Listening to Yourself Reading

Exploring the Influence of Auditory Input in Literacy Processing

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Listen, learn, change.
— David Gergen (2011)

How do children learning to read and write benefit from listening to themselves as they read? Why is having children read aloud such a powerful practice in early literacy instruction? In this article, I argue that the auditory input provided by the sound of the reader's voice as he reads aloud is a multifaceted asset to the reader in the formation of a literacy processing system. The reader can utilize this auditory contribution to self-monitor in a variety of ways: identify and sort letter/sound relationships; solve words in isolation and in continuous text; and monitor the fluency of one's own reading. As well, self-directing talk during reading may reveal glimmers of the beginnings of inner, self-regulatory speech for the reader. I discuss how listening to oneself reading can contribute to the development of more-flourishing literacy processing amidst several dimensions—drawing examples from the context of Reading Recovery lessons—and point to prompts from Clay asking children to listen to themselves as they learn to read and write.

A review of research finds that several authors have examined the value of children listening to themselves reading. Reutzel, Jones, Fawson, and Smith (2008) cite studies that sharply criticized the use of sustained silent reading for developing readers, finding that oral reading provided the reader more useful feedback to empower his reading development.

Another large group of studies (as cited by Charlesworth, Charlesworth, Raban, & Rickards, 2006) identifies that learning to read is a very difficult process for many children with hearing loss, as they have limited or no access to the sound of their own voice. More specifically, listening to one's reading has been examined as a contributor to reading development in a variety of ways.

Listening to what one is reading has been described as foundational to self-monitoring by several authors (Bomer, 2006; Clay, 2005b; Pearson & Fielding, 1991). Mature reading requires complex processing of meaning from text and the reader's knowledge. "When we began to pay attention to what was going on inside our heads as we read, we were amazed at what we learned about ourselves as readers. We were making connections, asking questions, drawing inferences, and synthesizing information" (Miller, 2002, p. 9). Routman (2003) argues that self-monitoring is essential in developing reading comprehension. Clay also strongly asserts that self-monitoring must be fostered from the onset

Fluent readers can more expediently consider meaning and solve problems because they read texts in a more-balanced fashion (not relying solely on visual cues), which empowers them to narrow the number of upcoming meaningful and probable alternatives as they read through texts (Clay, 1991).

of literacy learning. Noticing mismatches for oneself, then rereading at points of confusion, is the single most-effective strategy we can teach readers of all ages.

Authors (Chapman, 2003; Fried, 2006; Both-de Vries & Bus, 2008; Rasinksi, Rupley, & Nichols, 2008; Purcell-Gates & Tierney, 2009) have concluded that children construct links between letter and sounds as a result of direct instruction in phonics and, more readily, through the experiences of hearing and seeing letters and sounds as they learn to read and write continuous texts. By seeing and hearing sounds as they learn to write, Askew and Frasier (1999) suggest that through the experience of successful reading "children acquire a considerable amount of knowledge about words, about letters/letter clusters and their sounds, and about the orthography of the language" (p. 43). The sound of one's voice, printed letters, and the sounds associated with letters seem firmly tied together as a child begins to construct a literacy processing system.

Children should also listen to their reading to determine if they are reading fluently (Richards, 2000; Clay, 2005b; Politano, 2005). Fluency instruction is viewed as effective in improving the reading achievement of children (Kuhn & Stahl, 2003; Kuhn & Schwanenflugel, 2006), but children need to become independent in monitoring their own reading. "The ultimate goal of specific teaching approaches for phrasing in fluent reading is to have the child listen to how the reading sounds and judge if it is phrased and fluent" (Briggs & Forbes, 2002, p. 8). To read fluently, one must consider how the author intended words to come together meaningfully. The required meaning and structural information to read in a phrased and fluent manner fortify children's predictions of what is coming up in the text (Briggs & Forbes; Miller & Schwanenflugel, 2008). Fluent readers can more expediently consider meaning and solve problems because they read texts in a more-balanced fashion (not relying solely on visual information), which empowers them to narrow the number of upcoming meaningful and probable alternatives as they read through texts (Clay, 1991).

Finally, a body of research describes the development of an inner voice as a mediator of reasoning and action during reading and writing. Vygotsky described this notion of internalization:

> Every function in the child's cultural development appears twice: first, on the social level, and later on the individual level; first, between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formulation of concepts. All the higher functions originate as actual relations between human individuals. (as cited by Zuckerman, 2004, p. 12)

For older, proficient readers, think-alouds (Cunningham & Allington, 2007; Routman, 2008) are suggested as a means for the teacher to model thinking like a reader, in hopes of sparking children to begin to think in these ways: "Two voices are really speaking as we read. The voice you can usually hear is your voice reading the words but inside your brain is another voice telling you what it thinks about the material you are reading" (Cunningham & Allington, p. 121). Bomer (2006) states that teachers "bring forms of that thinking to the outside, where students can get to them. [Teachers] externalize the sorts of thinking readers do so that [students] can internalize those mental actions" (p. 524).

