

Literacy Learning and Instruction: In Search of Complexity

Robert M. Schwartz, Trainer, Oakland University

Patricia A. Gallant, University of Michigan–Flint

As literacy educators, we draw inspiration from the examples of our most-esteemed and accomplished colleagues. Dr. Marie Clay, considered by many to be the most-influential literacy theorist, researcher, and scholar across more than 3 decades (Gambrell, 2001), has inspired us to rethink what is possible in our work with struggling beginning readers. Above all, Dr. Clay was a learner who held a tentative and evolving theory of literacy learning and instruction. She understood that literacy “processes are complex and will not be easy to observe and explain. Literacy educators, therefore, need to be tentative and flexible because we could be wrong in our explanations from time to time or from this pupil to that pupil” (Clay, 2005a, p. 2). A scientist or teacher that declares his theory to be true need only wait to be proven a fool by history!

Clay, a skilled qualitative researcher and developmental psychologist, anchored her theory in systematic observations. She closely observed the literacy learning of 100 entry-level students over their first year of school (Clay, 1982), and developed reliable and valid observation tools that allow other researchers and teachers to observe early literacy. Her running record procedures and Concepts About Print tasks have served teachers and researchers for over a quarter of a century as they monitor

gradual changes in children’s literacy behavior (Clay, 1979, 2002).

While these tools helped Clay and others to investigate early literacy learning, Reading Recovery enabled her to study early literacy instruction. From her first pilot work with New Zealand teachers in 1976, Clay utilized Reading Recovery to develop and refine methods for supporting the learning of children who struggle with early literacy (Clay, 1979, 2005b). Over the past 25 years, thousands of Reading Recovery teachers working with millions of at-risk students have provided an international laboratory in which to explore relationships between teaching and learning. Clay traveled the world for a quarter century to observe teachers who support children’s learning and discuss their insights, concerns, struggles, and successes. She, more than anyone else, was the omnipotent observer of Reading Recovery, and the person best suited to learn its lessons.

Fortunately for all of us in the literacy profession, Clay shared her insights from this work in numerous books throughout her career (Clay, 1979, 1982, 1991, 1993a, 1993b, 1998, 2001, 2005a, 2005b). In all her writings she describes the *complexity* of literacy learning and instruction and never simplifies the child’s or the teacher’s tasks to a set of rules, procedures or sequential steps.

Clay understood

if literacy teaching brings a simple theory to a set of complex activities, then the learner has to bridge the gaps created by the theoretical simplification. The lowest literacy achievers will have extreme difficulty bridging any gaps in the teaching programme and linking together things that have been taught separately. They require a watchful teacher who shares the complex task and knows when to withdraw his or her help, bit by bit as the low achievers construct necessary literacy processes. The teachers create the supporting structure within which the low achievers can be appropriately constructive. (Clay, 2001, p. 105)

Like Clay, all of us who teach young children continue to refine and develop our understandings of the complex tasks involved in literacy learning and instruction. We often return to her writings with a new perspective and with questions generated from our work with children.

How will we as a profession continue to build on Clay’s legacy? To address this, we explore implications of complexity, flexibility, and tentativeness that Clay passionately espoused and demonstrated in her professional life.

Complexity Within Literacy Learning and Instruction

Spiro (Spiro, Coulson, Feltovich, & Anderson, 1994; Spiro, Feltovich, Jacobson, & Coulson, 2006) provides a theory of constructivist learning in complex and ill-structured domains. Clay (2001) includes references to this work in relation to children's literacy learning, suggesting that this theory is worth considering by teachers/researchers as they refine their theories of literacy learning and instruction. Spiro et al. (2006) define an ill-structured domain as having two critical features: case complexity and across case irregularity. They offer medicine, history, and literary interpretation as examples of ill-structured domains. To illustrate the features of this type of domain, they suggest that

understanding a clinical case of cardiovascular pathology will require appreciating a complex interaction among several central concepts of basic biomedical science; and that case is likely to involve differences in clinical features and conceptual involvements from other cases assigned the same name (e.g., other cases of 'congestive heart failure'). (2006, p. 4)

Teaching beginning readers (and writers) who struggle fits these criteria. A major premise of Reading Recovery instruction is that "low achievers, collectively, are a group encountering different sources of difficulty" (Clay, 2001, p. 220). They also bring different sets of strengths that form the basis for initial instruction (Clay, 1998, 2001). This fits the one criterion of a complex and ill-structured domain — cross-case irregularity.

