Emergent Literacy Supports for Students Who Are Deaf-Blind or Have Visual and Multiple Impairments: A Multiple-case Study

Amy R. McKenzie

Abstract: Seven classrooms of students with deaf-blindness or visual and multiple impairments were observed to document the emergent literacy supports that were present, including environmental characteristics, strategies, or activities. The findings revealed that the majority of classrooms used emergent literacy supports that were previously documented for students without disabilities. Implications for practice and suggestions for future research are discussed.

In the United States, the federal government has demonstrated its strong belief in the value of literacy in the No Child Left Behind Act of 2001 (P.L. 107-110). A concentrated focus on literacy can be found in the Reading First subpart of this legislation, which the U.S. Department of Education (2002) considers to be the “academic cornerstone” of the law. Reading First proposes that through the use of scientifically based reading research, teachers will be able to implement instruction to ensure that all children, regardless of their disabilities, will be able to read by the end of the third grade.

Before they are able to read and write, children go through the emergent literacy phase of development, which begins at birth and ends when children begin to engage in conventional reading and writing (Sulzby & Teale, 1991). It is assumed that the development of literacy in children begins long before formal instruction in literacy skills (Teale & Sulzby, 1994). For students with disabilities, three areas are vital to the development of emergent literacy: environments that support and encourage emergent literacy, teaching strategies and activities that support the growth of emergent literacy, and the role of teachers in promoting the development of emergent literacy (Justice & Pullen, 2003).

Environments that encourage the growth of emergent literacy are print-rich environments (Miller, 2000; Roskos & Neuman, 1994; Soderman, Gregory, & O’Neill, 1999). In these environments, an “abundance of print [is] placed in a meaningful manner so that each child is able to associate print with meaning” (Miller, 2000, p. 12). The physical layout of the environment is also a primary concern of researchers and educators. Classroom space is often organized into centers or areas, such as the classroom library or...
library corner, writing centers, dramatic play areas (including kitchens and offices, a block area, and sand or water tables), a storytelling area, puzzles and manipulative areas, science and math areas, an art center, a listening center, and message boards and mailboxes that are recommended for promoting the development of emergent literacy (Genisio & Drecktrah, 1999; Hunter, 2004; Miller, 2000; Morrow & Weinstein, 1986; Roskos & Neuman, 1994, 2001; Soderman et al., 1999).

The strategies and activities that are used in the classroom to promote the growth of emergent literacy in children are as important as the physical environment. Soderman and colleagues (1999) and Miller (2000) listed research-supported and commonly used strategies, such as the language-experience approach, scaffolded writing, reading aloud, shared readings, journal writing, daily news, use of nursery rhymes, retelling of stories, directed listening-thinking activities, and direct experiences.

Last is the role of the teacher, and whether the teacher views himself or herself as a facilitator of the development of emergent literacy. It is essential that teachers view emergent literacy as an interactive process, in which they support its development through “observing, assessing, planning, modeling, setting up a supportive environment . . . or directly instructing” (Soderman et al., 1999, p. 67).

Literacy for students with visual and multiple impairments

For students with visual and multiple impairments, including deaf-blindness, a broader definition of literacy is necessary. According to Langley (2000, p. 323), “literacy is communication, especially when the concepts and issues are applied to students with visual impairments and additional disabilities. In this respect, then, literacy is the most basic foundation for all learning.” Yanden, Rowe, and MacGillivray (1999, p. ii) supported this broad definition of literacy by recommending that researchers and educators “define literacy more broadly to include linguistic and nonlinguistic communication,” so that students from “underrepresented populations” in educational research, such as those with multiple impairments or deaf-blindness, will be more successful in developing literacy. Morrow (2001, p. 107) stated that “emergent literacy constructs are sensitive to children with special needs because they look for strengths the youngsters have rather than weaknesses.”

