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# Oral and written narrative production in children who are deaf and hard of hearing

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**ORAL AND WRITTEN NARRATIVE PRODUCTION IN CHILDREN  
WHO ARE DEAF AND HARD OF HEARING**

**by**

**Nicole Elizabeth Bernaix**

**An Independent Study  
submitted in partial fulfillment of the  
requirements for the degree of:**

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**Approved by:  
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*Abstract: This paper discusses whether or not children who are deaf and hard of hearing at the early elementary school level have difficulties producing oral and written narratives.*

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## Introduction

Why are the potential deficits in the narrative production of children who are deaf and hard of hearing relevant? The reason is these skills pervade our everyday lives. For example, narratives are used in the sharing of past experiences, recounting events or expressing our hopes and plans for the future. Narratives enable us to make and maintain relationships by disclosing stories about ourselves to those around us. According to research done by Nikolopoulos, Lloyd, Starczewski, and Gallaway (2003) narrative skills constitute an important area of linguistic and communicative development. For the developing child, narratives provide a bridge between the highly conceptualized language of home and the decontextualized language of educational settings from an early age. As a result, narrative ability is very important for literacy skills and academic performance. In research done by, Heilmann, Miller, and Nockerts (2010), they talk about how being a proficient narrator is a skill needed to express one's intentions and effectively participate in classroom activities. In addition, several decades of research have documented the strong link between children's oral narrative skills and broader curricular requirements. Research on monolingual English-speaking children has documented that children's oral narrative skills are predictive of later reading outcomes (Bishop & Edmundson, 1987; Dickinson & McCabe, 2001; Griffin, Hemphill, Camp, & Wolf, 2004; Hemphill & Snow, 1996; Roth, Speece, Cooper, & de la Paz, 1996; Snow, 1983; Snow, Dickinson, Jennings, & Purves, 1991; Tabors, Snow, & Dickinson, 2001). Furthermore, according to Crosson and Geers, narrative ability is an important predictor of reading comprehension ability in children who are deaf and narrative skills are critical for successful school achievement because almost all teacher instruction and written materials are presented in language beyond the sentence level (2001). Additional studies have documented that children's early narrative competence is related to broader academic outcomes

(e.g., Fazio, Naremore, & Connell, 1996; O’Neill, Pearce, & Pick, 2004). Fazio and colleagues found that oral narrative skills were one of the strongest predictors for whether or not a child would later require academic remediation, while O’Neill et al. identified a strong relationship between young children’s oral narrative skills and later mathematical ability. There is a general consensus in the field that oral narrative skills may play a key role in developing the foundation for higher level academic skills. If narrative abilities in children are a good indicator of future academic and social success, it is important to identify any potential narrative deficits in children who are deaf and hard of hearing. By identifying deficits, professionals can provide additional support in specific areas to aid in a child’s narrative skills which will improve their future success.

### **How Narrative Abilities Were Examined**

In majority of articles about the narrative abilities of children who are deaf and hard of hearing, the examiners evaluated a child’s narrative by having them tell a story given a certain number of picture cards in a particular order and having them develop a narrative from it. Picture cards were used to elicit the narrative and to control speech intelligibility factors. In some of the studies, the examiner left all of the cards out in an order and in other studies the examiner showed the child all of the picture cards and then laid each one down one at a time as the child wrote or orally presented the narrative.

For example, in a research study conducted by Soares, Goulart, and Chiari (2010), a total of forty-two children, both female and male, ages five to eleven were included. Twenty-one of the students had moderate to profound bilateral neurosensory hearing impairment. All of the twenty-one children presented onset of hearing loss prior to the age of three years, used individual hearing aids and largely communicated using oral linguistic code. The control group

in this study included twenty-one children with typical hearing with no communication or learning disorders, and they were all matched according to age, gender, schooling level and school type (public or private). Once all of the subjects were chosen, the researchers elicited an oral narrative from each of them individually by showing them a set of pictures from, “The Dog’s Story,” by Le Boeuf, on a single board. The pictures were properly arranged in a sequence and the evaluator told the children that the pictures made a story. The children were then asked to think about how they would tell the story presented in the pictures and were asked to come up with a title for the story. Each one of the subjects were told to take their time, to become familiar with the pictures before starting the narrative and were also allowed to make any visual contacts and touch the board of pictures. The analyses of the narratives were done by two speech language pathologists who had at least five years of experience. They examined the narratives based on length, structure and cohesion measurements. Narrative length was measured by counting the total number of propositions. A proposition is the part of the meaning of a clause or sentence that is constant, despite changes in things such as the voice or illocutionary force of the clause. The propositions within the narrative were categorized with regard to frequency of orientation, complicating actions, character reactions and resolution. To help with further understanding, I will deliver more information and an example of each of these categories. Orientation was measured by the propositions referring to setting and description of objects, characters and actions (a boy meets a lost dog on the street and takes it home and hides it in the closet). Complicating actions were measured by propositions referring to the sequence of events (a mother sees a dog in the closet and asks the boy what it is doing there). The character’s reaction was measured by propositions referring to the characters’ reactions to the events (the boy’s reaction when he found the dog or the mother’s reaction when she found the dog in the

