

Joining the Literacy Flow: Fostering Symbol and Written Language Learning in Young Children With Significant Developmental Disabilities Through the Four Currents of Literacy

Christopher Kliever
University of Northern Iowa

This article is both an ethnographic and an action-based description of how excellent early childhood teachers in seven inclusive preschool and kindergarten classrooms fostered the developing literacy profiles of young children with significant developmental disabilities alongside their typically developing peers through active, engaging, social means. I have developed four broad themes, described here as currents, that support the meaning-based literacy-learning of children still commonly cast as intrinsically incapable of literate citizenship, using participant observation; in-depth interviews with teachers, therapists, and parents; the implementation of increasingly responsive, systematic literacy-based themes, opportunities, and activities into certain inclusive classrooms; and the development of process-oriented portfolio documentation. Important findings include the following: (a) children with significant developmental disabilities can join the early childhood literacy flow; (b) they do so through interactive means; and (c) spoken language need not serve as the foundation of written language learning.

DESCRIPTORS: early childhood inclusion, literacy, severe disability

Two conceptual models have over the past four decades dominated scholarly and policy debates regarding young children's early literacy. The first, initially articulated by the late Marie Clay (1966), is a developmental model described as *emergent literacy*. As a descriptive framework, emergent literacy was initially composed on the Piagetian duality that children are active constructors of their knowledge and that this process of construction unfolds from birth across stable, naturally occurring stages (Teale & Sulzby, 1986).

Emergent literacy theorists posit that written language learning is intrinsic to normal development and occurs naturally in a symbiotic relationship with oral language development when children are provided with developmentally appropriate opportunities, environments, and models (just as spoken language requires appropriate opportunities, environments, and models; Razfar & Gutiérrez, 2003; Sulzby, Branz, & Buhle, 1993; Teale & Sulzby, 1986). Although more recently there has been a tempering of this position (International Reading Association & National Association for the Education of Young Children, 1998; Sénéchal, LeFevre, Smith-Chant, & Colton, 2001), the conceptual model of emergent literacy deemphasizes direct instruction in basic literacy skills. Rather, young children's literacy is promoted through their immersion in print and symbol-rich environments supporting thoughtful opportunities and activities that foster active engagement and experimentation with spoken and written language. In this model, there is no pre-literacy or readiness phase as children are considered active, albeit idiosyncratic, literacy learners from the start (Morrow, 2005).

In contrast to the framework of emergent literacy is the conceptual model described as *reading readiness*, which has, in early childhood literacy research and policy, become wholly conjoined with phonemic-based decoding (Shannon, 2000). Thus, the framework might best be labeled *decoding readiness*. Decoding readiness, like emergent literacy, is grounded in decades-old scholarship (e.g., Chall, 1967), but its efflorescence as the current dominant model within both early childhood policy and practice is most aptly traced to Marilyn Jager Adams' (1990) report to Congress that was subsequently published under the title *Beginning to Read*. Adams' survey of research on early literacy led her to conclude that literacy acquisition on the part of young children, including kindergartners, required an emphasis on systematic, direct instruction in skills associated with phonics.

Address all correspondence and reprint requests to Dr. Christopher Kliever, Department of Special Education, University of Northern Iowa, Cedar Falls, IA 50614. E-mail: kliever@uni.edu

Beginning to Read (Adams, 1990) initiated the ascendancy of decoding readiness as the singular entry point to early literacy including now in the preschool (Dickinson, McCabe, & Essex, 2006). Adams' views were largely reiterated in the *Report of the National Reading Panel: Teaching children to read* (National Reading Panel, 2000), another report commissioned by Congress. Although ostensibly presenting a view balanced between decoding and meaning making, the Congressional Panel heavily emphasized what it termed alphabetic (i.e., phonemic awareness instruction and phonics instruction) in the primary grades.

Within the decoding-readiness paradigm, written language development is not considered to be intrinsic to the child but is described as a relatively recent (in evolutionary time), contrived, arbitrary, and cultural creation (Ashby & Rayner, 2006). Thus, written language is considered wholly nonintrinsic and must be taught through direct instruction and drill along a trajectory of sequenced, mechanized skills adhering to four component areas: (a) phonemic awareness—the conscious awareness on the part of young children that words are made up of a variety of sound units or phonemes and the skills involved in breaking words into component sound bits; (b) alphabetic principle—the general knowledge about the alphabet including that phonemes can be orthographically represented in the form of letters and letter combinations (called graphemes) and vice versa; (c) oral language—vocabulary development and correct English usage; and, in certain programs, (d) orthography—spelling and the rules associated with spelling (Adams, 1990, 2001; Adams, Foorman, Lundberg, & Beeler, 1997; Whitehurst & Lonigan, 2001).

Of the four component areas, the first—phonemic awareness—is considered primordial to all further early literacy skills. Adams (2001) noted, "In any complex endeavor children must learn to walk [i.e., decipher phonemes] before they run [i.e., make meaning of text]" (p. 68). She then rhetorically asked, "Learning [to read] must start somewhere: if not with letters and phonemes, then where?" (p. 68).

It is an unfortunate, yet revealing metaphor, in that many children do not "learn to walk" but still can become successful at navigating valued terrains including, I assert, the inclusive early childhood literate community (Kliewer et al., 2004). Indeed, there is a growing awareness in the arena of disability and inclusive schooling that young children with significant developmental disabilities associated with communication and intellectual impairments are able to dramatically develop in their literacy profiles (Browder et al., 2006; Katims, 2000; Koppenhaver & Erickson, 2003). In an unfortunately sporadic fashion, this realization is slowly beginning to impact on the applied fields of inclusive education and disability studies (Kliewer, 2008). However, a perusal of annual conference presentations over the past 3 years at the International Reading Association, the National

Reading Conference, and the National Association for the Education of Young Children suggests that the wider field of early literacy is unaware of, or disinterested in, the literate lives of young children with significant developmental disabilities.

This dearth in focus may in part be explained by the two early literacy conceptual models around which literacy scholars and policymakers rally. Both emergent literacy and decoding readiness emphasize spoken language as central to literacy development. Certainly, in the emergent paradigm, there is a recursive design in which the child's developing speech affects the development of other sign and symbol systems and is in turn affected by those other systems (Teale & Sulzby, 1986). However, because the model is based on what is considered normal development, spoken language, as the most prominent symbolic communication system, retains a privileged status. This is also, quite obviously, true in programs focused on decoding readiness in which spoken sounds are considered the very basis of any further literacy development.

Communication impairments (meaning, at a fundamental level, extreme difficulties first and foremost with spoken language), whether considered core or peripheral, are ubiquitous for individuals cast as severely developmentally disabled (Kliewer, 2008). Young children with significant developmental disabilities, supported in either developmentally appropriate or readiness models of literacy, may struggle to find a foothold within the classroom's orally based literate community. That struggle is then compounded by an array of professional dispositions that conspire to maintain the child outside the literate realm. These include, among many, the following: (a) clinical attitudes that suggest that other developmental needs take functional precedence over written language learning (Kliewer & Biklen, 2001); (b) lack of knowledge about and experience with assistive technology (AT) and augmentative and alternative communication (AAC) systems (Foley & Staples, 2007); and (c) ensconced professional beliefs that children measured to be significantly disabled are intellectually incapable of attaining literacy (Mirenda, 2003).

We might speculate that young children with significant developmental disabilities could, to whatever degree possible, insert silent speech in place of their peers' spoken route to reading. Of course this requires the field to move beyond anachronistic, albeit deeply entrenched, attitudes that suggest not being able to speak is synonymous with having nothing to say. As an example, in a harsh critique of the literacy demonstrated by people whose typed communication was physically facilitated (e.g., facilitated communication), Jacobson, Mulick, and Schwartz (1995) ignored amazing advances in the field of AAC and AT as well as what we know about the relationship between expressive and receptive communication, to assert, "That there is a strong presumptive relationship, in general, between overt [i.e., nonaugmented] production [of commu-

nication] and actual ability is a cornerstone of psychological assessment methodology, statistics, and psychometrics" (p. 757).

Indeed, some studies have demonstrated that the written language development of children with severe disabilities do benefit from either an emergent literacy environment (Erickson & Hatton, 2007) or explicit sound to letter instruction (Joseph & Seery, 2004). However, particularly with regard to the now dominant decoding-readiness frame, the accumulating body of evidence suggests routes alternative to a strict phonics regimen may be more appropriate for the literate development of young children with significant developmental disabilities (Basil & Reyes, 2003; Kliever et al., 2004). Current policy aside, this is also true for many typically developing children (Kress, 1997). Research overwhelmingly documents that young children without disabilities build and access written language lexicons not just through decoding but also through multiple paths associated with word (and morpheme, syllable, and even phrase) recognition (Beard, 2003). Word recognition is, of course, an important facet of reading. It connotes the capacity to move with automaticity from textual form to meaning without the laborious, and often ineffective, need to first translate strung-together letters representing sounds and sound blends into their spoken counterparts and only as a last step arrive at meaning (Stanovich, 1991). In fact, quite opposite of current early literacy programs that have by and large made decoding an end in itself, decoding should instead be approached as one tool that may be useful in the child's active efforts to make text mean (Egan, 2006).

Preschool children, who naturally have limited knowledge of the alphabet, are very capable of constructing quite complex written language lexicons by way of non-alphabetic, visually salient features of words and word parts (Ehri, 1995). These sight word lexicons are developed and accessed in multiple ways including, for instance, through rote memorization and recognition, analogizing to known morphemes and whole words, making use of contextual clues, initial letter recognition, etc. The child is not working at the level of sound to letter but rather at the level of visual form to meaning.

Capacities associated with word recognition begin early in the lives of children who, we know, are naturally inclined to make sense of the surrounding symbolic world (Gardner, 1991). The young child who recognizes the Golden Arches as her favorite restaurant is through logographic functioning turning an abstracted symbol directly from form to meaning (Stainthorp, 2003). This is not unlike that which is asked of countless individuals with severe disabilities, including preschoolers, who are approached with prefabricated pictographic symbol boards as their primary mode of expression. In this common situation, the person making use of the alternative form of communication is required to make visual (or, depending on the case, tactual) sense of an array of symbols. Granted, the pictures used, whether picture commu-

nication symbols (Mayer-Johnson, 1981), Blissymbols (Hehner, 1980), etc., are meant to look like that which they represent but are in actuality highly abstracted images that cannot capture the breadth, the complexity, or the highly personal, immediate, and individualized form of the activities, ideas, emotions, etc., meant to be communicated by an actual person.