However, a review of the literature found a dearth of research on emergent literacy for students with visual and multiple impairments, including deaf-blindness. This lack of research is particularly alarming in light of the national initiatives that are meant to encourage the development of literacy in all children, including those with disabilities. The purpose of the study presented here was to investigate the emergent literacy supports that are available to students with visual and multiple impairments, including deaf-blindness. The research questions included these:

1. What environmental characteristics are present in the classroom to promote the development of emergent literacy in students with visual and multiple impairments, including deaf-blindness?
2. What strategies and activities are used in the classroom to promote the development of emergent literacy in students with visual and multiple impairments, including deaf-blindness?

3. What are the self-reported roles of the classroom teacher and service providers regarding their involvement in the development of emergent literacy in students with visual and multiple impairments, including deaf-blindness?

4. Are literacy-related assessments, such as a learning media assessment, available in the cumulative school records of students with visual and multiple impairments, including deaf-blindness?

**Methods**

**Participants and Settings**

A multiple-method, multiple case–study design was used to investigate the study’s research questions. Data were collected at five research sites, all of which were considered to be “day school” placements. Two sites were schools within public school districts; two were schools for students who are visually impaired; and one was a private, nonprofit agency for young children with visual impairments. One site was located in the Midwest, and two each were located in the northeastern and southeastern United States. At each of two sites, two classrooms were included in the study, and at the remaining three sites, one classroom each was included, for a total of seven classrooms. The classrooms were described as serving students with multiple impairments (n = 1), students with visual impairments (n = 1), and students with visual and multiple impairments or deaf-blindness (n = 5).

**Students**

A total of 29 students, aged 3 years, 3 months, to 21 years, 10 months, with visual and multiple impairments, participated in the study. To be included in the study, students had to meet the eligibility requirements of their state to receive special education services as students with visual impairments and additional disabilities. Of the 29 students, these additional disabilities were deaf-blindness (n = 18), mental retardation (n = 12), language impairments (n = 10), developmental delays (n = 8), and a specific learning disability (n = 1). Eighteen students were described as future braille readers, and 11 were described as future print readers.

**School personnel.** Various school personnel participated in the study by consenting to be observed or interviewed or both. In each room, the classroom teacher was observed and interviewed. The state teaching certifications of the classroom teachers included visual impairments (n = 3), early childhood special education (n = 2), and hearing impairments (n = 2); two of the teachers without certification in visual impairments were taking courses to complete the state certification in visual impairment. Of the four classrooms in which the classroom teacher was not a teacher of students with visual impairments, three did not receive direct or consultative support services from such a teacher. In the classrooms where the teacher was not a teacher of students who are deaf and hard of hearing, support services were not received from such a teacher, nor was these teachers’ attendance at Individualized Education Program (IEP) meetings documented.
Other school personnel participated by consenting to be observed or interviewed or both while working with the participating students. These personnel included 15 paraeducators (at least 2 per classroom); 4 orientation and mobility (O&M) specialists; 3 speech-language therapists; and 2 occupational therapists, art specialists, and music specialists. One classroom contained a full-time nurse.

DATA COLLECTION
The data collection methods of direct observations, interviews, and reviews of documents were used as part of the case study. Three methods were used to address validity and triangulation issues. These three methods are described as the most comprehensive and reliable in supporting a case-study approach (Bogdan & Biklen, 2003; Jorgensen, 1989; Stake, 1995; Yin, 1994), and are often referred to as the “observation-interview-documentation triptych” (Sanger, 1996, p. 60). Information for the study was collected until a data saturation point was reached; this point was reached after the third or fourth visit at each site.

Direct observation was the primary data collection method for the case studies and was used to collect data on environmental supports, teaching strategies, and activities both inside and outside the classrooms. At least three site visits were made to each site, for a total of 25 site visits. Each site visit took place over the course of a full school day, during which a variety of complete classroom schedules were observed. To address the issue of reliability, I created an observational protocol (Angrosino & Mays de Perez, 2000; Yin, 1994) that was based on research-based practices regarding environmental supports, teaching strategies, and activities that encourage the development of emergent literacy as has been discussed in the literature on emergent literacy. In addition to the use of the observation protocol, open-ended field notes were taken during the observations.