closet); and lastly, the resolution was measured by the sequence of propositions after the narrative reached its culminating point (the boy's mother allows him to keep the dog). Looking back at the narrative length, it was also measured by the verbs and plots that were produced during each oral narrative. The narrative structure was measured on the basis of syntax elements and organization of all the story items and was evaluated on, orientation, complicating actions, character's reactions, and the resolution. Narrative cohesion was measured by summing the proposition scores with the use of these elements. The actual overall scores for each group were determined by summing the scores for narrative structure and cohesion measurement for each of the children in the study. In order to compare the results between the group of children with hearing loss and the group of children with typical hearing, statistical analysis was done by using the Mann-Whitney test.

### **Examining Results: Oral and Written Narratives**

Before examining the results of the study and comparing the children with typical hearing to the children with hearing loss, we must understand what typical narrative development looks like. Within the research done by Soares, Goulart and Chiari (2010) a longitudinal study was done to investigate narrative development in two children from the age of two to five years of age, without any history of language impairment. When the children were two, they did not produce any narratives and only used temporal expressions in their vocabulary, along with the referent "now". By the age of three, they started to use temporal relationships and at the age of three to four years, they started to develop stories in their discourse, with markers such as "once upon a time" (to begin a narrative); "so," "then" and "after" (narrative operators); and "end of the story" and "happily ever after" (story closure). When the children were four years old, they used "when" and direct speech. At this age, according to the author, the quality of the discourse

improves, but lack of cohesion may compromise the narrative quality. By the age of five years, the children in the study became narrators and enunciators, and were able to communicate new information to adults. It is important to recognize how narrative development occurs in children with typical hearing as it generally happens within the first five years of life. Children who are deaf and hard of hearing do not have proper access to sounds needed to understand speech and language, so in theory there should be a delay in the development of narratives in children who are deaf and hard of hearing, which is why this literature review focuses on early elementary school-aged children.

The article explains that children who are deaf and hard of hearing more often produce oral narratives using more picture description and details, which increases the number of orientation-related propositions, but in turn it could interfere with the interlocutor's understanding of the narrative.

When the results of the two groups were compared, the examiners found statistically significant differences in most of the features used to analyze narrative competence, except for the number of propositions, reference score and the use of resolution. Overall, when it came to narrative structure, the children with hearing loss had statistically significant lower performance scores than their typically hearing peers.

Furthermore, when looking at narrative production studies of children who are deaf and hard of hearing compared to children with typical hearing, it shows that children with typical hearing revealed classic patterns that included a high point, a resolution and one or more evaluative statements. They also achieved cohesion through correct use of both conjunctions and referents. When the same study was performed on children who are deaf or hard of hearing who had above average speech perception, the results showed their narratives were similar to their

hearing peers in regards to structure and the use of referents, but they lacked subordinate conjunctions.

When looking at written narrative productions of children who are deaf and hard of hearing compared to their typical hearing peers, the children with hearing loss wrote shorter sentences that were less structurally variable and frequently incomplete. They also frequently omitted adverbs and conjunctions necessary for fluent writing. Through the current research a correlation between narratives and reading comprehension abilities has been shown. Furthermore, narrative ability scores are correlated significantly with speech perception, language syntax and language test scores (Crosson & Geers, 2001).

### **Reasons for Narrative Deficits**

There are few studies in the literature analyzing narratives of children who are deaf and hard of hearing. There are several individual components, such as language, that come together to form a cohesive narrative and since little research has been done on narratives, it is important to examine the individual parts of a narrative in order to uncover where breakdowns may occur in children who are deaf and hard of hearing. According to the study, the results from comparing narrative performance between children who are deaf and hard of hearing and children who have typical hearing supports the existence of an association between hearing and language for the development of narrative competence. The article states: the lower scores for narrative structure among the children who are deaf and hard of hearing in this study can be explained by delayed language development due to sensory deficiency, as reported in other studies, given that the subjects studied were five years of age and over.