The second criterion Spiro identifies, case complexity, is also clearly present in changes over time in all aspects of literacy learning. According to Clay, these changes are interactive and follow no simple sequential pattern:

Teachers observe that readers extract increasingly more information on texts of gradually increasing difficulty. Such a reader can become aware of new items of knowledge, of new ways of checking on himself or herself, and of new strategic behaviors. In a complex model of interacting competencies in reading and writing the reader can potentially draw from all his or her current understanding, and all his or her language competencies, and visual information, and phonological information, and knowledge of printing conventions, in ways which extend both the searching and linking processes as well as the item knowledge repertoires. (2001, p. 224)

Concepts like fluency, searching, monitoring, and learning to look at print are each complex aspects of a child's processing system that interact and change over a child's intervention program.

Spiro et al. (2006) see failure to attain advanced knowledge acquisition in ill-structured domains as common. When learning difficulties are detected in complex domains they often take the form of some type of oversimplification. Characterizing literacy learning and instruction as a complex and ill-structured domain alerts us to look for patterns of oversimplification. Let's consider oversimplification errors in literacy learning and instruction from the

perspective of a child, a teacher, and the literacy profession.

Oversimplification of literacy learning

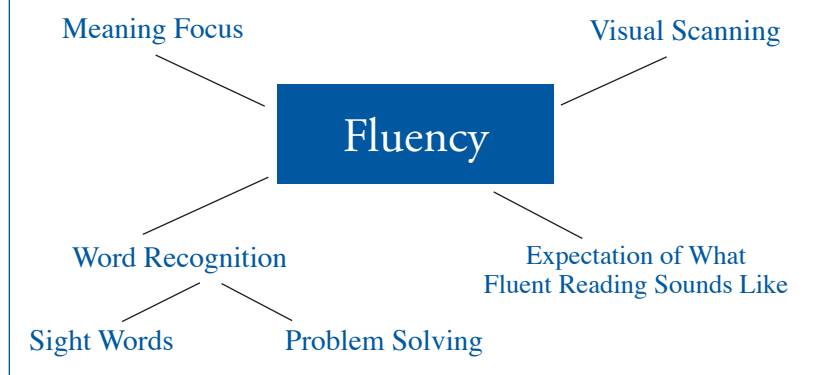
For a child struggling with initial literacy learning, the opportunities for oversimplification abound. Many sources of information that an experienced reader can process quickly and with little or no attention require considerable new learning. Clay (2001) sees the child as beginning with

simple working systems borrowed at first from different kinds of learning prior to school which have been adapted for these novel activities. Over three to four years, they construct a vast range of complex processing activities, finely tuned to the requirements of literacy learning. (p. 96)

However we think about these processing systems, "they *must be infinitely flexible and temporarily tentative* during the acquisition of literacy" (Clay, 2001, p. 103). Oversimplification occurs when the struggling student latches on to one of these temporary and tentative steps toward a more-effective system and perhaps habituates an inappropriate way of responding.

Think of a child in the early stages of building a working system for fluent reading. The child may also be just learning how to look at and gain information from print. Figure 1 shows some of the aspects a child must coordinate in a working system for fluency.

Early in a child's Reading Recovery program teachers would work on fluency during the rereading of familiar books (Clay, 2005b). This

Figure 1. Working System for Fluency

reduces the attention required for word recognition since the child has read the book at least twice. Repeated readings also help establish the meaning of the story, making this available to guide attempts at fluency. Both the expectation of what fluent reading should sound like and the visual scanning process can be sources of oversimplification. We observe that some children adopt a robot type of word-by-word intonation pattern. They may intentionally maintain this pattern to indicate that they are reading the words and not just making up a story from the pictures or repeating a memorized plot.

Earlier in his program the child probably was required to point at the words as he read, an important step in establishing directionality and monitoring by one-to-one correspondence of words in oral language to words in print. Even when this is no longer necessary and his teacher actively discourages finger pointing, the child may maintain the habit of looking at each word as he is saying it. Procedures in Clay (2005b) related to phrasing in fast and fluent reading include sliding a card over or under the text as the child reads to encourage the child “to let his eyes work ahead of his voice” (p. 153).

Careful observation and a complex processing theory are required for a teacher to infer possible cause for an observed lack of fluency and plan instruction that helps the child overcome these tempting simplifications. This is just one example. Children can oversimplify their approach to either reading and writing in many ways, and the teacher needs to remain tentative and flexible in figuring out what the child might be doing or thinking that is limiting progress.

Oversimplification of teaching

Teachers working with a complex theory may also be tempted to abandon a tentative and flexible form of instruction in favor of simpler and sometimes more-familiar approaches. We see this in teachers’ attempts to teach for self-monitoring (Gallant & Schwartz, in press; Schwartz, 1997, 2005). Self-monitoring, a central component in Clay’s (2001, 2005a, 2005b) theory of early literacy learning and instruction, refers to a set of strategic activities that children use to check on their ongoing reading of text and to decide whether a problem occurs that might require additional processing. For beginning readers, many of these problems relate to word recognition.

