

# PERSPECTIVES ON LITERACY RESEARCH AND PRACTICE

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- Kelly, L. P. (1995). Processing of bottom-up and top-down information by skilled and average deaf readers and implications for whole language instruction. *Exceptional Children*, 61(4), 318-334.
- King, C. M., & Quigley, S. P. (1985). *Reading and deafness*. San Diego, CA: College-Hill.
- Lowenbraun, S., & Thompson, M. D. (1986). Hearing impairments. In N. G. Haring & L. McCormick (Eds.), *Exceptional children and youth: An introduction to special education* (4th ed., pp. 357-395). Columbus, OH: Charles E. Merrill.
- McGregon, S. K., & Thomas, L. B. (1988). A computer-mediated text system to develop communication skills for hearing-impaired students. *American Annals of the Deaf*, 133, 280-284.
- Payne, J. A. (1982). *A study of the comprehension of verb-particle combinations among deaf and hearing subjects*. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.
- Quigley, S. P., & Paul, P. V. (1990). *Language and deafness*. San Diego, CA: Singular Publishing Group.
- Quigley, S. P., & Paul, P. V. (1986). A perspective on academic achievement. In D. Luterman (Ed.), *Deafness in perspective* (pp. 55-86). San Diego, CA: Little, Brown.
- Reinking, D., & Schreiner, R. (1985). The effects of computer-mediated text on measures of reading comprehension and reading behavior. *Reading Research Quarterly*, 20, 536-552.
- Trybus, R., & Karchmer, M. (1977). School achievement scores of hearing-impaired children: National data on achievement status and growth patterns. *American Annals of the Deaf*, 123, 62-69.
- Vision Software, (1992). CameraMan [Computer software]. Santa Clara, CA: Vision Software.
- Wise, B. W., & Olson, R. K. (1994). Computer speech and the remediation of reading and spelling problems. *Journal of Special Education Technology*, 12(3), 207-220.
- Wolk, S., & Allen, T. E. (1984). A 5-year follow-up of reading-comprehension achievement of hearing-impaired students in special education programs. *Journal of Special Education*, 18, 161-176.

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## Incorporating the Computer Into Kindergarten: A Case Study

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Educators and researchers in the 1980s and 1990s have suggested that computer-word processing programs benefit primary-level, emerging writers by providing visual, auditory, and motor support and by removing the frequently monotonous aspects of forming

letters with traditional literacy tools (e.g., paper and pencil) (Chang & Osguthorpe, 1990). Word processors support young children's efforts to revise, reread, and rewrite narratives (Labbo, 1994; Phenix & Hannan, 1984) and also foster desirable social interactions because writing, displayed on the computer screen, is accessible to others (Hoot & Kimler, 1987). These preliminary glimpses of technology in classrooms have focused on the support computers provide in helping children gain print-related skills. However, while recent investigations offer some insights into how features of the computer support young children's development of literacy, the part the teacher plays within the computer-enriched classroom setting is less well understood. The purpose of this paper is to focus on how one kindergarten teacher incorporated the computer into the culture of her classroom. Drawn from a larger ethnographic classroom investigation designed to explore the complexities of young children's socially constructed, computer-related opportunities for their emerging literacy development, this case study may, it is hoped, provide new insights into a teacher's computer-related instructional activities as incorporated into her emergent literacy perspective.

The theoretical framework guiding the study stems from the work of Vygotsky and from principles of emergent literacy. Viewed from a Vygotskian perspective, children's cognitive operations emanate from ongoing social interaction with the adults in their immediate environment (Vygotsky, 1962, 1978). This sociocultural perspective takes into account how, over time, children come to internalize the language and thinking processes of supportive adults who interact with them. A central tenet of this perspective is that what children can do with an adult's help today, they will soon be able to do independently. Furthermore, Wertsch (1985) suggests that this sociocultural framework helps us understand how young children's emerging literacy learning is intricately connected to their interactions with the literate adults in their world.

An additional factor contributing to the theoretical underpinnings of the study was emergent literacy, a philosophy of literacy development that recognizes as legitimate the not-yet-conventional reading and writing behaviors young children exhibit as they develop into conventional literacy (Labbo & Teale, in press). A teacher who views

literacy instruction from an emergent literacy philosophy will establish a classroom environment in which children have opportunities to experience literacy in functional and meaningful contexts. The culture of learning, as established by the teacher and experienced by the students, establishes behavioral norms and creates expectations for the purposes, functions, and forms of literacy learning that take place (Green, Kantor, & Rogers, 1991). Within this sociocultural, emergent literacy framework, we hoped to find out how a teacher goes about establishing a computer-enriched environment that provides opportunities for young children's computer-related literacy development.