Furthermore, according to Soares, Goulart, Chiari, the interplay of hearing and language has a key role in ensuring quality of oral narrative as an expression of thought. Narratives

develop with early language acquisition during mother-child, social and family interactions, as well as school. Narrative skills improve as children grow and develop and can be influenced by several cultural and linguistic factors (2010).

According to research done by Paul and Smith (1993), the ability to tell a story involves a number of higher level language and cognitive skills. These skills include the ability to sequence events, to create a cohesive text through the use of explicit linguistic markers, to use precise vocabulary, to convey ideas without extralinguistic support, to understand cause-effect relationships, and to structure the narration along the lines of universal story schemata that aid in the listener in comprehending the tale. If Paul and Smith are correct in stating that the lower scores for narrative structure among the children who are deaf and hard of hearing in this study can be explained by delayed language development, then the authors are accurate in stating the deficits seen in narrative skills in the language delayed group is not just an outcome of their poor syntax and morphology, it goes beyond the production of grammatical sentences. The narrative deficits in Paul and Smith's study indicate that the language delayed children also have trouble encoding, organizing, and linking propositions and in retrieving precise and diverse words from their lexicons.

It is important to look at the language of children who are prelingually deaf and have hearing parents who are orally trained. According to Gray and Hosie (1996), this group usually fails to attain proficiency in the language of the hearing people around them, in either its spoken or its written form. Children who are deaf and have difficulties with written language obviously present a major obstacle to communication and to the investigation of the mental processes.

The research done by Gray and Hosie (1996) stated that children who are prelingually deaf and were raised in a spoken language environment appear to have difficulty understanding

and retelling stories. There are multiple components that can contribute to this difficulty. For example, story understanding may be impaired by lack of background knowledge and vocabulary; the lack of access to the phonology of spoken language may reduce the capacity of short-term or working memory, preventing the child from retaining story events and organizing them into a meaningful interpretation. It has also been suggested that children who are deaf may lack story schemata and so cannot organize the incoming material. Some research indicates that children who are deaf and hard of hearing can have excellent story production when elicited and evaluated by sensitive methods that place minimal emphasis upon the English language. For the purpose of this literature review, I will be focusing on articles that place more emphasis on the English language since the review is on children from an oral background. The same article argues that to understand such apparent discrepancies, story understanding must be viewed within a broader perspective, including considerations of theory of mind and early socialization. When children with typical hearing often have stories read to them in the early years of life, it becomes such a familiar aspect of their everyday life and it is easy to overlook the complexity of the processes by which the listener becomes involved in the action, builds up a growing appreciation for what is going on, and afterwards attempts to recall or retell the story. Children with hearing loss do not able to overlook the complexity of the process due to poor access to sound in the beginning years of life. Some aspects of story understanding extend far beyond the exercise of basic cognitive functions such as short-term or working memory, or even of language and phonology. In order to fully understand and appreciate a story, the person must view the developing action from the different points of view of the story characters and must empathize with the characters varying motives. Through the process of learning how to comprehend a

narrative, a child acquires other abilities. Some of the abilities are cognitive, but others are acquired as aspects of social, emotional, and empathetic development.

Literacy plays a major role when assessing deaf children's narrative abilities because being able to read and comprehend is what allows the child to learn how to produce a narrative. According to Carroll, 1974; p. 172, print "makes possible a realm of abstraction that could hardly be provided by any other means." The power of literacy frees a child from confinement to what can be immediately seen and touched and permits consideration of (not only) the real world beyond the child's immediate environment but also the hypothetical and symbolic. Gray and Hosie also state that children who are prelingually deaf perform at a level well below their typically hearing peers on reading tests. As the children with hearing loss get older the differential keeps increasing on hearing-standardized tests and eventually their developmental trajectory of performance typically levels off at a plateau reading age of 8 ½ years (Conrad, 1979; Trybus & Karchmer, 1977; Waters & Doehring, 1990). Assuming that a child who is deaf and hard of hearing generally plateaus at a reading age of 8 ½ years, it is more clear as to why children who are deaf or hard of hearing have a deficit when producing narratives. Literacy ability plays a huge role in one's ability to be able to understand a narrative and learn the parts for future construction of a narrative.