When children read aloud, they often substitute a different word for a word that appears in the text. Analysis of these substitutions, recorded in running records (Clay, 2002), or miscue analysis (Goodman, 1969) allows teachers to infer the type of information sources the child uses to make word recognition decisions. Clay (2005b) refers to this aspect of word recognition as *strategic activity for searching information sources*. As the child refines his working systems for reading and word recognition over time, his strategic activity and use of information sources change. Teachers are often very familiar with instructional routines related to searching strategies, since much of the professional debate around literacy instruction centers on which of these instructional routines is most effective for beginning instruction. Phonics, decoding by analogy, and guessing words from context are all routines that appear in teachers’ guides and reading methods texts for early literacy instruction.

Monitoring strategies are not usually a part of this debate. When a child’s searching strategies lead to a substitution, the child has an opportunity to notice whether his attempt is correct. Attempts where the child hesitates, rereads, or makes multiples tries suggest some type of monitoring. Analysis of these attempts versus unnoticed errors allows the teacher to infer the child’s strategic activity and use of information sources for self-monitoring (Clay, 2001, 2005b; Schwartz, 1997, 2005).

Because this is a less-familiar aspect of literacy learning and instruction, oversimplification can occur. We have heard Reading Recovery teachers describe a child’s strategic behavior with a general statement that the student self-monitors (Gallant &



Schwartz, in press). Since this type of strategic activity changes rapidly over the first 2 or 3 years of literacy learning, a general statement that the child self-monitors is an oversimplification. A more-complete description of a child monitoring would include the types of information sources the child currently uses to monitor. For example, a child might first monitor on one-to-one matching, then begin to monitor on known words, and later begin to notice gross visual

Clay's theory provides an excellent starting point for the transformation to a more-complex view of early literacy learning and instruction.

differences based on sound-to-letter expectations (Schwartz & Gallant, in press).

A related, and perhaps more critical oversimplification is noted by Smith (1999). She found, in examining videos of teachers working with struggling readers, that teachers only focused on prompting for self-monitoring after 2% of a child's unrecognized errors. While it is certainly appropriate to ignore some of these errors, many of them provide opportunities to extend the child's monitoring strategies. Instead of prompting for self-monitoring, teachers often pointed out the error and moved directly to teaching for searching strategies. This oversimplification negates the central role of self-monitoring activity as a mechanism to promote development of working systems that integrate monitoring and searching behaviors

through the child's processing activity reflected in self-correction behaviors during reading (Clay, 1982, 2001, Schwartz, 2005; see Palincsar, 2007 for a discussion of oversimplification related to comprehension instruction).

Transforming the Debate

Teachers' overattention to searching strategies is understandable given the continuing oversimplification present in the professional literature about early literacy instruction. As a profession, we continue to debate phonic versus more meaning-based approaches to teaching word recognition (Chall, 1967; Moats, 2007; Pearson, 2004, Schwartz & Gallant, in press). Even Pressley (2002), one of the leading literacy researchers of our day, presents an oversimplified view of Clay's theory. He recognizes monitoring as a unique aspect of Clay's theory, but limits this monitoring to checking "whether the word as decoded makes sense" (p. 208). This is a primary form of self-monitoring for proficient readers, but ignores the role of monitoring by various types of visual information as the novice or struggling reader learns to look at print and coordinate this looking with knowledge of sound and letters (Clay, 2001).

Like literacy education, developmental psychology floundered for years with useless debate over nature versus nurture. They have moved beyond this debate with more-complex theories that negate the either/or dichotomy (Damon & Lerner, 2006). Literacy educators need to make a similar transformation in our professional literature to a more complex view of early literacy learning and instruction. Clay's theory provides an excellent starting point

for this transformation. Grounded in detailed observation of changes over time, Clay (1982, 2001, 2005a) provides a view of waves of strategic activity (Schwartz, 1997, 2005; Schwartz & Gallant, in press; Siegler, 2006) that illustrate the interaction of monitoring, searching, phonological processes, and changes over time in the child's ability to look at and monitor information from print.

Clay would be the last one to claim that this theory is complete or even correct. But it provides a way forward, a way of moving beyond unproductive debates of the last century and the reading wars that drain resources and limit student learning opportunities to single-factor instructional models (Clay, 2001). Based on a lifetime in research and instruction, Clay chose to sail in a different direction. She embraced complexity, realizing that our current understanding is tentative and the way forward still uncertain. As a profession we would be wise to follow her lead, remembering that, as Dr. Marie Clay always believed, the "search for solutions has no end" (Clay, 2005b, p. 208).