The symbols on a communication board in effect act as metaphors. They do not mirror any actual form of reality but only capture that which is considered by their designer (who most likely has no prescient knowledge of the individual user) to be a particular critical feature of the represented idea. It is, for instance, as if that stick figure holding out what appears to be a cup is seeking "more to drink." The expectation, then, is for the communication-aid user to turn the metaphor into meaning.

The construction of metaphor as a way of developing meaning underlies all children's development of literacy as chains of linked signs come to symbolize, mean, and represent critical qualities of objects, actions, and ideas (Gardner, 1991). Kress (1997) noted that "Signs [i.e., symbols] are the result of metaphoric processes in which analogy is the principle by which they are formed. Analogy is a process of comparison or classification: *x* is like *y* (in criterial ways). Metaphors are classificatory statements" (p. 12).

Certain educators and researchers, recognizing that absolutely no evidence exists suggesting that making meaning of the visual form of written language is any more intellectually taxing than making meaning of, for instance, Blissymbols (see Smith, 1999), have conscientiously included written captions on communication symbols and have, in certain instances, moved entirely to text. British language scientist Susan Buckley, for instance, has spent nearly three decades developing the literate profiles of preschoolers with trisomy 21 (e.g., Buckley, 1984, 1985, 1995, 2006). Her work describes dozens of toddlers and preschool children, all of whom have been identified as having moderate to severe cognitive delays, and some as young as 2 years old, learning to read alphabetic print at levels far beyond what is generally conceived to be possible for typically developing preschool children.

Many of Buckley's young research participants are learning to read before demonstrating recognizable or seemingly useful spoken language. She noted that the children were not learning to read as a language system secondary to speech, but as a first language (much as spoken language is considered to be the "first language" of nondisabled children; Buckley, 1985). Rather than following three stages beginning with seeing the printed word, translating the printed word into its spoken form, and finally comprehending the word, the young children involved in her studies were instead going straight from seeing the printed word to its meaning. Evidence of this first occurred when certain of Buckley's preschool

research participants who had the ability to articulate one word utterances demonstrated logical semantic errors when reading flash cards. For instance, when shown the word "shut," a 3-year-old child said, "closed." When shown the word, "ship," a child said, "boat." These children were going straight from the visual image of the word to its meaning. Buckley (1985) hypothesized that for many children with significant developmental disabilities, "Mastering a written language is in some way easier than mastering a spoken language.... Words that are seen in their written form are retained more readily than words heard in spoken form" (p. 322). Further, although agreeing that phonics may play a useful role in some reading instruction, Buckley (1985) pointed out that "It is not essential for learning to read" (p. 327).

Cossu and Marshall (1990), Cossu, Rossini, and Marshall (1993), and Cossu, Shankweiler, Liberman, Fowler, and Fisher (1988) reported findings similar to Buckley's from their experimental investigations of the reading development of children who had been identified as having moderate to severe cognitive impairments in conjunction with communication disorders. Their research came out at a time when many others were beginning to make absolute causal links between phonemic awareness and ability to read. In response, Cossu et al. (1993) stated,

We simply wish it to be accepted that not all children depend on phonological awareness in order to learn to read. If it is agreed that different children learn to read in different ways and that phonological awareness may play little or no role with some children, then we have no quarrel with assigning some importance to phonological awareness in the reading development of other children (p. 135).

A modest but growing body of evidence now suggests that literacy development for young children with significant developmental disabilities is optimized not through decontextualized drill but when written language opportunities and activities are contextually embedded in inclusive, meaningfully motivating, communicatively based, interactive activities and opportunities (Koppenhaver, Hendrix, & Williams, 2007). Basil and Reyes (2003), in describing an experimental study using a computer-based literacy program for six children labeled with severe intellectual disabilities, noted that the participants' dramatic (and sustained) literacy learning occurred because the instructional approach applied strategies that were "similar to those that typically occur during spontaneous dialogues and co-construction of language ... Creating interesting problems for students to solve rather than giving them instructions to follow" (p. 29). The researchers concluded that, for their participants,

Poor reading skills cannot be explained by cognitive deficits and impaired underlying processes alone.

When reading has a purpose or meaning for the student, the relevant processes will be activated and the underlying abilities developed. One may speculate whether a lack of what was, for them, meaningful experiences with letters and written words, had constrained the children's development and hindered them in realizing their potential for acquiring literacy (p. 42).

Koppenhaver, Pierce, and Yoder (1995) noted that "Research suggests that in cases where literacy is incorporated into daily routines and interventions, many individuals with severe disabilities make good progress in learning to read and write" (p. 7). They describe a fascinating situation in which one of their graduate students with expertise in AAC and AT took over a segregated summer school program for seven children, aged 7–11 years, labeled with severe autism. Six of the seven students were considered to have profound intellectual disabilities thought by the program's regular staff to largely preclude their participation in literacy learning opportunities.

The graduate student thought otherwise. She incorporated a systematic literacy curriculum into the regular routines involving highly interactive, generative use of symbols and text. Certain of the multitude of opportunities included the following: (a) daily written journaling based around motivating pictures; (b) oral storytelling using wordless picture books (involving, amazingly, students who previous to the summer program were described as nonverbal); (c) popular media (e.g., *Beavis and Butt-Head*) as motivators to word recognition; (d) modified assessments that allowed the students to demonstrate knowledge through pointing to textual formats rather than through voice; (e) motivating puzzles and games; and (f) simple, systematic exposure to written language throughout the school day. By the end of the 6 weeks, "All [seven students] were able to use print to accomplish classroom tasks after literacy had been integrated into their daily classroom activity" (p. 12). We can only speculate on what occurred for the children when the graduate student left the program to return full time to her studies. Indeed, that these students previously had experienced virtually no opportunities with literacy may largely be a reflection of their lack of access to inclusive environments (Coleman, 1991; Kliewer & Biklen, 2001; Kliewer, Biklen, & Kasa-Hendrickson, 2006).

Through my research, I have come to define literacy as the construction (which includes interpretation) of meaning through visually or tactually crafted symbols that compose various forms of text (Kliewer, 2008). Children in language- and symbol-rich environments begin to develop literate profiles soon after birth as they engage with surrounding images and texts and begin to craft their own narratives in their efforts to make meaning of the surrounding world (Dickinson, McCabe, & Essex, 2006; Morrow & Schickedanz, 2006).

This article is both an ethnographic and an action-based description of how excellent early childhood teachers in inclusive preschool and kindergarten classrooms foster the developing literacy profiles of young children with significant developmental disabilities alongside their typically developing peers through active, engaging, social means. I have developed four broad themes, described here as currents, that support the meaning-based literacy learning of children still commonly cast as intrinsically incapable of literate citizenship, using participant observation in dozens of inclusive classrooms (focused here on just seven since 2005); in-depth interviews with teachers, therapists, and parents; the implementation of increasingly responsive, systematic literacy-based themes, opportunities, and activities into certain inclusive classrooms, and the development of process-oriented portfolio documentation.

Methods

Since the mid-1990s, after my tenure as an inclusive preschool teacher at the pioneering Jowonio School, Syracuse, NY, I have used qualitative methods to study the literate experiences of young children aged 2 to 6 years who have significant developmental disabilities and who are schooled in fully inclusive early childhood programs. Since 2001, my research has been supported through grants from the U.S. Department of Education, allowing me the flexibility to conduct intensive studies in 21 toddler through kindergarten classrooms spread across seven center-based sites in three different states. Although the ideas presented herein certainly reflect on the experiences I have had in all of these environments, for this article I specifically conducted in-depth analyses on data collected in seven classrooms since 2005 when three changes in my research approach occurred.

First, I began to systematically videotape, digitize, organize, and catalogue many of my field-based observations. This has proved invaluable in terms of deeper analysis of the data. Second, I had grown troubled with the conceptual models available for explaining early literacy in light of how I saw typically developing children in these inclusive settings actively, purposefully, and imaginatively engage various symbol systems including text. In 2005, I began to systematically collect careful data on children without disabilities as well as their peers with significant developmental disabilities. Ultimately, these data led me to hypothesize that children do not so much acquire literacy as they create it. Third, based on my previous studies and in cooperation with my participating teachers and families, we began to systematically incorporate increasingly responsive literacy practices into what already were strong literacy environments.

Table 1 presents a snapshot of the seven classrooms. In the far left column are the numbered classrooms and the general age of the children. For each column rep-

resenting an academic year or summer program, I have created three subcolumns. The first describes the total number of children in the class followed in parentheses by the number of children who qualify as significantly developmentally disabled. The second subcolumn describes the number of children with significant developmental disabilities in that class whom I had in previous years observed, either in that same classroom or in a different, younger-aged room. The third subcolumn describes the numbers of hours I spent observing in the classroom and interviewing teachers and parents associated with the class. The total number of hours spent in observation or interview is 431.

Settings and Participants

I chose to focus my attention on these seven classrooms for a variety of reasons. First, each classroom is fully inclusive. This means, by my criteria, that children with significant developmental disabilities are considered full members of the setting and spend no less than 90% of their school hours with typically developing peers. Second, each of the classrooms was assessed using the Early Language and Literacy Observation Toolkit (Smith, Dickinson, Anasatopoulos, & Sangeorge, 2002). On each of the three component parts, (a) the Classroom Observation and Teacher Interview (with a top composite score of 5), (b) the Literacy Environment Checklist (with a top composite score of 40), and the Literacy Activities Rating Scale (with a top composite score of 11), each classroom scored no less than 80%. Third, each demonstrated (as indicated by the Early Language and Literacy Observation scores and qualitative evaluation) an active, programmatic-wide commitment to a recognizable literacy curriculum that included varying degrees of child discovery, teacher-led instruction, alphabet skills, story reading and writing, pretend play, art, dance, and music, symbol-rich environments, etc. Table 2 presents a brief list of regularly scheduled, common teacher-initiated and child-initiated literacy activities and opportunities across the classrooms involved in this study.

