

Joint Attention in Book Reading for Children with Hearing Loss

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A thesis submitted to the faculty of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements for the degree of Masters of Science in
Speech Language Pathology in the Department of Speech and Hearing
Sciences.

Chapel Hill
2010

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ABSTRACT

KENDRA CHRISTENSEN: Joint Attention in Book Reading for Children with Hearing Loss
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Children with hearing loss are at risk for delays in the development of language and literacy skills. Recent technological advances in cochlear implants and hearing aids may create more easily accessible language and literacy skills for these children; however, the impact of this technology is still unknown. Strategies targeting improved shared book reading interactions have the potential to have a positive impact on the language and literacy development of children with hearing loss. In this study, a questionnaire was developed that could be utilized to help determine the differences in the home literacy environments of these children, as compared to normal hearing children, to see if there is a need for such interventions and to guide the development of strategic interventions. Overall, this questionnaire was shown to be written at a level that is accessible to families of various educational levels.

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CHAPTER 1

INTRODUCTION

Historically, children with hearing loss have been at risk for delays in language and literacy development. These children have shown lower literacy levels, academic achievement, and language abilities than typically hearing children. With the implementation of newborn hearing screenings, more children with hearing loss are being identified earlier, are receiving amplification earlier, and are participating in early intervention services at an earlier age. Additionally, improvements in technology for hearing aids and cochlear implants allow these children enhanced access to sound as compared to prior technology.

It is unknown whether these changes have had a significant impact on the language and literacy development of these children. Enhanced access to sound through early identification and amplification could provide these children with more exposure to language, allowing them to develop language and literacy skills similarly to their typically hearing peers. The home literacy experiences of these children may also have been affected by earlier and enhanced amplification, but this is unknown as well. It is essential to research the language and literacy development of children with hearing loss to fully understand how advancements in identification and technology have impacted their development. The goal of the current study was to gain a better understanding of children's home literacy

experiences through the development and dissemination of a questionnaire. Through this questionnaire, a description of home literacy experiences can be acquired and the results compared with the home literacy experiences of children without hearing loss to determine whether differences exist. This information could show whether the development of interventions for children with hearing loss focused on shared reading experiences is necessary, and may provide the foundation for the development of interventions strategies. Additionally, it could guide development of tools to provide to parents with suggestions about how to enhance the literacy environment of their child.

These research questions guided the development of this study:

1. How can the home literacy experiences of children with hearing loss be described?
 - a. How can the home literacy environment of these children be described?
 - b. How much time do caregivers spend in shared reading activities with their children at home?
 - c. What are the parent and child behaviors during shared reading activities in the home?
2. How do the home literacy experiences of children with hearing loss compare to the home literacy experiences of children without hearing loss?

CHAPTER 2

BACKGROUND AND SIGNIFICANCE

Language Development of Children with Hearing Loss

It is essential to understand the impact hearing loss can have on the language and literacy development of children. Multiple studies have compared the language development of children with hearing loss to their peers without hearing loss. Moeller, Tomblin, Yoshinaga-Itano, Connor, and Jerger (2007) reviewed over 20 studies completed between the 1970s and early 2000s in this area, focused on children with mild to severe hearing loss. While they found a serious need for more in depth research, they conclusively established that children with hearing loss are at risk for delays in development of early receptive and expressive vocabulary, morphology, and syntax production. Hearing loss is related to delays in language development; thus, it is essential to have beneficial interventions in place to help facilitate language development for these children.

Vohr et. al (2008) completed a study of 30 infants with hearing loss, identified in the Rhode Island newborn hearing screening program, and 96 hearing control subjects also residing in Rhode Island. They compared the early language outcomes at 12 to 16 months of age of early-identified children with hearing loss to those of children with normal hearing. They found that children with moderate/profound hearing loss demonstrated delayed expressive and

receptive language skills in oral and signed English modes, as compared to children with mild/minimal hearing loss and normal hearing peers. However, the researchers did not discuss the amplification of the infants with hearing loss, other than stating that none of them currently had a cochlear implant.

Appropriate amplification is necessary to help children develop spoken language. Although the amplification status is unknown, these results indicated that even when a greater number of children with hearing loss were identified early, the expressive and receptive language skills of children with a moderate to profound hearing loss can be affected. Additionally, they found that the infants who had been enrolled in early intervention prior to 3 months had significantly higher percentile scores for number of words understood, words produced, and early, later and total gestures than those enrolled in early intervention at 3 months of older. These results indicate a positive effect of very early intervention with children who have hearing loss. Additionally, this research shows the necessity of appropriate interventions for children with hearing loss in order to help them achieve language abilities that are equivalent to those of their peers.

Literacy Development of Children with Hearing Loss

In addition to considering the language development of children with hearing loss, it is important to look at their literacy abilities, as the two can be closely linked with one another. In their review of studies of children with mild to severe hearing loss, Moeller et. al (2007) also reviewed multiple studies pertaining to the literacy development of children with mild to severe hearing

loss. Varying results were reported, with some studies showing a significant difference between the literacy abilities of children with hearing loss and normal hearing children, and others showing no difference. The authors concluded that when looking at the data as a whole, the children with hearing loss seem to be at risk for lower reading abilities, especially tasks that involved phonological processing skills, than typically hearing peers.