## METHOD

### *Setting and Participants*

This ethnographic case study was conducted in a public school in an urban community of low-to-middle socioeconomic level in Athens, Georgia. Approximately 60% of the children who attend the school qualify for free or reduced lunch. Fifty percent of the children are African American, 30% are Caucasian, 15% are Hispanic, and 5% are designated by the school district as Other. The participants in the study included a kindergarten teacher, her teaching assistant, and 18 students. Mrs. H., the kindergarten teacher, has taught kindergarten for 18 years and is considered to be an exemplary teacher by her colleagues and principal. Her assistant has worked in elementary schools for 16 years. The children in the study reflected the ethnic mix of the school. Kindergartners exhibited a wide range of literacy ability levels, as determined by teacher ranking.

### *Equipment*

**Software.** Kidpix 2 (Broderbund, 1994) was selected as the software because it allows children to move between creating symbols with artistic tools (e.g., paintbrush, drawing pencil, icons, patterned designs) and word-processing tools (e.g., typing with the keyboard, stamping with letter stamps, writing with a pencil tool, cutting, pasting, erasing). We viewed this feature as an important consideration because researchers have observed that young children often shift between drawing and writing (Dyson, 1982; Hubbard, 1989) when using crayons and pencils.

**Hardware.** A power Macintosh 7100/66 with a 15-inch color monitor was present in the classroom for the duration of the study. We selected this computer because it has the capacity to run the most current software available, and is likely to run the next generation of software as well. In addition, the school district had made a decision to begin a technology initiative that included the infusion of Macintosh computers into classrooms. The classroom teacher we studied valued having the opportunity to become familiar with a Macintosh because she felt she would be better equipped to participate in the district initiative. The computer was accompanied by a Stylewriter printer that allowed the teacher and children to create printouts of computer-generated work. An Apple IIe computer was also present in the classroom. The teacher felt that many of the game software programs that were available for the Apple IIe, and had been used in previous years for a math center, were outdated. As a result, this computer often sat unused in a corner of the classroom.

### *Design and Procedure*

Over the course of an academic year, observations of computer-related activities were conducted weekly so that researchers could have the opportunity to become familiar with the teacher's ongoing activities and to get an emic, insider's perspective on her developing insights into how the computer fit into the context of the classroom. We were not participants in the daily life of the classroom, but rather observers who collected and analyzed the following data: field notes; videotapes and audiotapes of whole-group, small-group, and peer-pair activities; interviews with children and the teacher about the computer-related activities; and photocopies of the children's computer-related literacy products. Analysis involved the use of the constant-comparative method (Glaser & Strauss, 1967). This type of analysis involves initial formation of categories that are continually compared with new data until each emerging category is refined, and ultimately, mutually exclusive.

## RESULTS

Analysis of the data suggested that this teacher moved through chronological stages to incorporate the computer within the overall classroom context. The categories of activities she engaged in are reported in the order in which they occurred in her classroom practice. In this section, we first provide a definition of each of the six teacher activities. Next, we give a more detailed description of the teacher's thinking and practices as they were portrayed in the classroom and as they related to each category of activity.

### *Six Teacher Activities Defined*

The following were the six teacher activities:

**Seeking preparation**—Gaining knowledge of and expertise in using the features of the computer and the software.

**Giving introductions**—Introducing the children to the features and functions of the computer and the software.

**Offering invitations**—Creating a Big Book designed to inform children about the various nonconventional forms of writing they could use when using traditional writing tools (e.g., pencils, crayons, magic markers) or when using the computer as an informal literacy tool.

**Allowing explorations**—Giving children sanctioned time to learn about the computer through independent and peer-supported trial and error.

**Providing occasions**—Connecting teacher-directed computer assignments to unit themes and allowing children to work with a variety of supportive people, including parent volunteers, peers, cross-age "computer buddies," the teaching assistant, or the teacher.

**Expecting transformations**—Sanctioning children's ownership of assignments in ways that allowed them to set their own purposes and to generate unique computer-related work.

### *Six Teacher Activities Portrayed*

In this section we provide an emic perspective by sharing a brief account of the teacher's thinking that guided each activity. We also provide a snapshot of the resulting classroom practices that related to children's opportunities for literacy development.

*Seeking preparation.* Before the teacher placed the computer in the classroom, she actively sought out several avenues to become knowledgeable and comfortable with using the computer and the software. She enrolled in a summer computer course that included using multimedia computers. In an interview, Ms. H. said of the course, "My eyes were really opened to the potential of the computer to expand educational endeavors in new directions." Additionally, she took the computer home for 2 weeks and asked her 11-year-old daughter to play with Kidpix2. Together they explored the program, referring to the manual to answer specific questions. Before and after school, Ms. H. then taught her classroom teaching assistant how to use the program so they could both work with the children as needed.