Fourth, Individual Education Plans (IEP) and Individual Family Service Plans (IFSP) reflected recognizable literacy goals for students with significant disabilities and demonstrated teacher commitment to the literate development of children with significant disabilities. Fifth, in interviews, parents of students with significant developmental disabilities confirmed their child's active participation in the general community of the classroom. And sixth, data were maintained by the school in the form of portfolios and various developmental assessments (including specific literacy assessments) tracking student change.

These are obviously excellent environments in which to study high-quality early literacy. Clearly, in the tradition of qualitative research, I relied not on random sampling but on what is termed theoretical sampling (Bogdan & Biklen, 2007). I sought environments that

Table 1
Seven Classrooms Under Study

Classrooms	Fall 2005–Spring 2006				Summer 2006				Fall 2006–Spring 2007				Summer 2007	
	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation
1. Pre-K (3–4 years old)	16 (4)	1	30	14 (4)	4	10	17 (4)	2	32	14 (3)	3	12		
2. Pre-K (4–5 years old)	15 (3)		22	12 (3)	3	14	15 (3)	1	38	12 (3)	3	12		
3. Pre-K (3–5 years old)	19 (2)		28	18 (1)	1	12								
4. K (5–6 years old)	22 (2)		25				23 (3)	1	28	10 (3)	3	14		
5. Pre-K (2–3 years old)							12 (3)		22					
6. K (5–6 years old)														
7. Pre-K (2–3 years old)														
Total	72 (11)	1	109	44 (9)	8	36	67 (13)	4	120	36 (9)	9	38		

Classrooms	Fall 2007–Spring 2008				Summer 2008				Fall 2008–Spring 2009			
	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation	Total No. Children (No. With Disabilities)	Previous Observation	Hours of Observation
1. Pre-K (3–4 years old)	17 (4)	3	21	14 (3)	3	9						
2. Pre-K (4–5 years old)												
3. Pre-K (3–5 years old)												
4. K (5–6 years old)												
5. Pre-K (2–3 years old)	12 (3)	1	23				21 (3)	2	6			
6. K (5–6 years old)	19 (3)		32				11 (3)	1	5			
7. Pre-K (2–3 years old)	11 (3)		20	9 (2)	2	12						
Total	59 (13)	4	96	23 (5)	5	21	32 (6)	3	11			

Note: Pre-K = preschool; K = kindergarten.

Table 2
Consistently Scheduled Common Teacher-Initiated and
Child-Initiated Literacy Activities

Teacher-initiated literacy activities
Group picture book reading
Collaborative language experience story writing
Readers' theater dramatizing stories
Collaborative classroom-made books
Felt board and puppet stories
Engagement with literacy-based Internet Web sites
Development of books using Microsoft PowerPoint
Music and rhythm activities
Oral storytelling
Word walls (arrays of meaningful words on wall)
Centers organized with opportunities to rhyme, to label, to develop stories, etc.
Child-initiated literacy activities
Dramatic and fantasy play
Writing and art centers
Listening center with books and stories on CD
Individual and collaborative story time
Puzzles and games
Exploration of literacy-based Internet Web sites

recognized the literate capacity of all young children and that could further my theorizing about how to expand and deepen those competencies. In addition, these were environments organized by teachers who sought out my input to further enhance their strong literacy-based teaching practices.

Primary participants for this study included young children in preschool and kindergarten with significant developmental disabilities. All children defined here as such were students who qualified for significant levels of special education resources in relation to state disbursement patterns because of the presumed degree of disability. Many, but not all of the children, had specific disability diagnoses (e.g., autism spectrum disorder, trisomy 21, cerebral palsy, Rett syndrome, etc.). Preschool children, and now older students, however, may receive services with a nonspecified disability label. In addition, every participating child defined as having significant developmental disabilities had scored on formal developmental instruments in the domains of cognition and language communication at approximately no more than half their chronological age.

Although I retained extensive data on all the children with significant developmental disabilities and many of their typically developing peers, I also created in-depth portfolio documentations (described below) of one specific child with disabilities in each setting observed during an academic period. In a somewhat crude sense, how I initially arrived at the particular child was to simply choose the one who on developmental assessments early in the year performed lowest across the domains associated with cognition, language, and communication. However, once I had begun a portfolio on a particular child, if I had the opportunity to continue observing him or her in subsequent academic periods, I continued developing that portfolio no matter how the child per-

formed in relation to other peers. I have a total of 12 such portfolios from these seven classrooms, 3 of which describe a single child older than 3 years, 4 describe a single child older than 2 years, and 5 describe a single child older than 1 year.

Other important participants in this study included the following: (a) typically developing classroom peers, (b) classroom peers with less severe disabilities, (c) lead teachers, (d) classroom paraeducators, (e) therapists, (f) administrators, (g) volunteers, and (h) immediate and in some cases extended families. In combination with materials and resources, these people constituted the literate milieu surrounding the children with significant developmental disabilities.

Data Collection and Analysis

The findings are based on data from two interrelated sources: traditional ethnographic methods and action-based intervention. In terms of traditional qualitative methods, I conducted participant observations (often using a videocamera) in the classrooms and (without video) in certain homes, in-depth individual and group interviews with adults, and systematic collection of documents associated with the contexts under study. I wrote field notes after observations and, with graduate assistance, digitized video that was analyzed and catalogued according to emergent themes, certain of which are presented here. Although commonly evoked, constant comparative analysis of data is poorly defined and thus poorly understood (Bogdan & Biklen, 2007). The manner in which I proceeded began long before 2005 when I first observed in a single, extraordinarily high-quality preschool classroom, described in Table 1 as Classroom 1.

From data collected in these early observations, I began to metaphorically sketch a picture of how young children with significant developmental disabilities crafted their own, or made meaning of others', symbols. Initially, I was interested only in those symbols connected to traditional text but quickly came to see the interconnection of three-dimensional visual-tactile symbols (used in play and academics), pictorial symbols, and textual symbols. Gallas (2003) describes this as the child's movement from the symbols of "play to pictures to writing" (p. 42). I observed and dialogued with teachers and parents as they introduced ever more complex symbols into the children's daily experiences and observed children as they gained sophistication with symbols as tools for communication, play, and academics.

As my initial sketch took on clearer form, I began to form substantive themes related to the question, "What does it mean to be literate in this specific context?" I then began to expand data collection into other high-quality classrooms. I of course maintained substantive concerns (e.g., What does it mean to be literate in this particular next environment under scrutiny?), but through comparative analysis, my substantive concerns

began to shift toward theoretical abstractions: What does it mean for a young child to be a literate citizen? How is citizenship fostered in young children traditionally excluded from valued statuses? This shift in qualitative research from the actual to the abstract is referred to as the formal generation of grounded theory (Bogdan & Biklen, 2007).

Including a wider array of settings confirmed, extended, and refined my emergent themes. For instance, I began to see a trend that many of my young participants with significant developmental disabilities more actively demonstrated symbol recognition and use when those symbols were closely linked to daily experiences. On the basis of this theme, I worked with several teachers to expand such opportunities. In one classroom, where curricula were organized around a weekly thematic unit, it became a Friday ritual for all the children to produce a shared classroom book on the theme using digitized photos, text, and drawings. I also assisted in having children participate in co-constructing messages for their home-school notebooks, a task that previously was purely an adult effort. As such, I strayed from traditional qualitative efforts in an action format to impact on the environments under study.

In addition to field notes, interview transcripts, and video, data also took the form of developmental screening and various other assessment scores, IEPs and IFSPs, and curricular artifacts produced by the children. In developing the specific in-depth portfolio documentations described above, I took regularly scheduled video of the child in both natural and contrived situations. By contrived I mean that in coordination with classroom staff, we organized specific literacy-related tasks that served both to evaluate and to demonstrate various literacy capacities. One such activity included having a child indicate a topic around which to type a simple sentence. The sentence was then printed and cut apart, and the child was asked to recreate the original sentence through gesture, eye-gaze, etc. Portfolios also contained weekly e-mail posts from classroom staff regarding the child's literacy-related successes and struggles. I also assisted in planning and supporting *portfolio children's* (for lack of a better term) symbol-based communicative engagement with scheduled activities and maintained detailed records of the level and form of support the children required. Finally, because a child's literacy is constructed in meaning-based, interactive fashion, I made use of sociogram methodology (Barnes & Isaacson, 1982) to systematically analyze the child's level of engagement with peers in structured and unstructured moments of the day.

Findings

Table 3 describes a multitude of literacy-based dynamics young children accomplish to varying degrees as they weave their way from constructing three-dimensional,

Table 3
Literacy-Based Dynamics Accomplished to Varying Degrees as Children Engage the Construction of Visual-Tactile, Pictorial, and Text-Based Symbols

-
- Experiences, objects, factual and fictional ideas, emotions, and desires may be expressed as narratives making use of metaphors and visual symbol systems.
 - Symbols link meaning to a particular form that is either three or two dimensional.
 - Meaning may be translated from symbol to spoken language and from spoken language to symbol.
 - Meaning may be translated from three dimensions to two (and back again).
 - Using two-dimensional symbols, one expresses on a particular surface (making decisions about how to construct that space), using various media, and using particular designs that may strive to visually reproduce reality (e.g., a picture) or represent a symbol in place of realism.
 - Drawing two-dimensional letters of the alphabet captures meaning and sound.
 - Realize that text is important.
 - Understand that text can be made to mean.
 - Comprehend that groups of letters, clustered and arranged from left to right, are purposefully patterned and can convey information or be meaningfully deciphered.
 - Realize that particular repeatable, relatively simple shapes can capture the complexities of thought and emotion.
 - Develop the orthographic sense that certain important elements (including its sound) are attached to particular letters and arrangements of letters.
 - Recognize that text occurs in lines or organized blocks.
 - Recognize that writing is organized visually and set in space unlike speech, which has an ephemeral existence in time.
 - Realize that complex clauses from main to subordinate may be layered and retrieved through written language such that complex ideas and stories may be told in a manner quite distinct from speech.
 - Construct the sense that marks, which are closely connected or linked have meaning.
 - Recognize that written language has spatial qualities, lay out, and directionality.
 - See that written language is often linear.
 - Realize that patterns of letters and individual letters may be wrenched from one situation to a new situation to make new form and meaning.
 - Begin to recognize forms of patterned letters as actual, interpretable words.
-

visual-tactile symbols in play to two-dimensional pictorial symbols and finally to text-based symbols when participating in the symbol- and print-rich, high-quality early childhood programs under study:

Children actively constructed these elements and dynamics in collaboration with one another and surrounding adults and in interaction with available resources and materials forming what I refer to as the inclusive early childhood literate community. This is not a linear process built on hierarchies but is better envisioned as a flow. The metaphor of flow conjectures a certain seamlessness, albeit one filled with eddies, vortexes, rapids, turbulence, bogs, and the occasional hurricane.