Easterbrooks, Lederberg, Miller, Bergeron, and Connor (2008) compared children with hearing loss greater than 50 dB to children with normal hearing on a variety of emergent literacy skills. The authors assessed these literacy skills at the beginning and ending of preschool, kindergarten, or first grade school year for 44 children. On literacy tasks requiring recognition of letters and written words, the investigators found that children with hearing loss had scores comparable to those of their normal hearing peers. The standard scores on literacy tasks, however, had a negative correlation with age, signifying a possible increasing gap in literacy skills between children with hearing loss and their normal hearing peers as they age. Additionally, it was found that children with hearing loss lagged behind their normal hearing peers in phonological awareness in the early school years. This study contributes to the notion that children with hearing loss may be at risk for poorer reading achievement.

Joint Attention

Joint attention is one avenue through which children develop language skills. Joint attention, an early developing skill, allows children to focus their

attention on the same object as an adult while providing learning opportunities focused around that entity. Tomasello and Farrar (1986) showed that joint attention episodes allowed for longer conversations between children and caregivers, higher number of utterances, words, object labels per minute for children, and a greater number of shorter sentences produced by mothers as compared to child/parent interactions without joint attention. Consequently, it is reasonable to assume that activities that provide opportunities to engage in joint attention provide an excellent platform for opportunities for young children to learn language.

There is some evidence that children with severe to profound hearing loss may have less time spent in joint attention with their caregiver during play. Prezbindowski, Adamson, and Lederberg (1998) taped and analyzed observations of play interactions with hearing toddlers and their hearing mothers and toddlers with severe to profound hearing loss and their hearing mothers. They found that the toddlers with hearing loss spent significantly less time in instances of joint attention with their mothers as compared to their normally hearing peers. Additionally, the toddlers with hearing loss were found to spend more time focusing on an object alone. As this study focused on children with severe to profound hearing loss, there is no evidence that this would be the case for children with lesser degrees of hearing loss. However, it does suggest a need to implement interventions for children with hearing loss to improve the amount of time these children spend in episodes of joint attention with their caregivers.

Joint Attention in Shared Reading

According to Moerk (1985), picture books provide an excellent means for a parent to establish joint attention with the child. During picture book readings, the parent and child typically sit close together, with the book in their hands, and focus on a book. This provides an easy environment for joint attention: as there is no complication regarding the distance to the item referenced and no wide shifts in gaze, which are two elements required to maintain joint attention. With the picture book in an optimal location, directly in front of them, the adult or child can easily point to select a specific item or picture in the book for conversational focus and check visually to assure a shared focus.

Evidence exists indicating that children with hearing loss spend less time in joint attention focused on picture books than their normal hearing peers. In a study comparing prelinguistic communicative abilities of toddlers with and without hearing loss, Zaidman-Zait and Dromi (2007) found toddlers with hearing loss demonstrated reduced involvement in joint attention in picture book reading with adults as compared to their normal hearing peers. If these results are found to apply to a broader population of children with hearing loss, the lack of involvement of the child in joint attention book reading activities could have a negative impact on the language development of children with hearing loss. For children with hearing loss, intervention focused on enhancing book-sharing activities between them and their caregivers could be an essential element to improve their language abilities.

Impact of Shared Reading Interventions on Language Development

Interventions that support families in learning to provide beneficial shared reading experiences for their children in the home and in school settings have been evaluated. Frequency of parent reading with children was shown to have a significant relationship to the expressive vocabulary of 18-month-old Swedish infants: measured by the Swedish Communication Inventory in a study completed by Westerlund and Lagerberg (2008). High, LaGasse, Becker, Ahlgren, and Gardner (2000) completed a study of 205 normally developing low-income children who were randomly assigned to an intervention or control group. The intervention group received additional reading resources and advice about sharing books with children, while the control group received no materials pertinent to literacy. The families in the intervention group increased the frequency of reading to their children at home. After an average of 3.4 well-child visits, older toddlers (18-25 months old) in the intervention group had higher receptive and expressive vocabulary scores than did control group children. The younger intervention toddlers in the study (13-17 months old) were not shown to have increased receptive and expressive vocabulary (High et al, 2000), likely because vocabulary production at this age is low. A study completed by Lonigan, Anthony, Bloomfield, Dyer, & Samwell (1999) compared the effects of two shared reading interventions with a control group of at-risk preschool students. One reading intervention consisted of a typical shared reading condition, while the other was a more interactive reading condition. Both six-week reading interventions showed positive effects on the children's emergent literacy skills.

Children in the intervention groups showed a significant increase in scores on tests assessing verbal expression, listening comprehension, and alliteration. The study determined that shared reading could facilitate language and literacy development.

Currently, controversy exists in the literature about whether reading experiences have an actual impact on language learning. Throughout the literature, the strategies utilized during reading experiences varied widely, which may have affected the disparity of language results found across studies. For example, *What Works Clearinghouse* (2006 & 2007) reviewed studies focused on dialogic reading, interactive shared reading, and shared reading. Of the three types of reading experiences, only dialogic reading was consistently found to have positive effects on oral language development. Dialogic reading emphasizes the child as the main story teller as opposed to the adult. The adult participates in the interaction by asking questions, adding information, and prompting the child to enhance his or her descriptions (Lonigan & Whitehurst, 1998). As the child becomes the storyteller in dialogic reading, these experiences have a greater impact on the child's use of language.