Structured, open-ended interviews were the second data collection method that was used. The interviews were structured around conversational guides (Rubin & Rubin, 1995), and included such topics as information on the students’ backgrounds and development of emergent literacy, strategies and activities that were used to encourage the development of emergent literacy, and the conversational partners’ perceived role in the students’ development of emergent literacy. The majority of interviews were digitally recorded and transferred to text for data analysis; handwritten notes were taken if the participant did not consent to being taped.

The last method of data collection was the review of documents, using document summary forms to organize the reviews (Miles & Huberman, 1994). The documents that were reviewed included the students’ IEPs and both formal and informal assessments that were in the students’ cumulative special education records. Data on teaching strategies, classroom activities, present levels of performance, goals and objectives, and accommodation statements were collected.

DATA ANALYSIS AND TRIANGULATION
All the data that were collected were analyzed using coding and pattern coding (Lofland, 1971; Miles & Huberman, 1994). Descriptive codes were developed and applied to the transcripts of the observations, interviews, and document
reviews. Intercode reliability was conducted at two points in the coding process (Miles & Huberman, 1994). The intercode reliability of the coding was conducted after the first interview and the first set of unstructured field notes were coded after two-thirds of the total coding was completed, resulting in 95% reliability. Next, in-depth case reports for each classroom were created on the basis of the descriptive coding and themes that were developed. Last, cross-case summaries were created to determine similarities among the classrooms and sites.

Measures to focus the data collection on the research questions were addressed through the use of the data collection protocols. The study design ensured validity and data triangulation through the use of multiple data sites. In addition, the case study design ensured methodological triangulation through the use of multiple data collection methods.

### Results

The multiple classroom case-study method provided a unique opportunity to investigate the emergent literacy supports that were available to the students with visual and multiple impairments, including deaf-blindness. Although many of the findings were supported by the literature on emergent literacy supports in general education settings for all students, the study presented in this article provides a foundation of knowledge for the field of visual impairment, since no prior studies have documented such supports. In this section, the cross-case findings are presented according to the four research questions.

#### Environmental Characteristics

Data on environmental supports was collected primarily through direct observation of the classrooms using an observation protocol (see Table 1 for the results.

### Table 1

**Environmental characteristics.**

<table>
<thead>
<tr>
<th>Environmental characteristics</th>
<th>Site 1</th>
<th>Site 2</th>
<th>C1</th>
<th>C2</th>
<th>Site 4</th>
<th>C1</th>
<th>C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Print-rich environment</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Labeling in classroom</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Library center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Writing center</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>5. Dramatic play center</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. Puzzle and manipulative center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>7. Block center</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>8. Math or science center</td>
<td>X</td>
<td></td>
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<tr>
<td>9. Storytelling center</td>
<td></td>
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<tr>
<td>10. Art or tactile center</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>11. Listening center</td>
<td>X</td>
<td>X</td>
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<tr>
<td>12. Other</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play center</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>

*Note: X represents the observation of the environmental characteristic in the classroom.*
for each classroom). Overall, the class-
rooms displayed a majority of the char-
acteristics that were found in the protocol,
as well as unique characteristics such as
play, music, and computer centers. Class-
room libraries or book centers, puzzle and
manipulative centers, and listening cen-
ters were most frequently observed
(71.4%), and storytelling centers (14.3%)
were the least observed.

Although the characteristics of labeling
(57.2%) and print-rich environments
(42.9%) were observed in the classrooms,
the labels and print were often inac-
cessible to the students with visual and
multiple impairments, including deaf-
blindness. For example, if a music center
was labeled in scrolling, poorly contrast-
ing letters five feet up on the wall, this
information would not be accessible to a
student who is blind or to many students
with low vision. Inaccessible labels were
observed in two of the four classrooms. In
general, the print-rich environments of
two of the three classrooms were not ac-
cessible to the students with disabilities.
In Site 5, Classroom 2, a unique approach
to labeling was taken: each center and
area of the classroom was labeled in the
literacy media of each student—print,
large print, braille, pictures, print sym-
bols, or tactile symbols.