Extensive ethnographic data gathered in the seven classrooms described documents that young children

measured with significant cognitive and communication disabilities may actively participate as full citizens of the inclusive early childhood literate community when various symbol systems are thoughtfully introduced as interactive, social tools for the meaningful engagement of thought and emotion. This occurs in the form of four currents that run through the literacy flow of high-quality and symbol- and print-rich early childhood programs.

Current 1: Making Meaning of the Visual-Tactile, Pictorial, and Text-Based Narratives of Others

On a September Monday in the preschool jungle room, described in Table 1 as Classroom 1, the humane society served as the thematic unit of the week around which curricula was then organized. Nyla, a typically developing 4-year-old, had her mom bring their family's terrier for sharing (e.g., show and tell). The jungle room's lead teacher, Shayne Robbins, consistently drew her students' lives from outside of the classroom into the classroom experience in an effort to promote a common sense of holistic relevance regarding the curriculum. In this instance, Nyla's family had just celebrated the puppies' first birthday, although the actual date of birth was uncertain because the dog had in fact been found at the local humane society. At teacher Robbins' request, Nyla's parents had sent as attachments several photos of the dog, including one taken at the humane society the day the family met the terrier.

Robbins arranged and captioned on a single page four photos including a picture of the outside of the humane society taken from the Web (captioned *Humane Society*), a photo of Nyla and her brother in the humane society with the dog (captioned *Meeting Maggie*), a photo of the puppy's first meal at Nyla's house (captioned *Maggie eats*), and a picture of a much larger Maggie at her own birthday party (captioned *Maggie's first birthday*). Robbins then made 16 copies of the page, one for each child in the class, including her four students with significant developmental disabilities.

Robbins explained in a research interview, "This [page of captioned photos] is really more about, I guess you could say, Jo, Lewis, Evan, and Jackson [the four students with the most significant disabilities], but really, every kid—I mean, look at Nick! He really benefits too [referring to a typically developing peer]. It gives all the kids something visual to hold, make sense of, remember by." Robbins was expressing her efforts to formulate activities within the conceptual model of universal design (Thousand & Villa, 2000). This meant that classroom experiences were designed in an inclusive format from the ground up and in a manner that benefitted all participating children rather than introducing specific adaptations for certain students only after the activities were created (although further individualized

modifications were commonly a part of Robbins and her team's efforts).

After Nyla and her mother's presentation of Maggie, Shayne Robbins placed on a board each captioned photo she had created in chronological sequence while reiterating Nyla's earlier description. Built naturally into most of Robbins' lessons were literacy facets such as left-to-right orientation, stories might be captured in symbols, symbols can be arranged in logical order, etc. Jo, then 4 years, 1 month, and labeled with autism, sat near Nikki Lent, one of the program's language therapists. Jo's primary modes of communication then included body language and gesture, sounds, and some gesture toward captioned symbols and photos. As Robbins' went from picture to picture, Lent tried to direct Jo's attention to her own sheet. Jo took quick glances then frequently stood, clapped her hand on the sheet, and would return to sitting only with the touch of Lent's hand on her back.

Later that Monday, teachers set up a Maggie's story station as one of several centers time locations for small groups of children. Each day at a consistent time, all children in the classroom rotated through the available centers. At the Maggie's story center, the students were to paste the cut-apart captioned pictures in correct sequence. A paraeducator, Joyce Connor, supported Jo while at the same time two friends worked alongside largely without adult guidance. After retelling the story in correct order while pointing to the pictures and text, Connor laid the four pictures in front of Jo and asked, "Which happened first?" Jo grabbed at the birthday party picture and, with a shriek, immediately crumpled it up. Connor flattened the picture and asked again. Again, Jo tried to grab the birthday party picture. Connor responded, "That is such a funny picture. You are a party girl, Jo. I know how much you like to party!" Connor then removed the two middle pictures, just leaving the photo of the humane society and the birthday party. "Which comes first?" she asked, "Going to the humane society to meet Maggie or throwing her a birthday party?" Connor gently held Jo's hand in an effort to help control Jo's impulsivity. Jo's arm shot through Connor's hand and she slapped the correct picture with force letting out what those around her perceived to be an angry cry. Connor continued to support Jo using just two options at a time until the story sequence was laid out. Of interest, when leaving the center, Jo grabbed a copy of the birthday photo and carried it with her, crumpled, the rest of the day.

In the above data vignette, Jo, along with all her peers, was exposed to her friend Nyla's spoken and photographic narrative about her dog, Maggie. Jo experienced the idea that the spoken narrative could be turned into pictorial and textual form and retold through left-to-right sequencing of the symbols made available to her. Fundamental to literate citizenship is the developing understanding that others have meaningful narratives to

express and can do so making use of visual symbols (Morrow & Schickedanz, 2006). Young children with significant developmental disabilities must be exposed to, and actively connect with, others' meaning making through narrative and symbol construction. This requires that children be in environments swirling with stories expressed by peers, heard on tape and CD, run on the computer, read, collaboratively created, played and acted, told by teachers, danced, drawn, retold, remembered by visiting grandparents, etc.

Later in the week, Shayne Robbins repeated the four-sequence story of Maggie before a field-trip to the humane society depicted in the photo used. Here, the class, including Jo, turned text and pictorial symbols into actions when they left the page to actually experience the real life setting. On Friday of that week, at my request, Jo was again asked to sequence the story with all four pictures in front of her. She did so using gestures quickly and correctly, although seemingly with some resentment.

In a second example of Current 1, making meaning of the symbol-based narratives of others, 3-year, 11-month-old Jason brought in his well-used copy of the book *Just Me and My Dad* from the *Little Critter* series (Mayer, 2001). Every week, certain children were asked to share a favorite book. Jason's summer program, described in Table 1 as Classroom 3, was focused on the upcoming Fathers' Day celebration. Jason had a chromosomal anomaly resulting in severe physical and communication disabilities, and evaluation instruments suggested significant cognitive delays. Much to Jason's delight, at morning circle time, his teacher, Paula Rush, read the book to the entire class with Jason seated on her lap assisting in showing the pictures. When she had finished reading the book, Rush asked Jason, "Do you have a favorite part?" He arched on her lap indicating an affirmative. With several children shouting out their favorite parts, Rush turned through the pages of the picture book whereas Jason stared with rapt attention. When they got to the pages depicting a bear stealing the *Little Critter* character's fish, Jason bent forward touching his face to the book.

In this data sequence, young children were of course experiencing the textual and pictorial narrative of a picture book, including that stories in books have particular structural features, that stories are told from front to back, left to right, etc. Although the teacher turned text into spoken language, the children augmented that which was captured in the text by making meaning of the illustrations. Relying on the text alone would render that particular story senseless. Relying on the illustrations without text might allow a story to be built, but not the one experienced by the children. After Rush's question regarding the favorite part of the book, Jason and his peers also experienced that, unlike with speech, one may return to previously viewed symbols or text to find, to review, or to clarify a particular meaning.

In addition, Paula Rush introduced Jason later that day to a *Little Critter* Web site (www.littlecritter.com), which contained an animated version of the book read in the morning. While Jason and three peers watched the show, classroom paraeducator Sonia Temple flipped through the book showing the children corresponding pages. Here the children were experiencing the narrative in an animated symbolic format and contrasting it to its pictorial and textual version. I watched Jason's peers, who had varying degrees of familiarity with the story, try to out shout one another with predictions as to what scene would occur next. I was struck by Jason's inability to join the verbal fracas due to his lack of spoken language. At my next observation in the classroom the following week, I brought with me several photocopied pages of the book doctored with simplified one- or two-word captions. Jason and I, with one other child, watched the video. Using the pause icon, the two boys took turns predicting what would occur next. Jason did so by gesturing and/or gazing among three- or four-page options. Of six opportunities, Jason was correct five times. His typically developing friend was correct three of seven times although he did not use the pictures.

A final description of Current 1 occurred during *Choose-and-Do* time (e.g., free play) at the Bethel Nursery School described in Table 1 as Classroom 2. Using a variety of centers, activities, readings, etc., the teaching team had introduced the class made up primarily of 4-year-olds (some turning 5 years old) to the concept of the solar system. I observed as several typically developing children swirled in, out, and about a large box that the class had crafted into a spaceship. The teaching team, in interaction with the children, generally developed a large art-based project related to each classroom theme. In this observation, the children together constructed a flowing narrative of space exploration that ebbed and surged in various complex trajectories. All the children donned some form of headgear available in the classroom in an effort to represent space helmets. For instance, Jasmine wore a coveted plastic hardhat. In addition, the children had helped one another to tape sheets of article to their backs as oxygen tanks. In so doing, the children were in effect crafting visually symbolic metaphors out of materials available to augment, to enrich, and to deepen the action and orally based story line. A plastic hardhat is not a space helmet, but to Jasmine and her peers, it held enough critical helmet qualities to serve as if it were an astronaut's helmet and signal to one another their common purpose. Further, a double metaphor was created in that astronauts are more than a space helmet and oxygen tank, but to the children, these were the critical features required to symbolize their astronaut-ness.

Jodi, then 4.6 years old, appeared to be watching the play as she sat at a nearby table where she had been snacking. Jodi, tiny for her age, used a rolling walker to maneuver about the classroom. She had significant

physical disabilities, had been labeled on the autism spectrum, and was described as nonspeaking. Noticing that Jodi had finished her snack, a physical therapist assistant, Yvette Plummer, who was in the classroom to work with Jodi, asked, "Do you want to be an astronaut?" Dramatic play was considered by this teaching team to be fundamental to all children's learning; thus, a tremendous amount of adult energy was expended on supporting the participation of children who otherwise might be excluded. Plummer positioned Jodi in front of the first page of her symbol book that contained the words "yes" and "no." Plummer stabilized Jodi's arm at the elbow, and it appeared that Jodi quite deliberately brought her hand down on the word "yes." Plummer emphasized, "You said, 'yes,'" and assisted Jodi to her walker and aided her in moving into the dramatic play.