The *What Works Clearinghouse* reports (2006, 2007) also reported the results of studies focusing on shared reading and interactive shared reading. Two studies of interactive shared reading were reviewed. Interactive shared reading is a practice in which the adult reading the text utilizes a variety of strategies to help captivate the child or children in the text. Neither study showed statistically significant results when measuring the effect of shared reading on

oral language development. One study showed results that favored the comparison group (Lamb, 1986), and the other study's results favored the intervention group (Mautte, 1991). Overall, the effectiveness of shared reading intervention on oral language development is mixed. In the *What Works Clearinghouse* report (2006) on shared reading, one study showed statistically significant positive effects of shared reading on oral language development (Lonigan et al. 1999), while the other two studies reviewed demonstrated no significant effects of shared reading intervention on oral language development (Irlen 2003a, Irlen 2003b). This data demonstrates the need to consider the type of shared reading experience provided, if used as an intervention tool. According to the findings by the *What Works Clearinghouse* reports, a more interactive approach, allowing the child to have significant opportunities to use language in shared reading, provides for more positive effects on the language development of children.

Whitehurst et al (1988) completed a study focusing on a home-based reading intervention to improve language development through optimizing parental reading of picture books to young children. The parents in the experimental group were instructed in how to utilize a wider variety of questions, such as open-ended questions, function/attribute questions, and expansions, while reading to encourage a greater use of language by the child. The experimental group's reading experiences were tailored to produce greater child language output during picture book reading. Parents in the control group were instructed to read to their child as they typically would. Children in the

experimental group were shown to have significantly higher expressive language abilities than children in the control group, as measured on standardized tests following the intervention. This study provides further support to the notion that it is essential to consider the type of reading experience, when used as an intervention tool to target language and literacy development. An approach that allows for the child to have an increased use of his or her own language provides a better environment for improving the child's language abilities.

Interactive reading interventions have also been tested in a classroom setting. Wasik, Bond, and Hindman (2006) trained Head Start intervention teachers to ask open-ended questions strategically, requiring more than a one-word response, while simultaneously building vocabulary found in stories and making connections between what occurs in the book and other activities in the child's life. Additionally, the teachers were trained in oral language strategies, to maximize the language development of the children throughout interactions. After one school year, children in the intervention classrooms performed significantly better than children in the control classrooms on the Peabody Picture Vocabulary Test-III and the Expressive One-Word Vocabulary test (3rd edition). The results showed that a more interactive approach of shared reading can help to improve the vocabulary of at risk children. Additionally, a study completed by Elley (1989), of seven and eight year old classrooms in New Zealand, found that children successfully learn vocabulary through listening to teachers read books aloud: regardless of whether the teacher provides an explanation for the meaning of a word or not. However, they did find that

vocabulary learning is higher when explanation of the word is provided. These studies show that shared reading approaches that provide rich language interactions for children can be utilized in a variety of settings to help children develop stronger language skills.

Need for Further Research

Children with hearing loss are at risk for language and literacy development delays. Unfortunately, there is not a significant amount of research indicating that improving technologies or earlier identification and intervention has affected the outcomes of children with hearing loss. It is essential to ensure that children with hearing loss are being provided with as much support as possible to help utilize the technological advances that have recently occurred in hearing aids and cochlear implants to obtain language and literacy skills similar to that of their normal hearing peers. One environmental element, which research has shown to potentially improve language and literacy abilities, is joint attention in picture book reading between parents and children. In order to better assess whether children with hearing loss are having similar home literacy experiences as their normal hearing peers, a home literacy questionnaire may be utilized.

In the past, home literacy questionnaires have been successfully employed to describe the home literacy environment of children with disabilities. Trenholm and Miranda (2006) used a questionnaire to describe the home and community literacy experiences of children with Down syndrome. This

questionnaire enabled them to discuss how literacy development in persons with Down syndrome could be encouraged, and suggest the need for future research in this area. Van der Schuit, Peeters, Segers, van Balkom, and Verhoeven (2009) employed a home literacy questionnaire to compare the home literacy experiences of children with intellectual disabilities to two groups of children without disabilities: one of the same chronological age and one of the same mental age. This questionnaire successfully showed differences between the home literacy environment of children with intellectual disabilities as compared to children without disabilities of the same chronological and those of the same mental age. The authors determined that these differences were present primarily due to the cognitive abilities of the children with intellectual disabilities. These studies are excellent examples of how a home literacy questionnaire can be adopted to show differences in the home literacy experiences of children with different characteristics.

This study focuses on developing an appropriate questionnaire to be used to better understand the home literacy experiences of children with hearing loss, and to describe how their experiences compare to those of their normal hearing peers. Results from this questionnaire could help guide recommendations for improving the home literacy experiences of these children and provide the basis for developing interventions for these children focused on joint attention in book reading.