Young literacy learners grow in their ability to self-regulate, but this differs from developing meta-cognition; that is, an awareness and ability to articulate the nature of one's thinking processes or respond to the question "How did you know?" Clay preferred to frame this concept in terms of "tacit awareness, rather than an explicit knowledge" (Clay, 1998, p. 48) that a child could discuss. Therefore, Clay (2001) challenged pursuing meta-cognitive discourse with children just learning to read:

> While this might be conceptually valid when discussing the reading of older children, my studies of proficient young readers suggest that it is not appropriate to teach for that type of meta-cognitive awareness in five- to six-year-old children. Most things we do as readers need to operate below the conscious level most of the time so that fast and effective processing of the print is achieved and attention is paid to the messages rather than to the work done to get the message. (p. 127)

In this article, I am not suggesting that Reading Recovery teachers pursue such meta-cognitive-directed teaching as they seek to foster independence within their students. However, I acknowledge that some beginning readers occasionally demonstrate, through conversations with themselves, very early stages of awareness of some of their actions within a growing processing system.

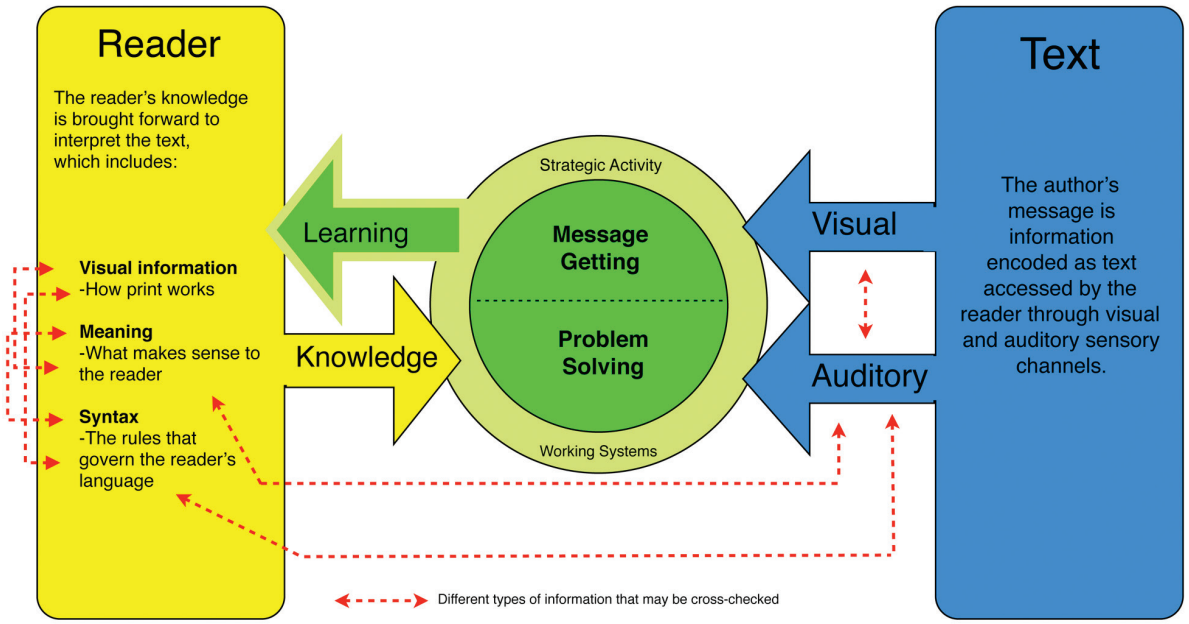
The Auditory Input Provided by the Reader's Voice

With the definitive goal of fast perceptual processing in mind, Clay (2005b) considers "sounds" (p. 112) or auditory information, coming from the sound of the reader's own voice as he reads aloud, as a source of information the reader can draw upon when getting the message from a text. Arguably, this source of information is the least discussed by Reading Recovery professionals, who sometimes refer to only three sources of information available to the reader (M-S-V or meaning, structure, and visual). Perhaps because sound information has no standard reference in the analysis of running records (Clay, 2002), sound information is often lumped together and implied in our discussion of visual information. However, I contend that Clay's orphaned cloud (sound information) merits more of its own direct exploration and discussion. While it seems that Clay's diagram (2005b, p. 112) refers to sounds in terms of letter/letter cluster/word/sounds relationships, the sound of the reader's own voice as he reads, or an *auditory sensory channel* carries other types of input to the reader as well.

Clay (2005a, p. 43) asks us to take this into account: "Everything we do in mature reading and writing will rely on fast accurate perception of language sounds (captured by the ears) and visual symbols (captured by the eyes)." This assumption supports that a beginning reader, who is reading aloud, draws information from the text through two sensory channels: visual and auditory (Figure 1). As the child reads, his eyes are searching through the arbitrary symbols of print and generating a spoken response. As sounds or words are generated, the child can listen to the sound of his own voice to weigh up what he has just said against his general knowledge, the plot of the story (meaning), spoken language (structure), and the text symbols he is seeing (visual). It may assist our appreciation of the vast complexity of this task by considering the multiple sources of information that a fledgling reader has both to draw upon and manage as he reads.

Clay assumes that "we create networks in the brain linking things we see (print on a page) and things we hear (the language we speak). Messages flow in and out of these networks" (2005a, p. 1). Accumulated interactions and problem solving with text (especially successful ones) lead the reader to generalize from the experiences — to learn more about reading processes and features of print or add to other areas of their knowledge. Challenges arise when the novice reader is faced with the demanding task of considering and coordinating information from several and often, unfamiliar sources.

Figure 1. Sources of Information Available to the Beginning Reader Author's illustration



Did That Make Sense? Self-Monitoring for Meaning

Through accumulated experiences hearing themselves read aloud, children become more capable of independently self-monitoring their own reading if they learn to pay attention to what they are saying as they read. "The response to be learned is checking on oneself. It is important at this stage that the child come to check on his own behavior" (Clay, 2005b, p. 108).