A peer, Nadine, said directly to Jodi, "You gotta get a space hat and one of these," pointing to her back on which was taped the article symbolizing an oxygen tank. Plummer found a fishing hat and put it on Jodi. Jodi plopped to ground and threw the hat. Jasmine noticed and said, "That's not a space helmet. She needs a space helmet." Plummer searched, then left the room, and returned with a plastic knight's helmet, complete with a visor. Ben, involved in the space narrative, said, "Whoa, can I use that, Jodi?" Plummer said, "Let's let Jodi have a turn," and Jodi kept the helmet on. Plummer then wrote the word, "Captain," on a sheet of article and drew a quick rendition of the American flag. She taped the sheet to Jodi's back. The other children then wanted words and flags on their tanks. Plummer maneuvered Jodi into the rocket and sat her in front of a control made out of a plastic stick stuck through a small hole in the box and reinforced with duct tape. Jasmine followed Jodi into the rocket meaning Plummer had to squeeze out. Jasmine sat beside Jodi and said, "You got to drive the ship up. Here," and she grabbed Jodi's hand pushing the stick in various directions as she made Jodi sway and bob. Other children outside the rocket started pushing the box back and forth. Ben yelled out, "Oh no, we heading at the moon!"

In this scenario, Jodi was an active participant in the swirling, complex narrative crafted initially by her peers. The story line, although largely orally based, was deeply enriched through the children's construction of three-dimensional visual-tactile symbols (e.g., the helmets) as well as pictorial and ultimately textual symbols as the children followed Plummer's lead to decorate the oxygen tanks. We cannot know the extent to which Jodi comprehended the full meaning of the narrative, but her engaged participation in the story line of others indicated dramatic social growth in contrast to her behavior just months earlier when she largely avoided any interaction with peers and adults apart from the classroom's lead teacher, Marilyn Moore. Moore told me in a research interview, "Look how far she's come! And we've only had her for, like what? Four months now?"

The importance of actively engaging in the symbolic narrative structures of others cannot be overstated in relation to a child's developing literacy capacities. Overwhelming documentation exists that young children with significant developmental disabilities experience far fewer such opportunities than do their typically developing counterparts (Erickson & Hatton, 2007; Kliever et al., 2004; Koppenhaver et al., 2007; Light & Smith, 1993). Research beyond this study demonstrates that providing young children with thoughtful interactive opportunities to participate in the stories of others has extremely positive implications for young children's oral language development; written language development; effective AAC use; predicting, labeling, and sequencing skills; alphabet recognition skills; social skills; and general curricular and developmental levels (Erickson & Koppenhaver, 2007; Koppenhaver et al., 2007).

Current 2: Making and Expressing One's Own Meaning Through Narratives Crafted From Visual-Tactile, Pictorial, and Textual Symbol Systems

As young children with significant developmental disabilities are immersed in the discovery of symbol-based narrative structures and models, they must also be supported to express their own narratives, no matter how brief, using a range of symbol systems. In the data vignettes so far provided, I have already presented a number of examples. Jo, for instance, in Shayne Robbins' jungle classroom, was described working at a center sequencing a story related to a friend's dog. Joyce Connor, a paraeducator in the class, had Jo point to captioned pictures (with increasing degrees of success) to complete the task.

I had observed Jo, one of my portfolio children, the previous academic year, which she had also spent in the jungle room with teacher Shayne Robbins. Robbins had evaluated Jo, who had just turned 3 years old, at the beginning of the year using, among various instruments, the Battelle Developmental Inventory (original version; Newborg, Stock, & Wnek, 1984). "She really wasn't testable," Robbins told me the year before my observation described above, "She's like at infant-levels on everything, but it doesn't mean anything." Specifically, in the domains of cognition and (receptive) communication, Jo demonstrated a developmental age range from 11 months to 1 year, 2 months.

Robbins ignored the low language and cognition measurements. In coordination with her team that included Nikki Lents, the speech and language therapist, Robbins immediately opened up a range of symbols, photographs, and written words to support Jo's communicative participation in the inclusive environment. The team firmly believed Jo had narratives to express. For instance, in her communication notebook was a page with two rectangles labeled "yes" and "no." An adult

would pose appropriately worded questions to Jo then add (with gesture), "Point to yes or no." Within a month of school starting, Jo appeared to reliably make use of the written words yes and no. Although certainly rudimentary, this breakthrough offered Jo an opportunity to voice her own choices—the beginning of narrative!

In another example, Jo demonstrated a particular affinity for the children's song *I've Been Working on the Railroad*. Robbins told me, "The first time we sang that in here she went nuts. I've never seen her so excited." Jo had a small tape player at her home, and her mother told me she had learned at the age of 2 years how to get to that particular song on a children's tape (perhaps justifying to the team's skepticism toward the assessed developmental scores). "Sometimes she'll play it like 50 times a day," Jo's mother said, "It drives you crazy." In the classroom, Robbins had created a box of captioned symbols representing 16 possible song choices for group time. By the second month of school, when teachers asked Jo which song she wanted to sing to end circle time, Jo was able to dig through the box of symbols and retrieve her favorite one, represented by text and a picture of a steam engine. Again, the symbol allowed her to express the narrative, "This is what I want." Although most of Jo's classmates were able to voice the title of a song, all of them made use of the song box when choosing a selection for the class to sing. In this way, although the song box was essential for Jo's participation, all of her friends were also learning about how information might be encoded and made use of in terms of making selections.

At the end of the academic year, Jo, who was then 3 years, 10 months, demonstrated receptive language skills associated with children of approximately 2 years, 4 months. Jo attended the summer program and at the beginning of the next academic year scored a developmental rating at approximately 2 years, 10 months to 3 years, 1 month. Apart from the assessment, she recognized all 26 letters of the alphabet and was able to recognize more than 20 words, albeit she may have had a much larger sight word vocabulary.

Jo's growth in her use of symbols reflected in part her access to symbol use at all. Rather than waiting on Jo's attainment or exhibition of particular developmental skills associated with symbol use, the team simply moved forward, opening symbols to her in meaningful, interactive fashion. In a seminal article that appeared more than 20 years ago, Kangas and Lloyd (1988) demanded the fields associated with early childhood special education end the then-dominant practice of delaying or entirely denying AAC interventions until the child demonstrated particular assumed cognitive prerequisites—an exceedingly difficult task when one is denied symbols to communicate.

Kangas and Lloyd (1988) noted that building communication requires beginning communication and that this should occur "in natural settings" (p. 218).

Similarly, in reporting on two earlier studies (i.e., Skotko, Koppenhaver, & Erickson, 2004; Marvin, 1994), Koppenhaver et al. (2007) described providing parents of young girls with Rett syndrome instruction to support the use of picture communication symbols, eye-gaze frames, and one-to-three voice-message-output devices in interaction around story books. As the girls gained experience with the symbol systems, their communication and narratives gained in fluency and complexity: "That is," noted Koppenhaver et al., "the girls needed to communicate more to learn to communicate more successfully" (p. 83).

Enacting Current 2 requires that the surrounding adults presume the child to be competent. Elsewhere I have described this presumption as *local understanding* (Kliewer & Biklen, 2007)—a three-pronged process in which teachers (a) develop a deep sense of the individual learner as rightfully belonging, intelligent, and imaginative; (b) craft responsive, universally designed contexts within which the child's competence is demonstrated and fostered through full access and participation; and (c) promote full citizenship through an on-going democratic dialogue that includes the family, the paraeducators, the therapists, the other educators, and the child himself or herself. Local understanding is, of course, not a literacy methodology, but it serves as the basis for opening the child's own construction of narrative.

In an example of local understanding, I observed Kevin beginning with his first center-based school experience in the bunny room described in Table 1 as Classroom 5. He entered the program at the age 2 years, 6 months. Kevin had, just a few months earlier, been defined as severely autistic. In the bunny room, his teacher, Kimberly Simms, in coordination with speech and language therapist, Myra Williams, ignored developmental scores that, as with Jo, suggested the preclusion of a symbolic understanding of the surrounding world. They immediately developed an array of interactive symbols accessed through a MiniMo voice output device (built, and now discontinued, by DynaVox Technologies). Kevin was immediately supported in both natural and contrived therapy situations to use his device. He demonstrated highly impulsive, erratic pointing skills, and so surrounding adults slowed his gestures by supporting his pointing at the hand. "We knew he had stuff to say," explained Simms, "but he just couldn't get it out. So we had to slow things down."

When Kevin was 2 years, 10 months old, I observed a choice situation where children could go either outside or to the program's kitchen for a cooking activity. Two relevant symbols were displayed on his device (which allowed for up to 9 options at once). With an adult's hand on his forearm, Kevin pointed to the symbol for playground and the device said, "Playground" in a child's voice. When Kevin turned 3 years old, therapist Williams had a growing suspicion that Kevin's intense

focus on print was more than a simple obsession. "Am I crazy or is he reading?" she asked in a team meeting. We created 40 flash cards based on familiar text from the classroom environment, including physical objects, names of friends, written words used at circle time, etc. With a peer at his side, Williams placed three words at a time in front of Kevin and asked him to point to a particular one. Over the course of three sessions, Kevin demonstrated recognition of 35 words. The teaching team immediately began to incorporate word-building skills into Kevin's daily activities. They also began to use white boards to quickly write key words and ideas at any moment of the day. This greatly enhanced Kevin's ability to remain with the group and seemingly stay focused, areas that had been problematic for the active child. Although most of Kevin's classmates only demonstrated a tangential interest in this new focus on written word and sentence construction, a small group of typically developing peers became actively involved in the effort. For instance, Michaela, 3 years old, was commonly seen at group times sitting beside Kevin with a white board on her lap approximating the letters an adult was writing on Kevin's board and sounding out the word approximation with exaggerated emphasis as she ran her hand from left to right across the text.

As with Jo, Kevin required access to symbols to begin constructing symbol-based narratives. Allowing him access to symbols required a teaching team who believed that Kevin could grow in his communicative and language capacities. The team, of course, had no idea where its efforts might lead and certainly did not consider that print would so quickly become a viable option—if ever! Yet, members of the teaching team looked for Kevin's competencies and crafted ever more responsive educational and communicative contexts to allow for his full participation.