CHAPTER 3

METHODS

Questionnaire Development

The development of the questionnaire focused on the home literacy experiences of young children (24 to 47 months old) was a multi-step process. Initially, questions from existing questionnaires regarding early literacy experiences were compiled to provide a basis for development. An expert in early literacy, Dr. Pat Mirenda, was contacted to discuss issues pertaining to home literacy experiences of children. From this contact, questionnaires were provided that were developed and used in studies of the home literacy experiences of preschoolers enrolled in Head Start and special education programs (1993), and of the home and community literacy experiences of individuals with Down syndrome (2006). Each of the questionnaires was examined, and questions pertaining to the information related to the research questions in the current study were compiled.

Once these questions were assembled, they were divided into categories of interest for this research. The categories of information targeted in this questionnaire included the home environment of the child, descriptions of reading experiences between the parent and the child, and the parent's own reading

experiences. These categories were selected to provide a description of the home literacy environment of a child and factors that affect that environment.

Each question was then edited multiple times to ensure the simplest language was employed to give individuals of multiple education levels the opportunity to fully understand the questions. Initially, the author evaluated the questionnaire. Subsequently, the questions went through multiple revisions by a graduate level speech language pathology professor, a college-educated parent of a young child, and a middle school writing teacher. Employing multiple revisers helped mitigate personal bias in the editing process and helped to reinforce the operative goal, that each question be worded as clearly as possible.

Following these initial reviews an expert in early literacy reviewed the questionnaire. Dr. Pierce has had extensive experience working with families and schools to help children, with a variety of disabilities and risk factors, develop literacy abilities. The questions were assessed again to confirm that they were appropriate and to determine that they adequately addressed the research question. It was suggested that the number of questions be reduced to target only the essential information, and to reduce the time required by respondents to complete the questionnaire. (The questionnaire can be found in Appendix A.)

Analysis of Questionnaire

Following review by teachers, parents, and experts in early literacy, an online readability measure was used to assess the question stems. Online-utility.org (http://www.online-utility.org/english/readability_test_and_improve.jsp)

provides a free online software tool that measures the readability of a document. It indicates the number of years of education an individual would need to comprehend the document upon first reading. It uses four different indices to provide an approximate representation of the U.S. grade level required to understand the text: the Coleman Liau index, the Flesh Kincaid Grade level, the Automated Reading Index, and the SMOG. The approximate U.S. grade level required to comprehend the question stems according to these indexes are as follows:

- Coleman Liau Index: 3.72
- Flesh Kincaid Grade Level: 4.71
- Automated Readability Index: 1.88
- SMOG: 6.27

The average grade level from these indexes is 4.03. This indicates that an individual would only need a fourth grade education to understand the question stems on this questionnaire. These analyses indicate an appropriate reading level for this questionnaire, as this is a pretty basic level.

Additionally, members of the community reviewed the questionnaire. The questionnaire was provided to a selection of parents. Two methods were used to distribute the questionnaire with a set of follow up questions regarding its' clarity. In one distribution, the questionnaire was provided to parents in a middle-income neighborhood playgroup. A second group was composed of parents of children attending a low-income charter school that provides education to children from lower-income families. These two groups were selected in order to provide

feedback on the questionnaire from adults in two different areas of a community, with likely differences in income, background, and educational level.

Four follow up questions were asked regarding the questionnaire:

1. Which questions did you find confusing?
2. Do you have suggestions for making them less confusing?
3. Should other choices have been provided to any of the questions?
4. If so, what additional answers should be offered?

In addition, these parents answered demographic questions on the questionnaire in order to provide information about the diversity of the reviewers. The results from these parents were reviewed and compiled to provide an assessment of the questionnaire.

Subjects

For application of this questionnaire, two groups of children and their caregivers will be targeted: one group consisting of children with hearing loss and the other consisting of children without hearing loss.

Group One: Children with mild-to-profound bilateral sensorineural hearing loss, in the state of North Carolina, can be identified using the BEGINNINGS For Parents Who Are Deaf or Hard of Hearing, Inc. database. To qualify for the study, children must have pure tone averages of 30 dB HL or worse and no additional known sensory or developmental disorders. Parent respondents in group one must be able to read and must be fluent in English.

Group Two: Children with normal hearing will be recruited through Head Start and other preschool programs across the state of North Carolina. In order to qualify for the study, normal hearing children must have hearing thresholds greater than 20 dB in the 250-6000 Hz range, achieved developmental milestones within normal limits, and no known sensory or developmental disorders. Also, parent respondents in group two must be able to read and must be fluent in English.

The early literacy questionnaire will be mailed to caregivers along with a cover letter detailing the elements of consent and a stamped, addressed return envelope to allow for easy return of the questionnaires. Follow-up postcards will be mailed to all recipients two weeks after the questionnaire is mailed reminding families to return the questionnaire if they have not yet done so. The data will be analyzed to determine whether differences in the home literacy experiences of these children are described. To have an appropriate basis for comparison, children with hearing loss would be matched to children with normal hearing on the characteristics of age, gender, and SES. This would allow for the effect that these factors have on the home literacy experiences to be accounted for in the data analysis.