A summary for each case or classroom
was then created. Three classrooms dis-
played at least half the supports that were
found in the original protocol, as well as
other unique characteristics; all were
classrooms that were primarily for stu-
dents with deaf-blindness. The classroom
that displayed the least number of char-
acteristics (2 of 14) was for students with
visual impairments and moderate to se-
vere multiple disabilities in which 90% of
the students were visually impaired. Two
other classrooms for students with visual
imperfections and moderate to severe mul-
tiple disabilities displayed only 6 of the
14 characteristics. It is interesting that the
most academically oriented classroom
(Site 3, Classroom 2) displayed only 5 of
the 14 characteristics; this was a kinder-
garten classroom for students with visual
impairments in which two students with
deaf-blindness and one student with vi-
sual and multiple impairments were
educated.

It is important to note that certain cen-
ters that were listed in the protocol, such
as a block center, may not be age appro-
priate for all classrooms and students.
Other age-appropriate classroom areas
could have been taken into consideration,
but none was found.

**Teaching Strategies and Activities**
Through observations, interviews, and re-
views of documents, data were collected
on the use of previously documented
teaching strategies and activities to en-
courage the development of emergent lit-
eracy. The observation protocol included
nine research-based teaching strategies
and activities; an additional six unique
strategies and activities were added to the
list over the course of the study. Exam-
pies of unique strategies and activities for
students with visual and multiple impair-
ments included the use of activity sched-
ules or early braille activities (see Table 2
for the results).

The use of daily news or morning cir-
cles was the most frequently documented
strategy or activity (85.7%) to support
emergent literacy. Nearly three-fourths of
the classrooms (71.4%) used the strate-
gegies and activities of reading aloud,
activity schedules, early braille activities, and early print activities. The least frequently reported strategies and activities (each 28.6%) were scaffolded writing, shared reading, conversations about reading, and choice boards. All strategies and activities were observed at least twice throughout the data collection process.

Four of the seven classrooms used more than 50% of the strategies and activities listed in the protocol. In Site 5, Classroom 2, a preschool for students who are deaf-blind, 11 of the 15 teaching strategies and activities were observed, including all the unique areas added to the protocol. The other three classrooms were an elementary classroom for students with multiple impairments (Site 1), a 1st-through 12th-grade classroom for students with deaf-blindness (Site 2), and a middle school classroom for students with moderate to severe disabilities and deaf-blindness (Site 4).

Three classrooms were documented as using less than half the strategies and activities that promote the development of emergent literacy. These classrooms were a kindergarten classroom for students with visual impairments (46.6%—Site 3, Classroom 2) and two preschool classrooms for students with deaf-blindness (40%—Site 5, Classroom 1; 13%—Site 3, Classroom 1).

In the interviews, the majority of school personnel (four O&M specialists, two speech and language specialists, one occupational therapist, one music specialist, and one art specialist) reported attempting to reinforce literacy development with the strategies and activities they used in their classrooms while working with students. All six paraeducators

Table 2
Teaching strategies and activities.

<table>
<thead>
<tr>
<th>Strategies or activities</th>
<th>Site 1</th>
<th>Site 2</th>
<th>C1</th>
<th>C2</th>
<th>Site 3</th>
<th>C1</th>
<th>C2</th>
<th>Site 4</th>
<th>C1</th>
<th>C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language-experience stories</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Scaffolded writing</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>3. Journal writing</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4. Reading aloud</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>5. Shared reading</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>6. Conversations about reading</td>
<td>X</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>7. Daily news</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8. Nursery rhymes and songs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<td>9. Direct experiences</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>10. Other</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Scribbling</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td>Activity schedules</td>
<td></td>
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<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<td>Choice boards</td>
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<td></td>
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<td>X</td>
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<td>Early braille activities</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<td>Early print activities</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

a Home-school journal writing was completed by the classroom teachers.

Note: X represents the observation of the activity or strategy in the classroom.

who were interviewed reported using the classroom strategies and activities that were documented through observations.