Current 3: Developing Complexity With Visual-Tactile, Pictorial, and Textual Symbol Systems to Construct Narratives

As young children with significant developmental disabilities are immersed in the discovery of the visual-tactile, pictorial, and written-language narrative construction of others and as opportunities to craft symbol-based narratives are opened to them, teachers must also support movement toward increased complexity and sophistication with symbol systems. Importantly, opportunities with text must be a part of the child's inclusive experience.

Research has demonstrated that all too frequently, the rare opportunities offered a child with significant developmental disabilities to engage symbols and text (at all) are limited to extremely brief, adult-designed, and imposed expressions of bodily needs (Kliewer & Biklen, 2001; Koppenhaver & Erickson, 2003). The expectation is that a child with significant disabilities has nothing

to symbolize beyond those few expressions of bodily function. The resulting inhibited skill with communication and literacy is then blamed on what are considered to be the children's intrinsic deficits rather than recognized as a manifestation of the stagnant opportunities offered to the children.

In the data vignettes so far provided, I have already presented a number of examples of Current 3. Jo, for instance, in Shayne Robbins' jungle classroom, was described sequencing a story related to a friend's dog, a task rife with symbolic literacy skills and opportunities. Although this activity was in response to another child's original narrative, by sharing the story with the class, each student, in the process of interpretation, made the story individually meaningful, thus transforming the original narrative.

Young children, when interacting with the narrative of another, are not passively nor objectively interpreting or mirroring a detached story line. Rather, the act of interpretation should instead be viewed as an active process where children make the other's story mean (Fox, 2003). Children must link what is said, read, painted, danced, etc., and connect those symbols to their own symbolic lexicons crafted from personal experiences. Gallas (2003) described this as "projecting ourselves into another space, another time, another framework" (p. 20). She continued, "To read [or hear] a text with understanding and insight, we must move inside the text, pulling our life along with us and incorporating the text and our lives into a new understanding of the world" (p. 20). Thus, interpretation should itself be defined as narrative construction as the child actively makes the expressed tale individually meaningful.

Certainly, within the sequencing activity described, there was an agenda which suggested that Jo might be more correct or incorrect in her retelling of the tale of Maggie the terrier. As such, her first effort to grab the photo of the dog's birthday party was deemed to be incorrect, albeit we cannot know Jo's actual motivation or narrative intent. From the observational evidence, it seemed likely that Jo understood, or at least quickly came to understand, the task at hand but was resistant to the imposed demands and wished instead to focus on what she appeared to view as a motivating picture. Nonetheless, the gestures ultimately allowed Jo to begrudgingly express her own narrative that we might facetiously title, "This is how the teacher wants me to express Maggie's story."

On Friday of the same week, as described, I worked directly with Jo having her recreate the story in the correct sequence. She did so without mistake. I then used this regularly scheduled time to suggest to Jo, "Would you like to journal about what we learned about Maggie? Which picture should we write about?" All the children in the class maintained a journal. Most "wrote" through drawing around specific topics but many were also including letter and phrase approximations in the

drawing. Jo was already holding the birthday party photo and she slapped it several times. I wrote the words "Jo" and "Maggie" on a white board and asked, "Whose birthday should we write about? Jo's [pointing to the name] or Maggie's?" With my hand stabilizing Jo's arm, she pointed with conviction to the word "Maggie."

On a keyboard, I typed while stating the letters then the whole word, "Maggie had a birthday party." Jo got up from her chair, clapping and squealing, and completed a small pirouette then, with my hand on her back, sat back down. I quickly wrote the numbers 1, 2, and 3 on the board. I asked, "Do you remember how old Maggie was on her birthday? [While pointing] Was she one, two, or three?" Jo slapped at the photo. I read the caption, "Maggie's first birthday." What number goes with first? Jo gestured toward the 1 on the white board. I typed, "Maggie turned 1." I printed out two copies of the journal, one for Jo, which she crumpled and carried with her the rest of the school day. Although my influence over this highly structured journaling was obvious, Jo was actively engaged in co-constructing a visual narrative from pictorial and textual symbols. This was accomplished in interactive fashion weaving together literacy and communication.

After lunch on that same day, again after a routine we had established, I asked Jo to read her journal entry to a friend. She chose the name Ashton, a typically developing friend, from a group of three written choices. At a small table, I read Jo's two sentences to Ashton while Jo paced excitedly behind me. (As an aside, this would have been a more thoughtful activity had I allowed Jo to use a voice output AAC device.) Ashton offered, "My cat is, like, 20 years old" (demonstrating the principle that interpretation is in fact narrative construction). I then cut the two sentences apart into single or double words. Ashton mixed them up and I read the new silly sentences he constructed. Ashton laughed heartily and Jo, as always, seemed excited by this activity. Ashton left the table to return to his play, and I picked out the words to the first sentence, placing the word "Maggie" on the table. "What comes next?" I asked Jo, putting "birthday" and "had a" in front of her. Jo picked up the "had a" phrase and I placed it next to "Maggie." In this way we reconstructed both sentences.

Increasing complexity must focus not just on the story line itself but on the child's capacity to make use of and understand conceptual and procedural aspects of the symbol systems available. In this sense, as related to written language, skills associated with decoding must be a part of the child's experience if he or she is to grow in literate sophistication. Jo's teaching team wanted to support her knowledge about printed language. To do so, we introduced activities that demonstrated how sentences were constructed from words in a left-to-right visual orientation and that words were constructed from morphemes, graphemes, and letters, all of which could be linked to sound. Importantly, these efforts,

which did involve direct instruction, always flowed from meaningful experiences (whether, for instance, the story of a friend's dog or a narrative produced by Jo herself). Opening opportunities for narrative construction and using that which is produced as the basis for developing an understanding of convention is the child's natural path into literacy as she or he actively and imaginatively works to make sense of the surrounding symbolic world.

In another example of developing a child's sophistication with symbol-based narrative construction, I observed Sean, a 5.5-year-old student in the kindergarten described in Table 1 as Classroom 6. Sean had trisomy 21 and had very limited, understandable spoken language. Sean had earlier in the day been supported at several different learning stations involving some highly structured teacher-led activities (e.g., constructing long vowels using the silent "e" based on words from a story read) and some child-directed activities (e.g., journaling and illustrating the entry).

Toward the end of the school day, paraeducator Tiffany Stahl worked with Sean to co-construct a note in his notebook that was sent to and from home. Stahl laid out four cards, each labeled with one of the earlier center activities. She asked, "Which center do you want to write about?" Sean picked up the card and vocalized an approximation of the word "computer." Stahl wrote the phrase, "Mom, Today I worked on the computer." She read it to him as she wrote. She asked, "Who did you work on the computer with?" Sean nodded toward Stahl and vocalized what, given the context, could be understood as "Ms. Stahl." Stahl responded by sliding a written list toward him with the names of his classmates. She said, "Yes, you worked with me and who else?" He bent over the sheet almost touching his nose to it. Ms. Stahl looked toward me and said, "Definitely got to get him to the eye doctor." Sean pointed to a friend's name and said, "Tim." Stahl responded, "Nice reading, Sean, but I don't think Tim was at the computer with us." Sean laughed then uttered a string of sounds in a manner of feigned exasperation. Stahl said, "I know, I know—I'm making you work. Who sat with us at the computer?" Sean again bent over the sheet and pointed to Sarah's name, articulating what, again given the context, could be understood as "Sarah." Stahl wrote in the notebook, "I worked with Sarah and Ms. Stahl." She then handed Sean the open notebook and said, "Read your note." Sean bent over the two sentences and using a pointer finger ran his hand from left to write, top to bottom, vocalizing as he read. Although difficult to discern all his sounds, it appeared he read the two sentences correctly. Stahl said, "Now sign your name," which Sean did making recognizable letters.

Sean's teacher, Vivian Steinbrook, showed me Sean's most recent evaluation information using the Phonological Awareness Literacy Screening (Invernizzi, Sullivan,

& Meier, 2001; most often used in preschools, but Steinbrook felt the instrument would assist in guiding her instruction for Sean). Subcomponents addressed included name writing, alphabet knowledge, beginning sound awareness, print and word awareness, and rhyme awareness. The tool was accommodating to Sean's particular strengths because in many instances it allowed him to respond using a gesture and provided him with pictorial cues. His developmental approximation scattered from 4 years to 4 years, 6 months, suggesting a 6-month growth in the span of just 3 months. "Now we know he can do it," Steinbrook told me, referring to Sean's total literacy development, not just the screening scores. She continued, "Now we know the sky's really the limit [in relation to his literacy]. I think all his reading is actually improving his speech."

A body of research demonstrates that for typically developing children, regular opportunities to make use of multiple symbol systems (e.g., speech, drawing, alphabetic text, drama, etc.) to express personal narratives heighten both their capacity to comprehend the narratives of others and their own capacity to generate increasingly sophisticated narratives through various symbol formats (Fox, 2003; Gardner, 1991; Morrow, 2005; Shannon, 2000). In effect, expression begets increasingly sophisticated comprehension as comprehension begets increasingly sophisticated expression in an upward spiral of greater symbolic complexity.

Not surprisingly, my data in conjunction with other research suggest that the principle is also true for young children with significant developmental disabilities. Numerous studies have demonstrated that when children using AAC are systematically supported to compose original narratives around motivating topics (e.g., an important photograph, a favorite TV character, games, etc.), the children expand sight word vocabularies, abilities to construct words from letters, and capacities to symbolically generate richer and increasingly complex narratives (Blischak, 1995; Erickson, Clendon, Abraham, Roy, & Van de Carr, 2005; Erickson, Kopenhagen, Yoder, & Nance, 1997; Kliever & Biklen, 2001; Kopenhagen, Erickson, & Skotko, 2001).

Current 4: Deriving Joy and Other Affective Forces From Engagement With Visual-Tactile, Pictorial, and Orthographic Symbol Systems

Developing sophistication with symbol systems for children with significant developmental disabilities appears to be most effective when children experience the tremendous intellectual and emotional thrill that occurs while discovering the ideas and stories of others and in sharing and connecting their own stories (Kress, 1997; Lancaster, 2003). For children without disabilities, the emotions and the cognitive energy associated with getting lost in a story (or art or play) are recognized

and valued in terms of promoting general development and specific literacy skills (Gallas, 2003). This must be a part of all children's experience.