CHAPTER 4

RESULTS AND DISCUSSION

The questionnaire and follow up questions were distributed by email to 28 parents in a Charlotte neighborhood playgroup. Of these 28 parents, six responded. Two of these parents, however, answered only the demographic questions and failed to answer the follow up questions about the questionnaire. Consequently, four responses were compiled from this group of parents. Of the four parents responding, all were college graduates, and one had also completed graduate school. Three lived in a large city (Charlotte); and one had one recently moved to a suburban area outside Saint Louis, MO. These parent responses to the follow up questions can be found in the Appendix B: Answers from neighborhood playgroup parents.

Parent 1 felt the questionnaire was completely clear and thorough with no comments suggesting any changes be made in the questionnaire. Each of the other parents suggested minor changes for the questionnaire. Parent 2 felt that the yes/no questions needed more answer options such as always/sometimes/never. Unfortunately, the questions this suggestion pertained to were not specified. However, in reviewing the questionnaire, multiple questions (1, 10, 11, and 12) have yes or no answer choices in table format. These questions target activities in the home with the child, as well as child and

adult behaviors during shared reading. In formulating these questions, the design was intended to discover whether or not these activities or behaviors are present, not to target the frequency to which they happen. For the purpose of discovering the characteristics present in home reading experiences, it is simpler to only provide two answers choices: yes, it does occur, or no, it does not occur. For a more in depth study in the future, it could be beneficial to implement answer choices that indicate the frequency of these behaviors. However, frequency of behavior questions can be difficult for parents to classify, and providing yes or no answer choices, overall, would lead to less confusion.

Parent 3 felt the part of question 10, “focus on adult’s mouth movements as adult describes picture(s) in the book,” was confusing, as she had never thought to look or watch for that before. While this question may sound strange to many parents of normally hearing children, it is more likely that a parent of a child with hearing loss would be cognizant of whether their child was focusing on their mouth movements. Given that the focus of this questionnaire is to be able to obtain a full picture of the home literacy experiences of children with hearing loss, this would be an important element to include. Additionally, this parent thought that in question 2 another answer choice should be, “children’s books without or with only a few pictures,” (i.e. early chapter books). The addition of this answer choice would help to provide additional information about the home literacy environment: as there are some parents who begin to read very early chapter books to their preschool age children. The presence of these early chapter books could help to show a literacy rich home environment. It might also

indicate differences in the literacy environments of children in the two groups. Furthermore, this parent felt there should be another question asking whether a child “reads” books to themselves (flipping pages and possibly even telling a story aloud while doing so.) A question targeting this could help to give insight into the experience that child has with reading and their enjoyment of the activity; however, as this questionnaire is focused on better understanding the shared reading experiences between the caregiver and the child, the question is beyond the scope of this study.

Parent 4 voiced concerns about questions 7 and 15. Question 7 asks the respondent to describe how they sit with their child during reading. Parent 4 felt that would be difficult to describe. For this question, there are “yes” and “no” options with additional lines asking the parent to describe how you sit. The main information desired from this question is to know simply whether or not the parent sits with their child in a special way while reading to allow them to see and hear better. Parents may have some difficulty describing the way that they sit, but any information that can be obtained would provide insight into successful shared reading experiences. This parent indicated that the question was clear, thus there was no concern about the question “confusing” the respondent. Question 15 asks who the respondent is in relation to the child. This parent suggested a simple clarification next to the answer choice “other” modifying it from “please describe” to “please describe relationship” to child. This concern is valid. In order to help the answer choice of “other” be clearer, it would be beneficial to have a better description next to that answer choice. “Please describe

relationship to child” would help respondents more easily provide the desired information, if their relationship to the child is not one of the provided answer choices.

The questionnaire and follow up questions were also distributed by hand to five parents of children attending a charter school in Charlotte, with primarily low income minority students. Of these parents, four completed the follow up questions. All lived in Charlotte as well, and were all high school graduates. Two had completed some college, and one had completed some technical school training. None were college graduates. In response to the questionnaire, all parents felt that the questions were “simple,” “not confusing.” None of the parents provided any additional answer choices for the questions. These parents’ responses to the follow up questions can be found in the Appendix C: Answers from charter school parents.

There was a notable difference in response rates between these two parent groups. While 80% of the parents from the low-income charter school responded to the questionnaire, only 21% of the neighborhood playgroup parents responded. This is likely due to the fact that the questionnaire was distributed to the charter school parents by one of the teachers at the school. These parents probably felt a need to respond due to their relationship with this teacher, while the neighborhood playgroup parents didn’t have a strong personal relationship motivating their response.

Overall, it should be noted that no significant issues were found in this questionnaire. None of the parents had the same concern about any one

question, indicating that the questionnaire would likely be understood by a variety of respondents and is clear enough to obtain the desired information. Another important point is that none of the parents with lower education levels had concerns about the survey. Each of these parents felt the survey was clear and easy to understand, while most of the parents with higher education levels found small changes to make in the survey. This may be due, in part, to the fact that parents with higher education levels more closely analyzed the survey for components that could be changed. On the other hand, parents with slightly lower levels of education evaluated each question as either clear and understandable, or not. Their positive response indicates that respondents with at least a high school education can understand the questionnaire. However, it is important to note that these parents, who lack higher education, could be unwilling to admit an inability to understand the questions. Similarly, they may have been hesitant to say anything negative about the questionnaire, fearing the teacher might think less of their reading abilities if they admitted to not understanding the questions. It is difficult to ensure that each of these parents was being truthful; although, given that all the respondents answered this way, it can be assumed that the questions were clear. Therefore, this questionnaire would be appropriate to use in its present condition with people from various educational levels.