The IEPs of the students with visual and multiple impairments were analyzed for literacy-related goals, objectives, and accommodations (see Table 3 for the results). A total of 35 literacy-related IEP goals for all students were documented, or 18.6% of the total IEP goals that were counted. The range of literacy goals per classroom was 0 to 70.5% of the total goals. Eighty-two literacy-related objectives were recorded. In the area of accommodations, 62 literacy-related accommodations were documented, or 21.6% of the total accommodations that were found in all the students’ IEPs.

It is important to note the discrepancies between the observed strategies and activities and those reported by the classroom teachers during the interviews or those listed on the students’ IEPs under goals, objectives, or accommodations in six of the seven classrooms. Although all seven classroom teachers reported using language-experience stories, the use of these stories was observed in only one classroom. These discrepancies could have occurred for a variety of reasons, such as the limited opportunity to observe the classrooms on a minimum of three occasions.

### ROLES OF TEACHERS

A description of the roles of teachers in developing emergent literacy was collected via interviews from all seven classroom teachers. The major role that emerged from the interviews was that of a facilitator; six of the seven classroom teachers viewed themselves as the persons responsible for facilitating literacy development. The teachers expressed their role as facilitator through organizing the environment and providing opportunities to expose students to and engage students in literacy.

When asked about the current literacy status of their students, three of the seven teachers said that their students were either nonreaders or were not currently developing literacy skills. These teachers did not use the term *emergent literacy* when describing the students with whom they worked. All the teachers noted that communication was one of the top developmental priorities for their students. Three teachers thought that facilitating the development of communication should take priority over literacy; these three teachers (one of whom was certified in visual impairments and two of whom were certified in early childhood special education) were the same ones who stated that their students were nonreaders.

### Table 3

<table>
<thead>
<tr>
<th>IEP content</th>
<th>Site 1</th>
<th>Site 2</th>
<th>C1</th>
<th>C2</th>
<th>Site 4</th>
<th>C1</th>
<th>C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of student participants</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Number of literacy IEP goals</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Number of literacy IEP objectives</td>
<td>30</td>
<td>21</td>
<td>6</td>
<td>16</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Number of literacy accommodations</td>
<td>4</td>
<td>16</td>
<td>13</td>
<td>9</td>
<td>21</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

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LITERACY-RELATED ASSESSMENTS

Documents in each folder of the student’s cumulative special education records were reviewed to locate literacy-related assessments. Specifically, each folder was reviewed for the presence of a functional vision evaluation and learning media assessment. Of the folders for 29 students, 26 (89.6%) contained current functional vision evaluations, but only 4 folders (13.8%) contained a learning media assessment. Other assessments that included emergent print or braille literacy skills included the Oregon Project and the Hawaii Early Learning Profile; each was found in the folders for 2 students. Informal braille assessments or checklists, such as the Assessment of Braille Literacy Skills, were included in the folders for 2 students.

LIMITATIONS OF THE STUDY

The primary limitation of the study was the site sample; all classrooms were located in separate schools or day school programs. Although the sample of classrooms I selected allowed me to observe classrooms with a greater number of students with visual and multiple impairments, it did not allow for a broad generalization of findings. This, however, is a limitation that applies to most case studies and qualitative research (Yin, 1994). In addition, research sites were not located in the northwestern or southwestern United States. Regarding data collection, a limitation of the environmental characteristics protocol was the age appropriateness of some centers or areas.

Discussion

These multiple-case studies offer an in-depth description of the emergent literacy supports for students with visual and multiple impairments, including deaf-blindness. By investigating the environmental characteristics, teaching strategies and activities, roles of the teachers, and literacy assessments, I was able to document the emergent literacy supports for this student population. Several findings of this study warrant further discussion.

Although half the classrooms demonstrated 50% or more of the environmental characteristics and teaching strategies for promoting the development of emergent literacy for all children, there was an overall lack of accommodations and modifications for students with visual impairments. Examples included the inaccessibility of environmental print in the classrooms and the overall lack of braille-rich environments for students who were learning braille. The positive results included the observations of early braille activities in 71% of the classrooms.