The data vignettes provided demonstrate how highly qualified teachers meaningfully and in motivating fashion weave the literacy skills described in Table 2 throughout the children's day-to-day inclusive classroom experiences. For instance, I described Paula Rush reading Jason's copy of *Just Me and My Dad* (Mayer, 2001) to the preschool class with Jason seated on her lap. She then asked Jason to tell his peers which part of the book he liked best. Jason was able to do this using the symbols provided by the book. In this simple sequence, Jason was recognized by his teachers and before his peers as a book owner, as having a favorite story, as having a favorite part of the story, and as being able to express his opinion in an understandable, symbol-based fashion. His full citizenship in the classroom's literate community was affirmed through a manner and process that brought him obvious enjoyment. Similarly, Jodi's participation in the dramatic space flight play with her peers, making use of symbols that furthered the play, affirmed her full citizenship.

Certainly, in a teacher's awesome and humbling charge to promote all children's learning, not every activity will evoke glee. That truism was demonstrated in Jo's initial resistance to the sequencing task. Despite her effort to seemingly express a narrative apart from that which was deemed more correct, her teachers felt the skills addressed in their planned activity were of use to Jo and all her peers; thus, Joyce Connor persevered in her effort to draw out Jo's effective participation. Although Jo may have wished to be doing some other activity, it is important to note that the sequencing task grew out of a peer's narrative that Jo had appeared to find highly engaging. The activity itself opened to Jo an opportunity to interact with a photograph she seemed to find very interesting, and it led to further important literacy events that seemed to capture and sustain Jo's interest.

In an era of educational high stakes testing, where formalized drill in a rigid version of literacy has now burst into the kindergarten and preschool, the realization of the importance of joy and other affective forces to all young children's learning may be dissolving (Shannon, 2000; Smith, 1999). This is an extraordinarily destructive trend. Children's literacy begins with their primordial drive to form a coherent understanding of the surrounding world. Children construct meaning through narratives crafted from a vast array of symbol systems when made available. These early efforts hinge on motivation and drive that erupts forth from children when they are a part of thoughtful, engaging contexts (Gardner, 1991). The inclusive early childhood classroom inherently involves information, ideas, and communication contained in a variety of visual-tactile, pictorial, and textual symbol systems. Children participating therein are self-actuated to transform these

systems into their own to make ever deeper and more sophisticated sense of the surrounding world.

Conclusion: Into the Flow

Young children's developing sophistication with symbol systems including text is most aptly captured in the form of flow with rapids, lulls, and the like (Kliewer, 2008). The findings of this study in conjunction with the research of certain others point to three critical conclusions about this flow. First, young children with significant developmental disabilities can be part of the flow and benefit from thoughtfully structured literacy opportunities and activities (Erickson & Koppenhaver, 2007; Miranda, 2003). This should come as no surprise to practitioners and researchers who have participated in the literate lives of young children in inclusive educational environments. Yet, mass numbers of young children continue to find themselves in segregated programs (U.S. Department of Education, 2006) with little or no critical literacy opportunities based on the pernicious myths that they cannot be supported in the lively swirl of the inclusive early childhood setting and that their measured cognitive development precludes their capacities with text (Kliewer et al., 2006). All the children with significant developmental disabilities involved in this study were formally assessed at one point or another as having significant intellectual impairments. Despite this, teachers with local understanding of the children opened opportunities for the communicative engagement of literacy which appeared to then foster the children's developing capacities in a Vygotskian movement toward increasing sophistication.

Second, literacy did not simply spring forth from my participants, nor was literacy optimized through direct instruction of decontextualized subskills originating with adults. Rather, teachers interactively immersed all children in the narrative structures of others. They promoted the expression of children's own narratives in multisymbolic form. They pushed, prodded, and pulled the children toward increased sophistication in both narrative construction and procedural conventions of symbol systems. In addition, they accomplished all this through motivating, highly engaging modalities. Teachers provided children thoughtful opportunities and guidance to make the symbolic mean, and children actively took on those opportunities as their own.

Third, oral language need not serve as the basis for joining the literacy flow. The children involved in this study all shared severe struggles with speech, many to the extent that they were described as nonvocal or nonverbal. However, all demonstrated the development of symbol or word recognition skills, moving with automaticity from form to meaning. Teachers made use of their expanding symbol-based lexicons to support ever more complex understanding of symbol system conventions.

If there exists only a singular point of agreement among influential thinkers in the psychological arena of child development, it is that young children are motivated and driven to collaboratively make meaning of the surrounding symbol-based world: "Such otherwise disparate scholars as Jean Piaget, Heinz Werner, Alexander Luria, and Jerome Bruner would all concur," noted Gardner (1991, p. 58). Unfortunately, a common caveat among child developmentalists has been the qualifier that children's symbol-based constructivism is ascribed only to those who are "normal," "healthy," or some other euphemism for "nondisabled." Gardner, for instance, when describing the preschool years as the age of symbols, explained that he was talking only about "normal children the world over" (p. 56).

Eliminating from young children with significant developmental disabilities a basic sociointellectual drive is fundamentally dehumanizing and is based on myth, not evidence. When the majority route to language, dominated in the early years by speech, is somehow impeded for particular children, we need not believe that the children's social drive to construct meaning stagnates and languishes. Rather, children appear capable of actively altering the symbol-based manner through which narratives may be fashioned. For instance, deaf infants in rich environments of sign language begin to babble in gesture just as hearing infants babble vocally (Petitto & Marentette's, 1991).

Babbling is the unfortunate term applied to infants' diligent and systematic inclination and effort to begin building social connections and constructs of meaning through the symbols of language. In their babbling, babies are recreating the rudimentary structures, rhythms, and patterns of the language surrounding them. Thus, hearing infants babble in particular vocal patterns and rhythms, whereas deaf infants form the rhythms and patterns of sign language as they attempt to build social connections and make sense of the world. Interestingly (and related to the physical complexity involved in sign versus speech), on average, deaf babies in sign-language-rich environments begin to babble through gesture, to form actual words, and to construct whole sentences at earlier ages than do their vocal counterparts (Marschark, 1993). Deaf children only begin to fall behind on average when they leave sign-rich environments and confront a world that is ignorant of, or even intolerant toward, their first language.

These findings fit neatly alongside the elegant research of Sue Buckley, described in the introduction to this article, who has for decades fostered the reading development of toddler and preschool children with trisomy 21. She posited that her young participants, affected with speech and motor struggles (and all of whom were defined as cognitively delayed), interacted with text as a first language.

For the young children described in this study, perhaps immersion into the American Sign Language might

have been a route out of their communication struggles, and indeed most teachers in the seven classrooms involved here did make use of some signed English. However, given the absence of rich American Sign Language environments in conjunction with motor-planning concerns exhibited by nearly every child involved, sign language as a generative symbol system was only minimally functional. However, nearly all the participants grew up in print-rich homes. Every one of them traveled through a symbol-rich community to arrive at an extraordinarily symbol-rich inclusive preschool or kindergarten. Each was approached by excellent teachers and therapists who through local understanding saw in the children with significant developmental disabilities the potential and the capacity to make sense of the narratives of others and construct their own narratives through multiple sign systems. Through the four currents, many of the children began to make meaning of the written form of words and began to build written language lexicons that served as the basis for increasingly sophisticated narrative construction and more complex understanding of the conventions of print. Not every child with significant developmental disabilities will develop into a Joyce Carol Oates or Langston Hughes, but of course the same is true of typically developing peers. We have reached a point where we must recognize the accumulating evidence, suggesting at the possibilities of literate citizenship for young children with significant developmental disabilities, and accept that, for any individual child, we can never know the limits of those possibilities. All we can do is thoughtfully teach.

References

- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Adams, M. J. (2001). Alphabetic anxiety and explicit, systematic phonics instruction: A cognitive science perspective. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 66–80). New York: Guilford Press.
- Adams, M. J., Foorman, B. R., Lundberg, I., & Beeler, T. (1997). *Phonemic awareness in young children: A classroom curriculum*. Baltimore: Paul H. Brookes.
- Ashby, J., & Rayner, K. (2006). Literacy development: Insights from research on skilled reading. In D. K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 52–63). New York: The Guilford Press.
- Barnes, E., & Isaacson, D. (1982). Evaluating peer interactions in an integrated setting. In P. Knoblock (Ed.), *Teaching and mainstreaming autistic children*. Denver, CO: Love.
- Basil, C., & Reyes, S. (2003). Acquisition of literacy skills by children with severe disabilities. *Child Language Teaching and Therapy*, 19, 27–48.
- Beard, R. (2003). Uncovering the key skills of reading. In N. Hall, J. Larson, & J. Marsh (Eds.), *Handbook of early childhood literacy* (pp. 199–208). Thousand Oaks, CA: Sage.
- Blischak, D. M. (1995). Thomas the writer: Case study of a child with severe physical, speech, and visual impairments. *Language, Speech, and Hearing Services in Schools*, 26, 11–20.
- Bogdan, R., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods*. Boston: Allyn & Bacon.
- Browder, D., Wakeman, S., Spooner, F., Ahlgrim-DeLzell, L., & Algozzine, R. F. (2006). A comprehensive review of reading for students with significant cognitive disabilities. *Exceptional Children*, 72, 392–410.
- Buckley, S. J. (1984). The influence of family variables on children's progress on Portage. In A. Dessent (Ed.), *What is important about Portage?* (pp. 21–28). Windsor: NFER-Nelson.
- Buckley, S. J. (1985). Attaining basic educational skills: Reading, writing, and number. In D. Lane & B. Stratford (Eds.), *Current approaches to Down's syndrome* (pp. 315–344). New York: Praeger.
- Buckley, S. J. (1995). Teaching children with Down syndrome to read and write. In L. Nadel & D. Rosenthal (Eds.), *Down syndrome: Living and learning in the community* (pp. 158–169). New York: Wiley-Liss.
- Buckley, S. J. (2006). *Literacy and young children with Down syndrome*. Paper presented at the 9th World Down Syndrome Congress, Vancouver, BC, Canada.
- Chall, J. S. (1967). *Learning to read: The great debate*. New York: McGraw-Hill.
- Clay, M. (1966). *Emergent reading behaviour*. Unpublished doctoral dissertation, University of Auckland, Auckland, New Zealand.
- Coleman, P. P. (1991). *Literacy lost: A qualitative analysis of the early literacy experiences of preschool children with severe speech and physical impairments*. Unpublished doctoral thesis, University of North Carolina, Chapel Hill.
- Cossu, G., & Marshall, J. C. (1990). Are cognitive skills a prerequisite to learning to read and write? *Cognitive Neuropsychology*, 7, 21–40.
- Cossu, G., Rossini, F., & Marshall, J. C. (1993). When reading is acquired but phonemic awareness is not: A study of literacy in Down's syndrome. *Cognition*, 46, 129–138.
- Cossu, G., Shankweiler, D., Liberman, A. M., Fowler, C., & Fisher, W. F. (1988). Awareness of phonological segments and reading ability in Italian children. *Applied Psycholinguistics*, 9, 1–16.
- Dickinson, D. K., McCabe, A., & Essex, M. J. (2006). A window of opportunity we must open to all: The case for preschool with high-quality support for language and literacy. In D. K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 11–28). New York: The Guilford Press.
- Egan, K. (2006). *Teaching literacy: Engaging the imagination of new readers and writers*. Thousand Oaks, CA: Sage.
- Ehri, L. C. (1995). Phases of development in learning to read words by sight. *Journal of Research in Reading*, 18, 116–125.
- Erickson, K. A., Clendon, S., Abraham, L., Roy, V., & Van de Carr, H. (2005). Toward positive literacy outcomes for students with significant developmental disabilities. *Assistive Technology Outcomes Benefits*, 2, 45–54.
- Erickson, K. A., & Hatton, D. (2007). Expanding understanding of emergent literacy: Empirical support for a new framework. *Journal of Visual Impairment and Blindness*, 10, 261–277.
- Erickson, K. A., & Koppenhaver, D. A. (2007). *Children with disabilities: Reading and writing the four block way*. Greensboro, NC: Carson-Dellosa.
- Erickson, K. A., Koppenhaver, D. A., Yoder, D. E., & Nance, J. (1997). Integrated communication and literacy instruction for a child with multiple disabilities. *Focus on Autism and Other Developmental Disabilities*, 12, 142–150.
- Foley, B. E., & Staples, A. (2007). Supporting literacy development with assistive technology. In S. R. Copeland & E. B. Keefe (Eds.), *Effective literacy instruction for students*

