated exposures to a text and allowing ample opportunities for practice. Utilizing the strategies of repeated reading combined with opportunities to preview passages by listening to an oral reading of the text as described by Swain et al. (2017) would be a way to balance the framework for literacy instruction in Jamal's classroom.

In addition, daily reading workshop rotations could easily incorporate listening passage previews by utilizing available technology. Jamal's teacher could record an oral reading of a text directly on a classroom device or by using a digital platform such as Screencast-O-Matic ([screencast-o-matic.com](https://www.screencast-o-matic.com)) or VoiceThread ([voicethread.com](https://www.voicethread.com)). Given some training on the procedures of the listening station, Jamal would listen to the passage while following along with his own copy for one or more times before reading the text on his own. The modeling provided through the listening passage preview should strengthen Jamal's decoding accuracy and automaticity while allowing him to focus more keenly on comprehending the text (Swain et al., 2017). Later, during small group instruction or conferencing with his teacher, Jamal could engage in critical conversation about the text on a deeper level, which will support his construction of meaning and his transaction with the text. In Jamal's case, a blended approach would capitalize on his teacher's tendency to view the reading process strictly through a constructivist lens and focus only on the deep structure and content of the text while also

providing targeted daily intervention to develop Jamal's fluency skills, which integrates a cognitive-processing perspective.

Angélica

Next, we draw the reader's attention to Angélica, a fifth-grade bi/multilingual English learner whose standardized test scores in reading are not at grade-level. She receives specialized reading instruction in a remedial reading classroom where the teacher utilizes a structured, systematic phonics program. While Angélica has made progress in the areas of decoding and encoding, she continues to struggle to demonstrate adequate comprehension, so her reading level has remained the same for several months. Concerned by the fact that Angélica is preparing to transition to middle school, her teacher provides additional word lists and controlled reading passages for drill and practice and is surprised to see that Angélica's engagement is waning.

Supporting Angélica as a reader through a balanced, or blended, approach to literacy would involve combining her current phonics instruction with opportunities to select and read richer texts and engage in thoughtful text discussions. A discussion-based reading intervention, such as that described by Pennell (2014), utilizes a practice similar to that of *close* reading, which involves both a careful examination of the details of the text while also exploring the reader's personal response and connection to the text. The framework of the discussion-based reading intervention involves a read aloud text, building word knowledge through explicit vocabulary instruction, interactive story mapping to explore questions and issues from the text, and teacher modeling of and facilitation of student discourse. Angélica, as a striving reader and an English learner, would undoubtedly benefit from the language scaffolds provided through this intervention and may experience increased engagement due to the meaningful exploration of ideas and peer interactions that are not afforded by a phonics-only approach.

Pennell's (2014) research revealed that facilitating exploratory text discussions fosters critical thinking and reasoning, even with striving readers. Classroom literature circles (bit.ly/38p0NT3), discussed earlier in this paper, provide a natural format for implementing this intervention in Angélica's reading remediation classroom (Venegas, 2019). Several digital tools would support the component of interactive text mapping, including Student Interactives (bit.ly/3c29vI8) from ReadWriteThink. A balanced approach to reading instruction in the case of Angélica melds the bottom-up approach to word study and vocabulary instruction with copious amounts of time allotted to the guided reading of more-complex texts while supporting the construction of knowledge and higher-level text comprehension through carefully facilitated classroom discussion.

Kayla

Last, we share an anecdote about Kayla, a student with exceptionalities who is in an inclusion class with readers at differing reading levels. Kayla is a first-grade student who specifically struggles with decoding. She demonstrates weaknesses in phonemic awareness and phonics that affect her ability to learn and remember individual letter-sound correspondences. Instruction in Kayla's classroom typically encourages the memorization of high-frequency words and the use of semantic cues, often text illustrations or photographs, to determine unknown words in text.

A blended approach to reading that calls upon both cognitive processing and constructivist perspectives for Kayla should start with explicit, systematic instruction for letters and letter sounds, which leads to "letter-sound reading" (Wolf, 2016, p. 12). The three-step print to sound processing intervention described by Wolf (2016) includes the student repeating a letter sound after teacher modeling, pointing to a letter whose sound is read by the teacher, and reading

a letter or CVC word (by producing or blending sounds) presented by a teacher. This intervention, requiring just a few minutes each day, yields great results and is bolstered by research that grounds instruction for print-to-sound processing in explicit instruction and opportunities for cumulative decoding practice (Wolf, 2016). Pairing these intervention procedures with opportunities for additional practice using an educational computer application such as Starfall (starfall.com) would be beneficial for Kayla.

In addition to the letter-sound reading intervention, providing a scaffold for solving words during guided reading could employ higher-level thinking skills in the process of decoding. From the work of Rodgers (2016), we learned that the amount and type of prompting and support given to students at the point of difficulty when attempting to solve a word matter. Rather than consistently focusing on the semantic information offered in a picture cue, Kayla's teacher should prompt her to use a cueing system that she has neglected to use, such as visual or syntactical information. In order to understand which sources of information Kayla is using or not using when solving words, her teacher should take and analyze a running record (Fountas & Pinnell, 2018; Rodgers, 2016). This information will allow Kayla's teacher to adjust the type and amount of prompting she is providing to align with Kayla's specific needs. Combining explicit letter-sound instruction with scaffolding that encourages the use of multiple sources of information when solving words reflects a balanced instructional approach to address Kayla's decoding weaknesses.

A Call to Action

By understanding the various models and theories associated with each perspective, including the strengths and limitations of each, educators can be intentional about the strategies they select. The value of incorporating a structured, sequenced, systematic (bottom-up) approach

for teaching phonics is indisputable, especially for striving readers (O'Day, 2009). Similarly, the importance of students transacting with texts and using their schemata and text cues, including visual, syntactic, and semantic information, to decode and understand unknown words in the text, which supports overall text comprehension, is also evident (Lombardi & Behrman, 2016). A balanced approach to literacy instruction and support for striving readers combines direct, explicit instruction with opportunities for students to construct new knowledge and add to their existing schemata for enhanced reading skills (Jones, 1982). Balanced approaches span more than one perspective to make literacy accessible for the most considerable number of students, including striving readers. We, therefore, call on educators across grade levels and content areas to embrace a holistic, balanced, or blended approach to literacy teaching for all students, especially our most vulnerable students.

Moreover, because the opponents of balanced literacy wish to disguise their distrust of balanced approaches under the label of “science,” we should seek to build the scientific base for the effectiveness of balanced approaches. Of course, we are all committed to the scientific method, but as social scientists and educators, we recognize that teaching and learning, especially the reading process and literacy development, are complex processes that cannot be easily boxed into dichotomous yes-or-no categories of *effective* or *ineffective*. Therefore, we call on researchers to continue exploring the juxtaposition of these competing perspectives through robust and rigorous scientific studies with control and experimental groups of students who receive instruction through phonics-only approaches versus balanced approaches as well as case studies and other anecdotal studies.

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