After these initial preparations, Ms. H. began to use the computer to organize and to manage classroom and personal tasks. By writing notes to parents, creating a calendar of activities, and recording anecdotal observations of children, she began to value the computer as an informal literacy tool. Through these experiences and insights, she felt better prepared to guide the children. Her next immediate concern was how to best introduce the children to the computer.

*Giving introductions.* During an interview, Ms. H. said she had initially struggled with the pedagogical concerns of fitting the computer into the classroom culture and the structure of the day. She grappled with many issues, such as how to schedule all of the children to use one computer, how to establish effective procedures for working at the computer, and how to introduce the computer in ways that might foster children's opportunities for literacy development. Labbo met with the teacher and teaching assistant twice to discuss these concerns over a cup of coffee after school. Through these conversations, Ms. H. reflected on her philosophy of how children best become literate and on the roles the computer should play in her view of emergent literacy.

Drawing from her beliefs about emergent literacy, Ms. H. decided to include the computer as a central activity within the overall literacy environment of the classroom. Thus, as she stated in an interview, the introduction of the children to the computer would be accomplished more naturally through demonstrations of the computer during whole-group meetings.

One whole-group activity that occurred routinely and that involved the entire class at the beginning of the day was the writing and reading of the Morning Message and news. During the Morning Message, children watched the teacher write two or three sentences about events of the day on the board. Mrs. H. changed the format by typing the message on the computer. One purpose of this activity was to allow children to see writing capture speech. As a result, the children came to understand sound/symbol relationships during these informal activities. When Mrs. H. did this activity on the computer, children could watch her model how to use the mouse, the keyboard, and features of the software program. They engaged in discussions about how the teacher selected background colors and how the shift key worked. Additionally, when children received a printout of the morning message, they had opportunities to demonstrate their emerging insights about literacy by circling features of print they recognized.

*Offering invitations.* Because research suggests that simply placing a computer in the classroom will not automatically result in children who become competent computer users, or in teachers who embrace the computer as a powerful resource for teaching and learning (Blackstock & Miller, 1992; Miller & Olson, 1994), it is important to note Ms. H.'s belief that the kindergartners would need more than an introduction and modeling of how to use the computer through whole-group and small-group demonstrations. She believed she needed to provide specific invitations for children to use the computer. In her words,

I can't just set it [the computer] up, show it once or twice in group time, and expect kids to use it and learn from using it . . . learn about writing. I've got to help them

think of it as a tool, a tool they can use. Not just a big pencil, but a whole bunch of pencils and paints and erasers and pictures and sounds and . . . it's a bit overwhelming.

Again, drawing from the principles of emergent literacy, Ms. H. asked one of us to help her design a Big Book that would extend specific invitations to the children to write in many nonconventional but legitimate ways. The Big Book, with poster-sized pages, large print, and illustrations, could be seen by the entire class simultaneously. The book included samples of the classroom work children had done, with additional examples designed on the computer to show how the tasks look when created and printed out on the computer. These writing samples represented various types of writing (e.g., drawing, scribbling, constructing letter-like forms, writing words using conventional spelling). This specific invitation gave children the teacher's approval to express their ideas on and off the computer in ways that reflected their current literacy development. Soon after this introduction, children's work began to reflect the varied ways to write as suggested by the book. In fact, it was not unusual for children to reread the book or to seek it out as a reference point when they were writing.

*Allowing explorations.* Ms. H. stated that children would need time to get comfortable with the computer. During the first few weeks of school, the teacher gave individuals and pairs of students time to get to know the computer through trial and error. She hoped children would gain competence in using the computer, just as she and her teaching assistant had. And she believed the children would continue to benefit from being allowed to have sanctioned classroom time for ongoing explorations.

Several of the children tried out many of the operations that they had seen demonstrated and that they heard the teacher discuss during the Morning Message time. For example, children who had discussed with the teacher how she selected background color during the message also devoted a great deal of time working with color, even after they noticed that the printouts were always in black and white.

A few children discovered how holding down a key resulted in repeating rows of plus signs, letters, and colons. These streams of marks seemed to delight the children, as they laughed while producing row after row of single letters and symbols. Their explorations did not stop here, and they continued to discover other operations produced by various keys such as Shift, Option, and Delete. Likewise, for many children the experience of the moment and the process of creating images and letters on the screen was just as important as creating a final product, if not more so. Many children seemed to enjoy the act of creating something, anything, on the screen just to have the pleasure of watching it be erased through an "explode" function in the program. When an icon of a small stick of dynamic was selected, the result was an explosion of waves, accompanied by acoustic exploding sounds which seemed to delight the children.