- with moderate or severe disabilities (pp. 127–148). Baltimore: Paul H. Brookes.
- Fox, C. (2003). Playing the storyteller: Some principles for learning literacy in the early years of schooling. In N. Hall, J. Larson, & J. Marsh (Eds.), *Handbook of early childhood literacy* (pp. 189–198). Thousand Oaks, CA: Sage.
- Gallas, K. (2003). *Imagination & literacy: A teacher's search for the heart of learning*. New York: Teachers College Press.
- Gardner, H. (1991). *The unschooled mind: How children think and how schools should teach*. New York: Basic Books.
- Hehner, B. (1980). *Blissymbols for use*. Toronto, Ontario: Blissymbolics Communication Institute.
- Invernizzi, M., Sullivan, A., & Meier, J. (2001). *PALS Pre-K. Phonological Awareness Literacy Screening*. Charlottesville: University Printing.
- International Reading Association (IRA) & National Association for the Education of Young Children (NAEYC). (1998). Learning to read and write: Developmentally appropriate practices for young children. A joint position statement of the International Reading Association and the National Association for the Education of Young Children. *Young Children*, 53, 30–46.
- Jacobson, J. W., Mulick, J. A., & Schwartz, A. A. (1995). A history of facilitated communication: Science, pseudoscience, and antisense. *American Psychologist*, 50, 750–765.
- Joseph, L. M., & Seery, M. E. (2004). Where is the phonics? A review of literature on the use of phonetic analysis with students with mental retardation. *Remedial and Special Education*, 25, 88–94.
- Kangas, K. A., & Lloyd, L. L. (1988). Early cognitive skills as prerequisites to AAC: What are we waiting for? *Augmentative and Alternative Communication*, 4, 211–221.
- Katims, D. S. (2000). Literacy instruction for people with mental retardation: Historical highlights and contemporary analysis. *Education and Training in Mental Retardation and Developmental Disabilities*, 35, 3–15.
- Kliewer, C. (2008). *Seeing all kids as readers: A new vision for literacy in the inclusive early childhood classroom*. Baltimore: Paul H. Brookes.
- Kliewer, C., & Biklen, D. (2001). "School's not really a place for reading": A research synthesis of the literate lives of students with significant disabilities. *Journal of the Association for Persons with Severe Handicaps*, 26, 1–12.
- Kliewer, C., & Biklen, D. (2007). Enacting literacy: Local understanding, significant disability, & a new frame for educational opportunity. *Teachers College Record*, 109, 2579–2600.
- Kliewer, C., Biklen, D., & Kasa-Hendrickson, C. (2006). Who may be literate? Disability and resistance to the cultural denial of competence. *American Educational Research Journal*, 43, 163–192.
- Kliewer, C., Fitzgerald, L. M., Meyer-Mork, J., Hartman, P., English-Sand, P., & Raschke, D. (2004). Citizenship for all in the literate community: An ethnography of young children with significant disabilities in inclusive early childhood settings. *Harvard Educational Review*, 74, 373–403.
- Koppenhaver, D. A., & Erickson, K. A. (2003). Natural emergent literacy supports for preschoolers with autism and severe communication impairments. *Topics in Language Disorders*, 23, 283–292.
- Koppenhaver, D. A., Erickson, K. A., & Skotko, B. G. (2001). Supporting communication of girls with Rett syndrome and their mothers in storybook reading. *International Journal of Disability, Development and Education*, 48, 395–410.
- Koppenhaver, D. A., Hendrix, M. P., & Williams, A. R. (2007). Toward evidence-based literacy interventions for children with severe and multiple disabilities. *Seminars in Speech and Language*, 28, 79–89.
- Koppenhaver, D. A., Pierce, P. L., & Yoder, D. E. (1995). AAC, FC, and the ABCs: Issues and relationships. *American Journal of Speech Language Pathology*, 4, 5–14.
- Kress, G. (1997). *Before writing: Rethinking the paths to literacy*. New York: Routledge.
- Lancaster, L. (2003). Moving into literacy: How it all begins. In N. Hall, J. Larson, & J. Marsh (Eds.), *Handbook of early childhood literacy* (pp. 145–153). Thousand Oaks, CA: Sage.
- Light, J., & Smith, A. K. (1993). The home literacy experiences of preschoolers who use augmentative communication systems and of their nondisabled peers. *Augmentative and Alternative Communication*, 9, 10–25.
- Marschark, M. (1993). *Psychological development of deaf children*. New York: Oxford University Press.
- Marvin, C. (1994). Home literacy experiences of preschool children with single and multiple disabilities. *Topics in Early Childhood Special Education*, 14, 436–454.
- Mayer, M. (2001). *Just me and my dad*. New York: Random House.
- Mayer-Johnson, R. (1981). *The picture communication symbols book*. Solana Beach, CA: Mayer-Johnson Co.
- Miranda, P. (2003). "He's not really a reader...": Perspectives on supporting literacy development in individuals with autism. *Topics in Language Disorders*, 23, 271–282.
- Morrow, L. M. (2005). *Literacy development in the early years: Helping children read and write* (5th ed.). Boston: Allyn & Bacon.
- Morrow, L. M., & Schickedanz, J. A. (2006). The relationships between sociodramatic play and literacy development. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 269–280). New York: Guilford Press.
- National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to read*. Washington, DC: National Institute of Child Health and Human Development.
- Newborg, J., Stock, J. R., & Wnek, J. (1984). *Battelle Developmental Inventory*. Itasca, IL: Riverside.
- Petitto, L. A., & Marentette, P. (1991). Babbling in the manual mode: Evidence of the ontogeny of language. *Science*, 251, 1483–1496.
- Razfar, A., & Gutiérrez, K. (2003). Reconceptualizing early childhood literacy: The sociocultural influence. In N. Hall, J. Larson, & J. Marsh (Eds.), *Handbook of early childhood literacy* (pp. 34–47). Thousand Oaks, CA: Sage.
- Sénéchal, M., LeFevre, J., Smith-Chant, B. L., & Colton, K. V. (2001). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology*, 39, 439–460.
- Shannon, P. (2000). "What's my name?": A politics of literacy in the latter half of the 20th Century in America. *Reading Research Quarterly*, 35, 90–107.
- Skotko, B. G., Koppenhaver, D. A., & Erickson, K. A. (2004). Parent reading behaviors and communication outcomes in girls with Rett syndrome. *Exceptional Children*, 70, 145–166.
- Smith, F. (1999). Why systematic phonics and phonemic awareness instruction constitute educational hazard. *Language Arts*, 77, 150–155.
- Smith, M. W., Dickinson, D. K., Anasatopoulos, A., & Sangeorge, A. (2002). *Early Language & Literacy Observation (ELLCO) toolkit for assessing early literacy in classrooms*. Baltimore: Paul H. Brookes.
- Stainthorpe, R. (2003). Phonology and learning to read. In N. Hall, J. Larson, & J. Marsh (Eds.), *Handbook of early childhood literacy* (pp. 209–221). Thousand Oaks, CA: Sage.
- Stanovich, K. (1991). Word recognition: Changing perspectives. In R. Barr, M. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (pp. 418–442). New York: Longman.

- Sulzby, E., Branz, C. M., & Buhle, R. (1993). Repeated readings of literature and low socioeconomic status black kindergartners and first graders. *Reading & Writing Quarterly*, 9, 183-196.
- Teale, W., & Sulzby, E. (1986). *Emergent literacy: Writing and reading*. Norwood, NJ: Ablex.
- Thousand, J. S., & Villa, R. A. (2000). *Restructuring for caring, effective instruction: Piecing the puzzle together* (2nd ed.). Baltimore: Paul H. Brookes.
- U. S. Department of Education. (2006). *Annual report to Congress on the Individuals with Disabilities Education Act*. Washington, DC: Department of Education.
- Whitehurst, G. J., & Lonigan, C. J. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11-29). New York: Guilford Press.

Received: January 15, 2009

Final Acceptance: April 20, 2009

Editor in Charge: Roberta Schnorr

Copyright of *Research & Practice for Persons with Severe Disabilities* is the property of TASH and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.