Child 1: (reading) I am good at *fishing* mushrooms (starts to turn page)

Teacher: (puts her hand on the book and stops the child from reading on) Hello? You said, "I am good at *fishing* mushrooms." Does that make sense?

Child 1: No.

Teacher: When we're reading it always has to make sense. Try that again and think what would make sense.

Child 1: (rereads) I am good at… *finding* mushrooms. (stops and looks at teacher)

Teacher: You tell me. Does that make sense now?

Child 1: Yes.

Teacher: That's right, but you have to make sure what you're reading is always making sense to you. Make sure on this next page.

Child 2: (reading) "Look down here," he said. "Two baby *chickens*…"

(to himself) Those guys aren't *chickens*…

(rereads) "Two baby *chicks*!" said Mother Penguin.

(to himself) *Chicks* not *chickens*; (laughs) that would be dumb. (continues)

In the examples, the first child does not seem to self-monitor a passage that did not make sense. The teacher praises his correction, but emphasizes reminding the student that he needs to listen to the message as he reads. Rather than only making moves to revise when the teacher points out errors and checking his attempts at corrections by looking to the teacher, there would seem to be much to gain if the first child gained confidence and skill in monitoring for himself.

The second child does seem to notice when the story isn't making sense. When he first substitutes chickens for chicks, he immediately slows down and comments on what he is thinking. Encouragingly, the student has listened to what he read and realized that in a story about penguins set in the Antarctic, chickens would not make sense. A strong working system would seem to hinge on the development of this inner monitoring and more critically, the reader's awareness of its usefulness.

Can You Say it That Way? Self-Monitoring for Structure

Children can also listen to themselves and attend to the grammar of the language as they read.

Child: (reads) Biff *pushed* to the door? (raises voice at end of sentence as a question then quickly rereads)

Biff *went* to the door.

(Illustration shows Biff pushing on the door)

It would seem in this example that the child realizes by the end of the sentence that the structure is not sounding right. The child's voice indicated uncertainty, which was followed by a move to reread and search for further information. While *pushed* was a meaningful response given the illustration, when the child listened to himself follow the substitution with the prepositional phrase "to the door" it appeared as though the child was unhappy with the structure and moved to try something else.

If a child mistakenly comes to believe reading is only about solving words, she may not learn to listen to or make use of the input from her voice to keep track of the meaning and structure as she reads aloud. Bringing the child's attention to self-monitoring by listening to her own reading voice (Table 1) may lay the groundwork for the development of a working system that self-monitors and constructs meaning from text.

If a child does not capitalize on the information available from his own voice as he reads and disregards it, as one would elevator music, then he

Table 1. Some Prompts to Attend to Auditory Input to Self-Monitor in *Literacy Lessons Part Two* (Clay, 2005b)

Page	Prompt in Reading	Child Activity and Strategic Activity Implied
108	*Why did you stop? What did you notice?*	Confirm self-monitoring for meaning or structure (Replay, listen, and think about what you said)
110	*Does that make sense?*	Self-monitor for meaning (Replay, listen, and think about what you said)
111	*You said… Can we say it that way?*	Self-monitor for structure (Replay, listen, and think about what you said)
111	*You said… Does that make sense?*	Self-monitor for meaning (Replay, listen, and think about what you said)
111	*What's wrong with this?* (repeat what child said)	Self-monitor for many sources (Listen to teacher and think about what you said)

runs the risk of becoming a reader who reads accurately but has little or no comprehension of the text. To become proficient readers, children must constantly listen to themselves and ask themselves about the message they are getting from the text: What does this mean to me? Does that make sense?

Are You Hearing What You're Seeing? Self-Monitoring/Cross-Checking Auditory With Visual Information

The physical act of reading aloud produces two sensory channels, what the reader sees and what he can hear. Clay suggests, "different kinds of information may be checked, one against another, to confirm a response" (2005b, p. 112). This sensory input (visual and auditory) could therefore be used to cross-check: Am I seeing what I'm hearing? Am I hearing what I see? Clay would add that the reader is further faced with an immense task of drawing upon his knowledge to construct meaning from what is being read. For a beginning reader, this would include his understandings of how letters and words work (visual information); what is possible, probable, and meaningful (meaning); and the rules of his spoken language (structure.) Each of these types of knowledge could be checked—one against the other—to make or confirm a decision, and Clay provides several prompts that direct children to engage in cross-checking of information. Many of these prompts (Table 2) ask the children to confirm if they are hearing what they see, or seeing what they hear, by cross-checking the auditory and visual information.

Ideally, when reading aloud, the incoming visual and auditory signals are constantly and rapidly referenced against each other, drawing upon the reader's knowledge of how print works visually and what a symbol or word signifies to the reader. For one beginning to construct a literacy processing system, cognitive resources must also be allocated to the assembly of working systems (Clay, 2001) and thinking strategically (Clay, 2005b). A working system may have to be temporarily pulled together to ensure that what the reader sees

Table 2. Some Prompts to Attend to Auditory Input to Self-Monitor in *Literacy Lessons Part Two* (Clay, 2005b)

Page	Prompt in Reading	Child Activity and Strategic Activity Implied
106	*Can you hear this letter?*	Cross-check auditory with visual information
108	*What do you expect to see at the beginning? … at the end? … after the "M"?*	Cross-check visual with auditory information
110	*Does the word you said look like the word on the page?*	Cross-check auditory with visual information
110	*Check it! Does it look right and sound right to you?*	Cross-check auditory with visual information
115	*What sounds can you see in that word?*	Cross-check auditory with visual information
140	*Run your finger under it as you say it slowly.*	Cross-check visual with auditory information
133	The teacher articulates the part clearly and the child locates the part.	Listen to the teacher; search for and use auditory information; cross-check visual with auditory information

matches what he hears. If this working system is successful, a similar approach may be initially attempted at a future point of difficulty.