In present form, this questionnaire is ready to be administered to collect data. The only changes that would be appropriate include the addition of another answer choice to question 2, and the clarification to the answer choice “other” in

question 15 as previously discussed. With these changes, these questions would be (changes in bold):

(2) Are any of these items found in your home? (*check all that apply*)

- | | |
|--|--|
| <input type="checkbox"/> alphabet books | <input type="checkbox"/> comic books |
| <input type="checkbox"/> picture books without words | <input type="checkbox"/> cookbooks |
| <input type="checkbox"/> books for young children | <input type="checkbox"/> daily or weekly newspaper |
| <input type="checkbox"/> magazines for young children | |
| <input type="checkbox"/> children's books with few or no pictures | |
| <input type="checkbox"/> other (please describe) _____ | |

(15) The person filling out this survey is the child's

- | | |
|--|--|
| <input type="checkbox"/> mother | <input type="checkbox"/> foster mother |
| <input type="checkbox"/> father | <input type="checkbox"/> stepparent |
| <input type="checkbox"/> grandparent | |
| <input type="checkbox"/> other (please describe relationship to child) _____ | |

These changes would ensure the clarity of the questionnaire. Moreover, with these changes the questionnaire would be a useful tool for researchers to better understand the home literacy environment of children with hearing loss. Additionally, the questionnaire would be a useful tool to compare with hearing loss to those without. (A revised version of the questionnaire is included in Appendix B.)

APPENDIX A

QUESTIONNAIRE AS GIVEN TO PARENT RESPONDENTS

Home Environment

(1) Do you or another adult do any of these things with your child at home?

Item	Yes	No
sing children's songs		
do "finger play" songs or games (e.g., Itsy Bitsy Spider, Wheels on the Bus)		
read or tell nursery rhymes		
read or tell other poems or jingles		
tell stories without books (e.g., fairy tales, holiday or religious stories, etc.)		

(2) Are any of these items found in your home? *(check all that apply)*

- | | |
|--|--|
| <input type="checkbox"/> alphabet books | <input type="checkbox"/> comic books |
| <input type="checkbox"/> picture books without words | <input type="checkbox"/> cookbooks |
| <input type="checkbox"/> books for young children | <input type="checkbox"/> daily or weekly newspaper |
| <input type="checkbox"/> magazines for young children | |
| <input type="checkbox"/> other (please describe) _____ | |

(3) What can your child read? *(check all that apply)*

- | | |
|--|---|
| <input type="checkbox"/> his or her name | <input type="checkbox"/> 10 words or less |
| <input type="checkbox"/> fewer than 10 letters of the alphabet | <input type="checkbox"/> more than 10 words |
| <input type="checkbox"/> 10 or more letters of the alphabet | <input type="checkbox"/> print in the environment (signs, etc.) |
| <input type="checkbox"/> other (please describe) _____ | |

Reading with your child

(4) How often do you read aloud to your child? *(check one)*

- | | |
|---|---|
| <input type="checkbox"/> never | <input type="checkbox"/> 3-4 times per week |
| <input type="checkbox"/> seldom (less than once a week) | <input type="checkbox"/> once a day |
| <input type="checkbox"/> 1-2 times per week | <input type="checkbox"/> many times a day |

(5) How old was your child when you started to read to him/her?

- | | |
|--|---|
| <input type="checkbox"/> 0 to 6 months | <input type="checkbox"/> 1 to 2 years |
| <input type="checkbox"/> 6 to 12 months | <input type="checkbox"/> older than 2 years |
| <input type="checkbox"/> I have not started to read to him/her yet | |

(6) Where is your child when you read together? *(check all that apply)*

- | | |
|---|--|
| <input type="checkbox"/> in a special chair | <input type="checkbox"/> beside an adult on the sofa |
| <input type="checkbox"/> at a table | <input type="checkbox"/> lying in bed at bedtime |
| <input type="checkbox"/> on an adult's lap | <input type="checkbox"/> other |

(7) Do you and your child have a way to sit that lets them see and hear better when you read?

- yes no

If yes, please describe how you sit _____

(8) How does your child feel about being read to? *(check only one)*

- | | |
|--|--|
| <input type="checkbox"/> dislikes being read to | <input type="checkbox"/> likes to be read to |
| <input type="checkbox"/> often prefers not to be read to | <input type="checkbox"/> loves to be read to |

(9) How would you describe your experiences reading with your child? (*check one*)

- enjoyable
- frustrating
- you don't have enough time to read with your child

(10) When someone reads to your child does he/she....? (*check all that apply*)

<i>Item</i>	<i>Yes</i>	<i>No</i>
pick which book to read		
turn book page(s)		
listen quietly		
point to pictures or words in response to questions		
shift gaze from book pictures(s) to adult and from adult back to book pictures		
look at specific picture(s) in book to which adult is pointing		
focus on adult's mouth movements as adult describes picture(s) in the book		
answer questions		
ask questions		
make comments		
retell stories when prompted		
retell stories spontaneously		
try to guess what will happen next		

other (please describe) _____

(11) What does your child do to "tell you" they are finished reading?