An alarming finding was that only 13.8% of the students’ cumulative records included a completed learning media assessment. One is left to question how the decision to teach print, braille, or both print and braille was made for the 86.2% of students who did not have their literacy media assessed. These results are similar to those found by McKenzie (2007); in a survey of teachers of students with visual impairments who worked with students with deaf-blindness, only 23% reported completing learning media assessments for their students. The teachers’ comments included the need for more information on the use of learning media assessments for students with deaf-blindness or students with visual impairments and other disabilities.
Overall, there was a discrepancy in the observations, interviews, and reviews of documents regarding the teaching strategies for emergent literacy that are used in the classroom. For example, all the teachers who were interviewed reported using language-experience stories as a way to promote emergent literacy and communication, but the use and presence of language-experience stories was observed in only one classroom. In addition, the terminology or approach of language-experience stories were not found in the students’ IEPs. While 18.6% of the IEP goals addressed literacy skills, an average of 15% of the school day was spent on activities that were exclusively related to literacy. With such a large emphasis on literacy skills in the students’ IEPs, one would expect to see larger amounts of the day dedicated to literacy skills. One classroom (Site 2) did use a 90-minute literacy block during the school day. Data on the percentage of the day spent on joint communication and literacy activities were not collected.

During the interviews with the classroom teachers, three of the seven teachers used the term *nonreader* to describe their students’ literacy development. The term *emergent literacy* is typically used, since it clearly deviates from the connotation of nonreader and prereader. However, as Strickland and Cullinan (1990, p. 427) noted, rather than “classifying children as readers or non-readers, we believe it is more accurate to consider their literacy development as being on a continuum of increasing competence.” It is interesting to note that none of the three teachers performed learning media assessments for the students in their classrooms. It is also interesting that the American Printing House for the Blind’s annual registry of students with visual impairments still uses the terms *nonreader* and *prereader* for classifying students.

With regard to the roles of teachers of students with visual impairments, four of the seven classrooms did not have such teachers in the position of the classroom teacher. In three of these four classrooms, teachers of students with visual impairments did not provide consultative or direct services, as was documented by the observations, interviews, and reviews of documents. I was left with two questions: What educational team member is conducting visual impairment–specific assessments, such as learning media assessments? and What educational team member is providing braille instruction? Another alarming finding was the lack of support from and consultation with teachers of students who are deaf or hard of hearing for students with deaf-blindness. This lack of support is an especially surprising finding because only one classroom benefitted from a team member who was trained in deaf-blindness.

**Implications for Practice**

Although the purpose of the study was to establish a foundation of knowledge regarding the emergent literacy supports for students with visual impairments and multiple impairments, including deaf-blindness, implications for practice can be presented. These implications include the need for

- a continued and increased use of age-appropriate centers or classroom areas that were previously documented to encourage the development of literacy;
- a greater use of accessible labeling in the learning environments of this
student population, including print, large print, braille, and tactile symbols;  
• an increased use of teaching strategies and activities, such as reading aloud, shared reading, and scribbling, which have been documented as encouraging the development of literacy with this student population;  
• a greater emphasis on literacy in IEP goals, objectives, and accommodation statements;  
• a decreased use of the term nonreaders or the consideration that students are not currently developing literacy skills, and the increased emphasis on the developmental philosophy of emergent literacy; and  
• a greater use of learning media assessments for students with visual and multiple impairments to allow assessment-based decisions to be made regarding literacy programs for this student population (McKenzie, 2007, 2009).

SUGGESTIONS FOR FUTURE RESEARCH
The findings of this study support the need for more research on the development of emergent literacy in this student population, including the need to

• document the current emergent literacy skills of a representative sample of students with visual and multiple impairments, including deaf-blindness, through the use of research-based literacy assessments to describe and track emergent literacy and the development of literacy;  
• conduct longitudinal studies of the development of emergent literacy in students with visual and multiple impairments, including the documentation of supports and influencing factors;  
• conduct intervention-based research in classrooms of students with visual and multiple impairments, including deaf-blindness, to document the effects of research-based emergent literacy supports; and  
• develop research-based emergent literacy assessment and instructional practices for students with visual and multiple impairments, including deaf-blindness.

References
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