Student: (reads) Mom and Emma *went* laughing as they ran after Matthew…

(Story says "were laughing." Student slows down, then stops at end of sentence.)

Teacher: What did you notice?

Student: (points at *were* in story but says nothing)

Teacher: You said *went* (emphasizes /t/ sound at end) there should be a *t* at the end. What sound can you see at the end of the word?

Student: (looks at word) *were* (rereads) Mom and Emma *were* laughing.

Teacher: Does it look like *were*?

Student: Yes.

Teacher: You're right.

In this example, the student may have self-monitored the visual/auditory mismatch between *went/were* (or perhaps a structural blip) but needed the teacher's assistance in searching for additional visual information to cross-check what was heard against what was seen. The student seemed unable to search for and use the visual/auditory information at the end of the word until the teacher's prompt directed him there. Children must develop a left-to-right pattern in analyzing words by sound and by visual features. This child's attempt was very close based on the first couple of letters, but did not incorporate all of the visual information available from the entire word. Successful problem solving while reading texts not only enhances the reader's strategic processing and knowledge, but also can rapidly expand the links the reader is making between letters and sounds.

Hearing and Seeing: Linking Sound Sequences and Letter Sequences

A hurdle facing literacy learners is the task of learning to hear the sounds in words and link these sounds to printed symbols and, conversely, to view a printed symbol and relate it to possible sounds. Children must build flexible mastery of letter/sound associations in written English in two directions—from hearing to

Table 3. Some Prompts to Attend to Auditory Input to Develop Letter/Sound Associations in *Literacy Lessons Part Two* (Clay, 2005b)

Page	Prompt in Reading	Child Activity and Strategic Activity Implied
43	*Can you hear the first/last part of 'looking?'*	Search for auditory information as you say the word
106	*Can you hear this letter?*	Cross-check auditory with visual information
108	*What do you expect to see at the beginning? … at the end? … after the "M?"*	Cross-check auditory with visual information
110	*Does the word you said look like the word on the page?*	Cross-check auditory with visual information
110	*Check it! Does it look right and sound right to you?*	Cross-check auditory with visual information
115	*Say it slowly like you do when you write.*	Search for and use visual with auditory information
115	*What sounds can you see in that word?*	Cross-check auditory with visual information
124	*Does that sound right to you? Check to see if what you read looks right. Check it! Does it look right and sound right?*	Cross-check auditory with visual information
132	*What can you hear that might help?*	Search for and use auditory information
140	*Run your finger under it as you say it slowly.*	Cross-check visual with auditory information
143	Ask the child to hear and say the part that is the same of rhyming words.	Search for and use auditory information
133	The teacher articulates the part clearly and the child locates the part.	Listen to the teacher; search for and use auditory information; cross-check visual with auditory information

seeing and from seeing to hearing. Clay (2005b) maintains that successful readers are able to distinguish between letter sounds and link those sounds to letter symbols, but some children will have extraordinary difficulty with this. As we work to develop children's letter/sound correspondences in Reading Recovery lessons (Table 3), we must "help a child to hear and to think about the order of sounds in spoken words. This has to do with the ears hearing sounds and transmitting messages about those sounds to the brain" (p. 70).

Amassing experience correctly solving words in print may help the young reader begin to generalize patterns of letter clusters and sounds they could make. Clay (2005b) writes,

> Whenever a child reads a piece of text aloud he is coordinating sound sequences with letter sequences. Thousands and thousands of these opportunities are built up in classroom activities. Every correct reading or writing of a word is yet another successful coordination of sound sequence with letter sequence. (p. 122)

Listening to himself read as he looks at text will form the basis of many of the reader's hypotheses of which letter combinations make certain sounds and how frequently those combinations occur within the written form of his language. Each additional experience of reading may add to or challenge what the reader believes about how his printed language operates. Given the overlapping variety and the exceptional and multiple sound/letter patterns in English, the children must remain flexible as they begin to formulate rules governing "What sound does this letter[s] make?" (Clay, 2005b, p. 120). As children begin to generate and categorize sound/symbol associations for themselves from the experience of successful reading they "begin to make better estimates of what a word might be. They are not just guessing. They are computing the likelihood of the features that they recognize belonging to the word they have predicted" (p. 124). In the context of Reading Recovery lessons, we want to assist children in clarifying letter/sound associations when they are both reading and writing, believing that knowledge from writing can inform reading (Clay, 2005a) and vice versa. Therefore, it is also important to consider how Reading Recovery children listen to themselves in the process of writing.

Training the child to articulate words independently, slowly, and naturally, and listen to his own voice is a critical step in the Hearing and Recording Sounds in Words (HRSIW) procedure in writing (Table 4). Without easy access to this auditory survey of a word to be solved, this procedure is of little use to the child. Clay (2005b) warns, "No letters are used in the earliest stages of developing phonemic awareness. The child needs to use his ears" (p. 71). Next, the teacher prompts the child to say the word slowly and asks, "What can you hear?" to facilitate the child's search for and use of his own voice's input as a possible approach to solving a spelling problem in writing.