<i>Item</i>	<i>Yes</i>	<i>No</i>
closes book		
pushes book away		
refuses to look at books with you		
will look, but only for a very short time (less than 1 minute)		
tells you, "no, no more, finished etc"		

(12) When you read a book with your child, what do you usually do?

<i>Item</i>	<i>Yes</i>	<i>No</i>
tell the story in your own words		
read the text in the book		
point to the pictures and label them		
point to the words in the book		
ask your child to label the pictures (e.g., What's this?)		
ask your child to point to the pictures (e.g., Where is the...?, Show me the...)		
ask your child what happened in the story		
ask your child what will happen next		
ask your child to explain why something happened		

other (please describe) _____

Your Reading Experiences

(13) How do you feel about reading? (*check only one*)

- dislike reading
- often prefer not to read
- like reading
- love reading

(14) How often do you read? (check one)

never

seldom (less than once a week)

1-2 times per week

3-4 times per week

once a day

many times a day

Your Family

(15) The person filling out this survey is the child's

mother

father

grandparent

other (please describe) _____

foster mother

stepparent

(16) What is your child's birth date? _____

(17) How would you describe the education of this child's mother?

less than 12th grade

high school graduate

community college

technical school

some college

college graduate

graduate or professional

(18) How would you describe the education of this child's father?

less than 12th grade

high school graduate

community college

technical school

some college

college graduate

graduate or professional

(19) Your child is:

male

female

(20) How would you describe the area where you live?

rural

suburban

large city

small city

(21) What is the zip code where you live? _____

(22) How would you describe yourself?

White

Asian

Other (please describe) _____

African-American

Hispanic

APPENDIX B:

REVISED QUESTIONNAIRE

Home Environment

(1) Do you or another adult do any of these things with your child at home?

<i>Item</i>	<i>Yes</i>	<i>No</i>
sing children's songs		
do "finger play" songs or games (e.g., Itsy Bitsy Spider, Wheels on the Bus)		
read or tell nursery rhymes		
read or tell other poems or jingles		
tell stories without books (e.g., fairy tales, holiday or religious stories, etc.)		

(2) Are any of these items found in your home? *(check all that apply)*

- | | |
|--|--|
| <input type="checkbox"/> alphabet books | <input type="checkbox"/> comic books |
| <input type="checkbox"/> picture books without words | <input type="checkbox"/> cookbooks |
| <input type="checkbox"/> books for young children | <input type="checkbox"/> daily or weekly newspaper |
| <input type="checkbox"/> magazines for young children | |
| <input type="checkbox"/> children's books with few or no pictures | |
| <input type="checkbox"/> other reading materials (please describe) _____ | |

(3) What can your child read? *(check all that apply)*

- | | |
|--|---|
| <input type="checkbox"/> fewer than 10 letters of the alphabet | <input type="checkbox"/> 10 or more letters of the alphabet |
| <input type="checkbox"/> fewer than 10 words | <input type="checkbox"/> 10 or more words |
| <input type="checkbox"/> his or her name | |
| <input type="checkbox"/> print in the environment | |
| <input type="checkbox"/> other (please describe) _____ | |

Reading with your child

(4) How often do you read aloud to your child? *(check one)*

- | | |
|--|---|
| <input type="checkbox"/> never | <input type="checkbox"/> 3-4 times per week |
| <input type="checkbox"/> less than once a week | <input type="checkbox"/> once a day |
| <input type="checkbox"/> 1-2 times per week | <input type="checkbox"/> many times a day |

(5) How old was your child when you started to read to him/her?

- | | |
|--|---|
| <input type="checkbox"/> 0 to 6 months | <input type="checkbox"/> 1 to 2 years |
| <input type="checkbox"/> 6 to 12 months | <input type="checkbox"/> older than 2 years |
| <input type="checkbox"/> I have not started to read to him/her yet | |

(6) Where is your child when you read together? *(check all that apply)*

- | | |
|---|--|
| <input type="checkbox"/> in a special chair | <input type="checkbox"/> beside an adult on the sofa |
| <input type="checkbox"/> at a table | <input type="checkbox"/> lying in bed at bedtime |
| <input type="checkbox"/> on an adult's lap | <input type="checkbox"/> other |

(7) Do you and your child have a way to sit that lets him/her see and hear better when you read?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> yes | <input type="checkbox"/> no |
|------------------------------|-----------------------------|
- If yes, please describe how you sit _____
- _____
- _____

(8) How does your child feel about being read to? (*check only one*)

_____ dislikes being read to

_____ likes to be read to

_____ often prefers not to be read to

_____ loves to be read to

(9) How would you describe your experiences reading with your child? (*check one*)

_____ enjoyable

_____ frustrating

(10) When someone reads to your child does he/she....? (*check all that apply*)

<i>Item</i>	<i>Yes</i>	<i>No</i>
pick which book to read		
turn book page(s)		
listen quietly		
point to pictures or words in response to questions		
shift gaze from book pictures(s) to adult and from adult back to book pictures		
look at specific picture(s) in book to which adult is pointing		
focus on adult's mouth movements as adult describes picture(s) in the book		
answer questions		
ask questions		
make comments		
retell stories when prompted		
retell stories spontaneously		
try to guess what will happen next		

other (please describe) _____

(11) What does your child do to "tell you" he/she is finished reading?