*Providing occasions.* Children worked with parent volunteers, students who were "computer buddies," the teaching assistant, and the teacher, or worked independently to carry out teacher-directed tasks. Many of the teacher-directed tasks complemented the thematic focus for units. For example, the teacher asked children to draw and write on the computer about their favorite parts of books read aloud during National Book Week.

As part of the unit on favorite books, Ms. H.'s kindergartners went on a field trip to a local bookstore. Before going they predicted what they might see at the store and suggested questions to ask the bookstore manager. Ms. H. asked children to wonder about the role of technology in operating the bookstore. During the field trip, small groups of children went on a guided tour and asked questions about the roles involved in organizing and running the store. Before leaving, each purchased a book. Afterward, children decided what they would need to set up their own bookstore in the classroom sociodramatic play center. Much activity went into getting the bookstore ready (e.g., preparing money, setting up the book display, creating the bookstore sign, deciding possible ways to include the an old Apple IIe computer in the play center).

Playing in the bookstore provided an opportunity for children to playfully reexperience what they had learned during their field trip, and to incorporate the computer as a literacy tool within the context of play.

*Expecting transformations.* Ms. H. expected that children would take over, or transform, the assignments they were given. These transformations showed up in several ways in the classroom. For example, some children began with an assignment to write how they felt about a story they had heard, and transformed it into writing a book that they put up for sale in the sociodramatic play center bookstore. Children transformed an assignment about describing the daily life of their pet into a scientific observations about the daily habits of the classroom pets, two guinea pigs. Ms. H. held high expectations that as these young children became more confident and comfortable with the computer, they would accomplish goals they set for themselves. By allowing them the freedom to transform assignments, or generate their own, she contributed to their independence as learners and users of literacy.

### CONCLUSION

This study provided a look into one classroom teacher's efforts to incorporate the computer into a classroom guided by the principles of emergent literacy. The findings of the study support previous research suggesting that teachers like Ms. H. make decisions about how children will use the computer based on their philosophies of how children become literate (Miller & Olson, 1994). Although this case study focused more on the teacher, it provides glimpses of children's explorations of literacy using a computer, and it offers anecdotal support for the Vygotskian (1978) notion that young children internalize the thinking processes and language of adults they interact with. In this case, children gained procedural knowledge of how to operate shift keys and select painting functions from the software program during group time, which they were eventually able to utilize independently. As more computers are placed within more kindergarten classrooms, continuing insights are needed into the roles teachers play in incorporating the computer as an informal literacy tool within the classroom culture. We believe that insights from such studies will inform educators about how to provide young children with ongoing occasions for discovering how to use the computer as an informal literacy tool, and thus gaining additional avenues into literacy development.

### REFERENCES

- Blackstock, J., & Miller, L. (1992). The impact of new information technology on young children's symbol-weaving efforts. *Computers and Education*, 18(1-3), 209-221.
- Chang, L., & Osguthorpe, R. (1990). The effects of computerized picture-word processing on kindergartner's language development. *Journal of Research in Childhood Education*, 5(1), 73-84.
- Dyson, A. (1982). *Multiple worlds of child writers: Friends learning to write*. New York: Teachers College Press.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Green, J., Kantor, R., & Rogers, T. (1991). Exploring the complexity of language and learning in classroom contexts. In L. Idol and B. F. Jones (Eds.), *Educational values and cognitive instruction: Implications for reform* (pp. 333-364). Hillsdale, NJ: Erlbaum.
- Hoot, J., & Kimler, M. (1987). *Early childhood classrooms and computers: Programs with promise*. Urbana, IL: University of Illinois. (ERIC Document Reproduction Service No. ED 201 515)
- Hubbard, R. (1989). *Authors of pictures, draftsmen of words*. Portsmouth, NH.: Heinemann.

- Labbo, L. (1994). *The microcomputer and emergent literacy: A case study of computer-related literacy experiences at home*. Paper presented at the annual meeting of the International Reading Association Conference, Toronto, Ontario, Canada.
- Labbo, L., & Teale, W. (in press). Emergent literacy as a model of reading instruction. In S. Stahl & D. Hayes, (Eds.), *Models of reading instruction*. Hillsdale, NJ: Erlbaum.
- Miller, L., & Olson, J. (1994). Putting the computer in its place: A study of teaching with technology. *Journal of Curriculum Studies*, 26(2), 121-141.
- Phenix, J., & Hannan, E. (1984). Word processing in the grade one classroom. *Language Arts*, 61(8), 804-812.
- Vygotsky, L. (1962). *Thought and language* (E. Hanfmann & G. Vakar, Trans.). Cambridge, MA: MIT Press.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wertsch, J. (1985). *Vygotsky and the social formation of the mind*. Cambridge, MA: Harvard University Press.

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