The child must learn the task of listening to himself, and this demands that the child—not the teacher—

Table 4. Writing Prompts to Attend to Auditory Input to Develop Phonemic Awareness and Letter/Sound Associations in *Literacy Lessons Part Two* (Clay, 2005b)

Page	Prompt in Writing	Child Activity and Strategic Activity Implied
65	*Say the word aloud. Say it slowly. Is that like a word you know?* *You can say another word like that.* *Have you heard another word that starts that way?* *Have you heard another word that sounds like that?*	Search for and use auditory information to compare known words
72, 131	Ask the child to clap parts he can hear in two- or three-syllable words.	Search for auditory information
73 74 74	*Say it slowly (in HRSIW).* *What can you hear?* *How would you write it?*	Produce useful auditory information; Search for auditory information; Cross-check auditory with visual information
75	*What else can you hear at the beginning?* *… at the end?* *… in the middle?*	Search for more auditory information
75	*What letters would you expect to see?*	Cross-check auditory with visual information

says the word slowly. The child must generate this auditory input by saying the word slowly so that he has something to analyze. This is a different task than listening to the teacher. If a pattern emerges where the teacher says the word for the child, the child does not learn to listen to himself so that he can independently solve more words. This learning also has important reciprocal implications to the child's approach to reading tasks, as he begins to link sound sequences to letter sequences with greater ease and complexity. For this to happen the child must be aware of and link together the sound and the written form.

A child and teacher are writing together during a demonstration lesson behind the glass.

The teacher draws sound boxes and asks the child to slowly articulate the word *like*. The child says the word slowly, and then records *l, i, k* in sequence in the three boxes the teacher has drawn.

The teacher adds an *e* to the final box, saying, "We don't hear this letter, but it makes the word look right."

The child moves to write the word in the story. As he writes, he says the letter names, *L – I – K – E.*

The teachers viewing this lesson wondered if the child could be directed to say the word again slowly as he writes it into the story. Perhaps by hearing the sounds as he forms the letters in writing, the child would be provided with an additional opportunity to simultaneously hear and see the sounds and the letters of the word. Rather than trying to remember how this individual word was spelled, saying the word slowly while writing might create the opportunity to hear the consonant framework and give the child's attention to the silent *e*. By seeing this word and many other words with a vowel/consonant/e pattern, over time the child may start to predict how a vowel will have a long sound in this type of spelling pattern (and begin to compile a list of exceptions he has found in his reading and writing!).

This internal pattern-building is augmented when the child shifts from using sound boxes (one box for each sound) to letter boxes (one box for each letter) in the HRSIW procedure. The student must think about sounds and letter clusters flexibly. Clay (2005b) feels the child "now has to think about sounds (phonology) but he also has to think about spelling (orthography) – and he learns to juggle these two things" (p. 77). This juggling necessitates the child's writing and reading processing taking on more complex, more-varied exceptions to sound/letter patterns and forming hypotheses regarding the frequency of their occurrence.

(Child is solving the word *farmer* for his message; teacher draws six letter boxes.)

Teacher: This is how many letters you need to write farmer.

Child: Says *farmer* slowly, then writes *f, r, m, r* in the first four boxes.

Teacher: You have some empty boxes; we will need some more letters to make some of those sounds. Clap *farmer*.

(Child claps and says *farmer*.)

Teacher: You know how to write a word that rhymes with far...

Child: Car!

Teacher: Good; write that over here and see how it could help you.

(Child writes *car* on practice page.)

Child: So it's A - R?

Teacher: Yes, that A - R is what you hear in *far*. (puts magic tape on letter boxes so child can correct)

(Child now has *f, a, r* in letter boxes, then writes *m* in next box.)

Teacher: That's right, an M is next. Say it slowly one more time.

(Child says *farmer* slowly.)

Teacher: The ending sounds like R doesn't it? (Child nods.) When that 'r' sound is at the end of a word, it's often E - R like this. (Teacher writes *e, r* in final two boxes.) Let's check it.

(Teacher reads *farmer* slowly while drawing finger under word.)

This child is learning not only how to solve the word *farmer* but more about how 'r'-controlled sounds are written in English through hearing himself say the sounds, seeing the letters as he writes, and consolidating this new learning within what he already knows. Through the process of listening to himself and learning more about how the written form of language works, a child can rapidly expand his knowledge of how letters and sounds work, giving him knowledge that can be brought to the tasks of solving and checking in both writing and reading.

Listen While You Solve Words: Working with Words in Isolation and Taking Words Apart While Reading

Children also may draw upon the sounds of their own voice as a means to attempt and check unknown words in isolation and in stories. Clay (2005b) points out that there are two kinds of new words to be solved by the reader:

1. those you have used or heard other people use for which you have some kind of 'sound' image in your brain
2. and those different and difficult words that you have never heard before. In the latter case you have to learn the sound pattern, and the visual pattern, and what it refers to. (p. 122)

Given that solving a word foreign to one's vocabulary is a thorny undertaking, the process of working out any unknown word is more richly supported within the context of continuous text, as more multi-tiered information is available to the reader. When looking at an isolated word, the child can only access the visual information in the word itself (letter sounds, clusters of letters, known words) and cross-check his trial against his vocabulary. If a child makes an approximation based on the visual information, he could cross-check and refine his attempt with words he knows.

Child working on BURT Word Reading Test[1]

Child: (word is *beware*)

be – w – are
be – warr (arr as in *car*)
bewarr?
Oh! *Beware*!