<i>Item</i>	<i>Yes</i>	<i>No</i>
closes book		
pushes book away		
refuses to look at books with you		
will look, but only for a very short time (less than 1 minute)		
tells you, "no, no more, finished etc"		
almost never indicates they are finished reading		

(12) When you read a book with your child, what do you usually do?

<i>Item</i>	<i>Yes</i>	<i>No</i>
tell the story in your own words		
read the text in the book		
point to the pictures and label them		
point to the words in the book		
ask your child to label the pictures (e.g., What's this?)		
ask your child to point to the pictures (e.g., Where is the...?, Show me the...)		
ask your child what happened in the story		
ask your child what will happen next		
ask your child to explain why something happened		

other (please describe) _____

(13) What does your child do to "tell you" he/she wants to read a book? _____

The following questions focus on your personal reading experiences rather than shared reading experiences with your child.

Your Reading Experiences

(13) How do you feel about reading? (check only one)

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> dislike reading | <input type="checkbox"/> like reading |
| <input type="checkbox"/> often prefer not to read | <input type="checkbox"/> love reading |

(14) How often do you read? (check one)

- | | |
|--|---|
| <input type="checkbox"/> never | <input type="checkbox"/> 3-4 times per week |
| <input type="checkbox"/> less than once a week | <input type="checkbox"/> once a day |
| <input type="checkbox"/> 1-2 times per week | <input type="checkbox"/> many times a day |

Your Family

(15) The person filling out this survey is the child's

- | | |
|--|--|
| <input type="checkbox"/> mother | <input type="checkbox"/> foster parent |
| <input type="checkbox"/> father | <input type="checkbox"/> stepparent |
| <input type="checkbox"/> grandparent | |
| <input type="checkbox"/> other (please describe relationship to child) _____ | |

(16) What is your child's birth date? _____

(17) How would you describe the education of this child's mother?

- | | |
|---|---|
| <input type="checkbox"/> less than 12 th grade | <input type="checkbox"/> some college |
| <input type="checkbox"/> high school graduate | <input type="checkbox"/> college graduate |
| <input type="checkbox"/> community college | <input type="checkbox"/> graduate or professional |
| <input type="checkbox"/> technical school | |

(18) How would you describe the education of this child's father?

- | | |
|---|---|
| <input type="checkbox"/> less than 12 th grade | <input type="checkbox"/> some college |
| <input type="checkbox"/> high school graduate | <input type="checkbox"/> college graduate |
| <input type="checkbox"/> community college | <input type="checkbox"/> graduate or professional |
| <input type="checkbox"/> technical school | |

(19) Your child is:

- | | |
|-------------------------------|---------------------------------|
| <input type="checkbox"/> male | <input type="checkbox"/> female |
|-------------------------------|---------------------------------|

(20) How would you describe the area where you live?

- | | |
|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> rural | <input type="checkbox"/> large city |
| <input type="checkbox"/> suburban | <input type="checkbox"/> small city |

(21) What is the zip code where you live? _____

(22) How would you describe your race/ethnicity?

- | | |
|--|---|
| <input type="checkbox"/> White | <input type="checkbox"/> African-American |
| <input type="checkbox"/> Asian | <input type="checkbox"/> Hispanic |
| <input type="checkbox"/> Other (please describe) _____ | |

APPENDIX C:

TABLE 1 – ANSWERS FROM NEIGHBORHOOD PLAYGROUP PARENTS

Parent	Question 1	Question 2	Question 3	Question 4
1	None	N/A	Felt choices were thorough	N/A
2	Some questions have only yes/no where there are multiple answers for kiddies this age	Using always/ sometimes/ never etc.	Yes	See answer to question 2
3	Just the one about whether my child watches my lips ... I've never even thought to look/watch for it	No	Yes	Whether there are children's books without or with only a few pictures in the house (e.g., early chapter books) Whether a child "reads" books to themselves – flipping pages and possibly even telling a story aloud while doing so
4	Number 7 is a bit confusing. Number 15 is not confusing, but see my comments below.	7 – I understand the question, but it would be a bit difficult to describe in words how your child is positioned when you are reading to them. 15 – for "other" state "please describe relationship to the child."	No; I believe the answer choices were thorough.	Please see number 3.

APPENDIX D:

TABLE 2 – ANSWERS FROM CHARTER SCHOOL PARENTS

Parent	Question 1	Question 2	Question 3	Question 4
1	None of the questions were confusing.	No. Not at this time.	None that I can think of.	N/A
2	None	I found them simple	I don't think so	
3	None of the questions were confusing.	No, they were understandable.	No	N/A
4	None	No	No	

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