References

- Chall, J. S. (1967). *Learning to read: The great debate*. New York: McGraw-Hill.
- Clay, M. M. (1979). *The early detection of reading difficulties: A diagnostic survey with Reading Recovery procedures* (2nd ed.). Auckland, New Zealand: Heinemann.
- Clay, M. M. (1982). *Observing young readers: Selected papers*. Portsmouth, NH: Heinemann.
- Clay, M. M. (1991). *Becoming literate: The construction of inner control*. Portsmouth, NH: Heinemann.
- Clay, M. M. (1993a). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.

About the Authors



Robert M. Schwartz is a professor in the Reading and Language Arts Department at Oakland University, Rochester, MI. A Reading Recovery trainer since 1991, Bob has published articles on self-monitoring, teaching decisions, and the effectiveness and efficiency of Reading Recovery. He served as the 2007–2008 president of RRCNA.



Patricia A. Gallant is an assistant professor in the Education Department at the University of Michigan–Flint. She teaches literacy methods courses and coordinates the K–12 Literacy Specialization masters program. Pat is the 2009–2010 president of the Michigan Reading Association.

- Clay, M. M. (1993b). *Reading Recovery: A guidebook for teachers in training*. Portsmouth, NH: Heinemann.
- Clay, M. M. (1998). *By different paths to common outcomes*. York, ME: Stenhouse.
- Clay, M. M. (2001). *Change over time in children's literacy development*. Portsmouth, NH: Heinemann.
- Clay, M. M. (2002). *An observation survey of early literacy achievement* (2nd ed.). Portsmouth, NH: Heinemann.
- Clay, M. M. (2005a). *Literacy lessons designed for individuals part one: Why? when? and how?* Portsmouth, NH: Heinemann.
- Clay, M. M. (2005b). *Literacy lessons designed for individuals part two: Teaching procedures*. Portsmouth, NH: Heinemann.
- Damon, W., & Lerner, R. M. (Eds.). (2006). *Handbook of child psychology*. Hoboken, NJ: Wiley.
- Gallant, P., & Schwartz, R. (in press). Examining the nature of expertise in reading instruction. *Literacy Research and Instruction*.
- Gambrell, L. B. (2001). Reflections on literacy research: The decades of the 1970s, 1980s, and 1990s. In T. Shanahan & F. Rodriguez-Brown (Eds.), *Forty-ninth yearbook of the National Reading Conference* (pp. 1–11). Chicago, IL: National Reading Conference.
- Goodman, K. S. (1969). Analysis of oral reading miscues: Applied psycholinguistics. *Reading Research Quarterly*, 5(1), 9–30.
- Moats, L. C. (2007). *Whole language high jinks: How to tell when "scientifically-based reading instruction" isn't*. Washington, DC: Thomas B. Fordham Institute.
- Palincsar, A. S. (2007). Reciprocal teaching 1982 to 2006: The role of research, theory and representation in the transformation of instructional research. In K. J. Rowe, R. T. Jimenez, D. L. Compton, D. K. Dickenson, Y. Kim, K. M. Leander & V. J. Risko (Eds.), *Fifty-sixth yearbook of the National Reading Conference* (pp. 41–52). Oak Creek, WI: National Reading Conference.
- Pearson, P. D. (2004). The reading wars. *Educational Policy*, 18(1), 216–252.
- Pressley, M. (2002). *Reading instruction that works: The case for balanced teaching. Solving problems in the teaching of literacy* (2nd ed.). New York: Guilford Press.
- Schwartz, R. M. (1997). Self-monitoring in beginning reading. *The Reading Teacher*, 51, 40–48.
- Schwartz, R. M. (2005). Decisions, decisions: Responding to primary students during guided reading. *The Reading Teacher*, 58, 436–443.
- Schwartz, R. M., & Gallant, P. (in press). The role of self-monitoring in initial word recognition learning. In C. Wyatt-Smith, J. Elkins & S. Gunn (Eds.), *Multiple perspectives on difficulties in learning literacy and numeracy*. Springer.
- Siegler, R. S. (2006). Microgenetic analysis of learning. In D. Kuhn & R. S. Siegler (Eds.), *Cognition, perception and language* (6th ed., Vol. 2, pp. 464–510). Hoboken, NJ: Wiley.
- Smith, P. (1999). *The teacher, the child and the undetected error* (Paper code 165768SC, November 1999). University of Auckland: New Zealand.
- Spiro, R. J., Coulson, R. L., Feltovich, P. J., & Anderson, D. K. (1994). Cognitive flexibility theory: Advanced knowledge acquisition in ill-structured domains. In R. B. Ruddell, M. R. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (4th ed., pp. 602–615). Newark, DE: International Reading Association.
- Spiro, R. J., Feltovich, P. J., Jacobson, M. J., & Coulson, R. L. (2006). *Cognitive flexibility, constructivism, and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains*. Retrieved December 12, 2006, from http://phoenix.sce.fct.unl.pt/simposio/Rand_Spiro.htm