To solve the word *beware* in isolation, the child initially looked for familiar visual cues, the units *be*, *w*, and *are*. Not satisfied, the child changed tack, trying a different phonemic cluster, *warr*. As the child said "be-warr" his voice suggested uncertainty, as if he couldn't find a match between words he knew and what he was reading. Perhaps by hearing a close-sounding word to a known word in his vocabulary, he was able to narrow the alternatives and settle upon *beware* as the best match for what would look right and produce a word he understood.

Child working with words in isolation, advanced word learning, on whiteboard during a teacher leader school visit.

(Teacher assembles *children* and asks child, "What's this word?")

Child: *children*

(Teacher changes the word *children*, to *chopping* and says, "Now this one.")

Child: *chop – ing, chopping*

(Teacher changes the word *chopping* to *cherry* and says, "Now this one.")

Child: (hesitates) *tree*

While the child made expected responses to *children* and *chopping*, saying *tree* for *cherry* initially surprised the teacher. After the lesson, the teacher leader and teacher wondered if the child had split the word, *ch-er-ee*, and found *tree* to be the closest sounding match in his vocabulary. The exceptional spelling of the 'air' sound in the middle of *cherry* may have been unknown to the child. Perhaps by encountering the word *cherry* in continuous text, the child could have searched for and used more meaning-based information from the text to help solve the word, and successfully solving the word could at the same time broaden his options of possible sounds the E – R cluster in the middle of a word could make.

In contrast to working with words in isolation, when reading continuous text, children can also draw upon

[1] Canadian Reading Recovery students undertake the BURT Word Reading Test (Gilmore, Croft, & Reid, 1981), an assessment of their skills in solving isolated words of growing complexity, alongside *An Observation Survey of Early Literacy Achievement* (Clay, 2002, 2006).

the meaning presented up to the current point in the story, their general knowledge, and their knowledge of what is structurally possible to support their efforts on a difficult word or a familiar word used in a novel way (Figure 2). Clay (2005b) has advocated for arranging more opportunities for children to develop their problem-solving skills within continuous text:

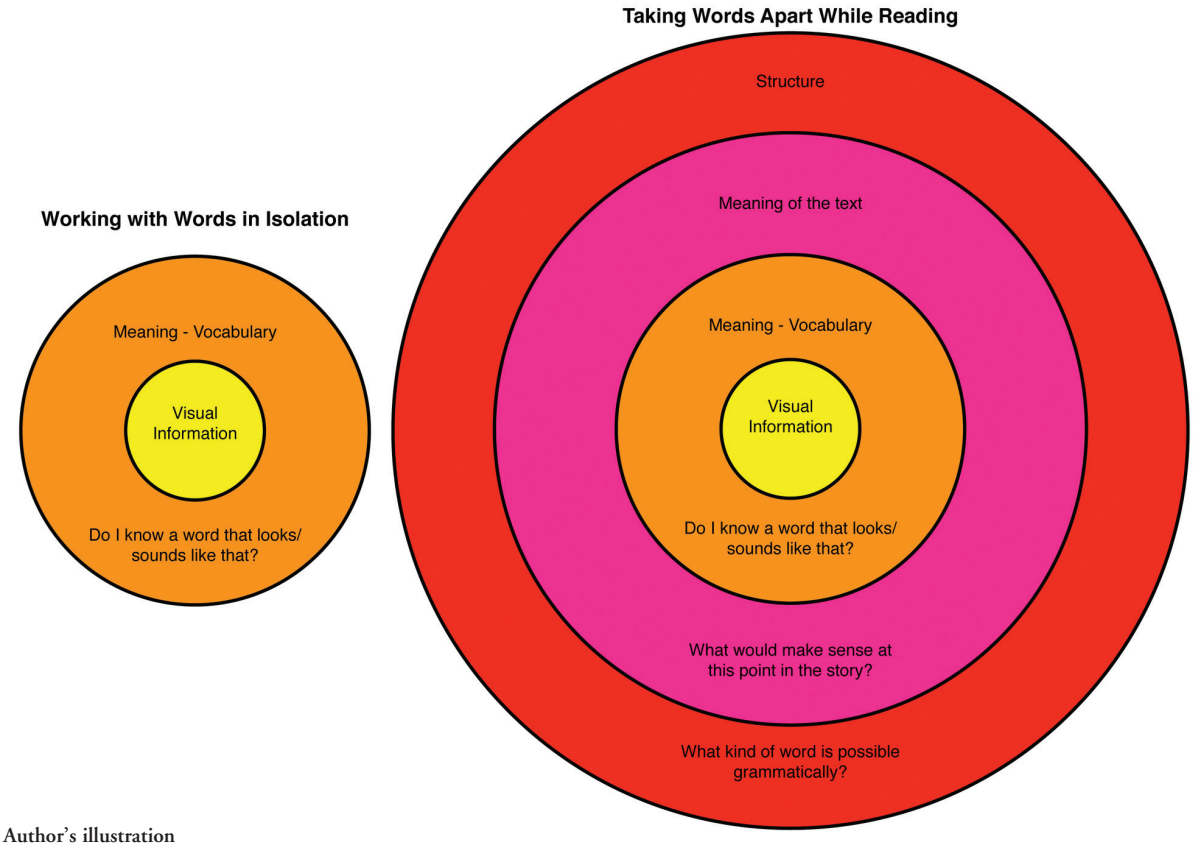
> The aim of this work with words in isolation is to have him know about how words work and be able to use this awareness while reading texts and while writing. To be able to work on words in isolation is not enough; the reader and writer must also be able to handle those words flexibly in continuous texts. (p. 138)

Building capacity by solving words in continuous texts would seem to develop a more multidimensional means of thinking through problem words, giving the child access to more-potent auditory-cued information (vocabulary, text/global meaning, and structure) to support what is being presented visually to the eyes.

> Child: (reading)
> Baby Hippo is in the river too.
>
> He is asleep on Mother Hippo's back.
>
> He is *saff*…*saff*? No!
>
> (rereads) He is *safe*.
>
> (talking to teacher) They can't get him, he's in the water.

While reading the story, this child self-monitored that the substitution *saff* was unsatisfactory, reread and corrected the error. While the sound of the word *saff* itself, failing to be recognized as a meaningful word, may have been enough to trigger this decision, it was interesting that the child commented further by explaining how *safe* made sense in the context of this story. By listening to himself and thinking about the meaning of the story, not only at

Figure 2. Sources of Information Available to the Reader When Working with Words in Isolation and Taking Words Apart While Reading Continuous Text



Author's illustration

the sentence level, the child has discovered a more-profound method of self-monitoring and searching for and using more than one kind of information efficiently to solve a problem and to check the effectiveness of his decision.

Did It Sound Good? Self-Monitoring for Fluency

Clay (2005b) acknowledged Kuhn and Stahl's (2001) review of fluency research, highlighting that effective fluency instruction seemed to have more to do with "assistance from a teacher (like demonstrating and encouraging the reader to listen to himself)" (p. 152). Fluent reading will both contribute to and be evidence of effective processing (Briggs & Forbes, 2002). "When children's reading is phrased and fluent, meaning and structural information are available to be integrated with visual information" (p. 5). The reader must ensure that he is reading fluently to power his reading forward; therefore, he has to listen to how his reading sounds. Clay designed prompts to call on children to listen to themselves and assess their own fluency (Table 5). As part of building a robust processing system, children need to monitor and strive for fluency within the sound of their own reading, so that sources of information beyond the visual information are made available to them.

As the learner gains more skill, the interaction between teacher and learner becomes more of a conversation, with both teacher and learner contributing to the decision-making process. Eventually, the learner assumes more control but may need to remind or encourage herself through dialogue, though spoken aloud, meant for herself.

Talking and Listening to Oneself: Early Steps Towards an Inner Voice

The reader may also listen to some spoken self-direction as she reads aloud, as she begins forming the foundation of self-management, leading to self-regulation that is eventually internalized into thoughts.

People who are profoundly deaf from birth have never experienced spoken language and conceptualize their inner voice as something they "see" in their mind's eye; thoughts are represented as signed gestures (Sacks, 1989). For mature, hearing readers, as one reads silently an inner voice may play out in the reader's brain "saying" the words as one reads, stating what one is thinking, or giving oneself directions. This may be our best way of describing our thought process, as a voice we hear in our heads, binding our perception of thought to oral speech. Bomer (2006) writes that "reading is thinking guided by print" (p. 524).

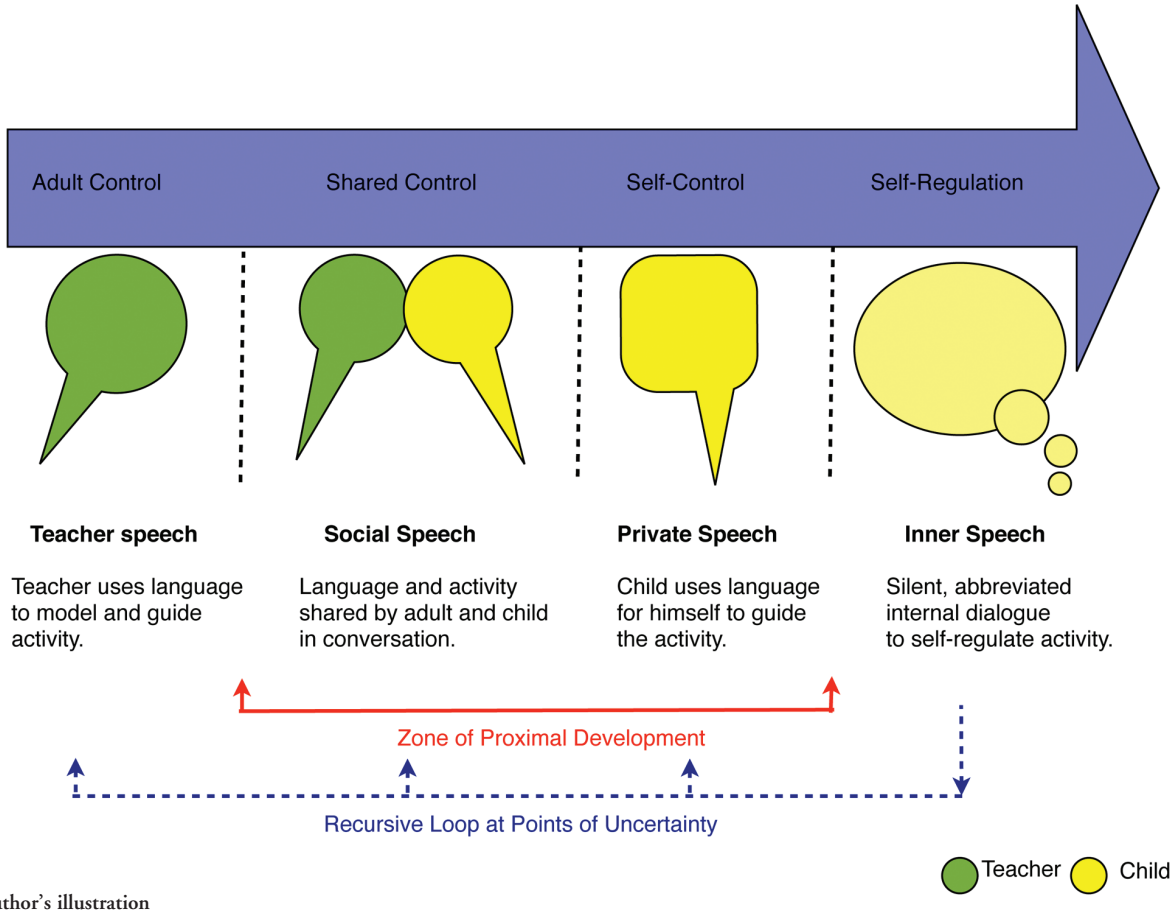
Table 5. Some Prompts to Attend to Auditory Input to Self-Monitor Fluent Reading in *Literacy Lessons Part Two* (Clay, 2005b)

Page	Prompt in Reading	Child Activity and Strategic Activity Implied
152	*Are you listening to yourself? Did it sound good? Is that sounding good?*	Self-monitor for structure

Beginning readers start to develop a specialized manner of thinking — through their conversations and in the context of reading, partially shaped by listening to their own voice read aloud. Vygotsky (1978) argued that as a child learner works with a more-knowledgeable other, his speech moves from external to internal (Figure 3) as the child gains more control. Vygotsky believed that the pattern and source of discourse changes as the learner develops his capacity. Initially, a learner relies heavily on the direction of the teacher. As the learner gains more skill, the interaction between teacher and learner becomes more of a conversation, with both teacher and learner contributing to the decision-making process. Eventually, the learner assumes more control but may need to remind or encourage himself and will utter statements or directions aloud meant only for himself. At a point of confusion or uncertainty, a child may temporarily require more support from the teacher and the conversation between teacher and learner will shift. When the learner is competent within an activity, he assumes control of managing himself through his thoughts as he self-monitors, guiding himself when and however necessary. Examples of this shift in dialogue are seen frequently in Reading Recovery lessons (Table 6).

Table 6 shows decision making, which is led by the adult in the teacher speech example but moves to a shared conversation to solve a problem in social speech. In the private speech example, a child is self-guiding his decision making via conversation meant for himself. The student guides himself through the process of looking at a visual reference to make a decision if he's seeing a 'b' or a 'd.' The child's private speech as he works echoes what he had been shown to do by his teacher in previous lessons, but he is listening to his own advice to solve the problem. Ultimately, the child assumes more control and coaches himself towards next possible moves,

Figure 3. Transition from External to Internal Speech as Control Shifts from Adult, to Shared Control, to Self-Regulation



Author's illustration

Table 6. Shifts in Dialogue in Reading Recovery Lessons

Teacher Speech	Teacher:	*That didn't make sense. When you're reading and it doesn't make sense you should go back and read that part again. It has to make sense.*
Social Speech	Child:	(reads) *Kipper was reading at…*
	Teacher:	*You stopped. What did you notice?*
	Child:	*It didn't make sense.*
	Teacher:	*Good checking. Try that line again and think what would make sense.*
Private Speech	Child:	(reading) *doo – n – t, baw – n – t*
		(to himself) *Is it a* b *or* d*?*
		(looks at b/d chart in front of him)
		(to himself) *It's a* d.
		(reads) *daw – n – t. 'Don't be silly,' said Wilf.*

evaluating the effectiveness of those decisions. In the context of a child who is just learning to read, Clay (2005b) cautions against encouraging the child to talk out loud as he solves problems, or try to give rationales for decisions, as it only slows down his processing. However, some novice readers may spontaneously coach themselves or verbalize some of their thinking. Ultimately, mature reading demands listening to oneself, planning, and decision making — whether spoken aloud or, eventually, thought within the brain.

Listen to How Well You're Reading

The philosopher Epictetus mused, "We have two ears and one mouth so that we can listen twice as much as we speak." Clay (1991) recognized the contributory role of oral reading, in the context of reading new or difficult information and wrote that "oral reading is an aid to learning at this level and not something to be minimized lest it create slow readers" (p. 251). Clay saw evidence of how "re-hearing" texts assisted beginning readers in identifying words, understanding words and sentences, self-monitoring, self-correcting, and taking words apart when reading.

Towards similar ends, oral reading is worthy of promotion as an effective pedagogy in early literacy instruction and one that should not be too soon abandoned. To mine for these benefits, a teacher should prompt a literacy learner to listen to his own reading for a variety of purposes. In *Literacy Lessons Designed for Individuals Part Two*, Clay (2005b) wisely suggested many prompts which direct a child to listen to his own voice, keeping in mind that "the child's ultimate resource for learning to read and write is his spoken language" (p. 2). Steering the child's attention to employ the information available to him within the sound of his own voice will assist in fostering a more-robust processing system — one that will be less reliant on solely visual information. Guiding children in maturing as readers and writers will necessitate their learning to draw upon auditory information effectively as "reading involves listening to language" (Clay, 2002, p. 16) and "writing also involves the young writer in listening to his own speech to find out which sounds he needs to write, and then finding the letter forms with which to record those sounds" (Clay, 2005b, p. 48).

This auditory input can augment their problem solving but also, and more crucially, lays the foundation of thinking like a successful reader by fostering monitoring, searching, selecting, evaluating, and having one's knowledge of literacy processing strengthened through the construction of meaning while interacting with a text.

How tremendous it is when a child can hear himself becoming a reader!

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