It is important to look at the breakdown in reading development since being able to read and comprehend what an individual is reading is what allows the child to learn how to produce oral and written narratives. When discussing reading abilities, one must understand the complexity of the process, with decoding, syntactic, and semantic aspects. There is an overwhelming body of evidence to show that an important aspect of written word identification is something akin to a physically inaudible "sounding out" of the letters (or combination of

letters) making up a written word. By means of a transcoding these visual fragments into phonological fragments, followed by a rather mysterious “blending” process, the spoken word is assembled (Cossu, Rosini, & Marshal, 1993). “There is good reason to suppose that in hearing people, written English comes to speak with an “inner voice”, which acts as a sole, an alternative or a synergistic route to meaning, depending upon the stage of development of the child and the familiarity of the text” (Gray, 1995). According to King & Quigley (1985), one of the most salient features of the deaf child’s reading performance profile is a marked difficulty with the syntactic rules of English. Even though there is a restriction when it comes to the vocabulary and it is understandable in deaf children, many achieve a good level of automaticity at the word-decoding level.

Another aspect that is crucial to producing appropriate oral and written narratives is theory of mind. According to Baron-Cohen, Tager-Flusberg, & Cohen (2000), the ability to recognize people’s inner mental states of mistaken memory, foiled intention, fantasy, or false belief, while using these inferred psychological attributes to understand and predict behavior, is ‘one of the quintessential abilities that makes us human’. Another name for this ability is known as Theory of Mind (ToM) and is critical in order to produce narratives. Without theory of mind an individual cannot engage in perspective taking, so they are unable to perceive what a character or person in their story may feel or do and understand why they may feel or act in that manner. Peterson (2004) found that peer interactions and early fluent communication with peers and family (signed or spoken) facilitates the growth of ToM and social cognition in language. This was evidenced by research discovering that children who are deaf and hard of hearing that have delayed access to language can be as delayed in ToM development as children with autism. According to the same research done by Peterson, only a few of the oral deaf children of hearing

parents under age 7 performed as well as hearing 4-year-olds on either verbal or nonverbal false belief task. This proves there is a significant delay in ToM, which demonstrates why deaf and hard of hearing children have a delay in their narrative production abilities. Furthermore, the research indicates these findings are of children with hearing losses of only moderate to severe rather than profound. The degree of hearing loss plays a significant role, although even with moderate hearing loss there can still be several years of delayed ToM. Peterson stated that children with severe to profound hearing loss experienced a greater delay in access to language that may have affected their ToM development and/or performance” (2004). This also brings up the language delay factor negatively affecting narrative production in children who are deaf and hard of hearing. The body of research on ToM development in deaf children suggests that provided a child’s hearing loss is severe to profound, and provided that no other family member is a fluent native signer, a lag of some 3 to 5 years behind normally hearing children is apt to be observed. Theory of mind delay is proven to negatively impact the narrative production abilities of children who are deaf or hard of hearing.

### **Ideas for Future Study**

Within the article by Soares, Goulart, and Chiari (2010), it states that no previous studies have investigated the association between narrative performance and school type, with school type being private or public. This finding suggests that more research needs to be done among hearing-impaired individuals in order to provide more input on social and environmental factors that contribute towards the development of children and their communication skills, as reported in the literature. Also, according to Nikolopoulos and Lloyd, there is very little research that has been conducted with children who are deaf and this research is concerned only with relatively

old children with hearing aids. More research needs to be done on younger children with hearing loss in order to see the beginning stages of narrative development and how it progresses.

The effects of role-play on narrative development would be another avenue for future research to be done. According to Pakulski and Kaderavek (2003), role-playing can be a vehicle through which the comprehension of story grammar elements can be studied and enhanced in children who are deaf and hard of hearing. The authors state that children who have typical hearing gradually expand their prior knowledge by life experience and incidental learning through visual, auditory and tactile-kinesthetic and olfactory sensations and vicariously learning through reading, oral/signed stories, television, and movies. Children who are deaf or hard of hearing may abstract qualitatively and quantitatively different information from their life experiences resulting in gaps in their “prior knowledge base” and metacognition. The authors believe role-play is own way to teach the structural elements or story grammar and provide cues about inferential information embedded in simple storybooks in a contextually relevant way (2003). Children who are deaf or hard of hearing need to be taught certain things, like structural elements explicitly and visual cues and aids help the children further understand, so the idea of using role-play to assist in narrative development seems plausible and merits more consideration in the field of deaf education.

### **Conclusion**

Narrative ability and development is a large indicator of future academic and social success. Children who are deaf or hard of hearing are delayed in narrative development for multiple reasons, which include, but are not limited to language, ToM, metacognition, organizational skills and propositions. In the field of deaf education more research and attention needs to be paid to the area of narrative production in children, so educators can develop new

strategies to aid in the development of children's narrative skills. By breaking narrative production down into parts and working with children who are deaf and hard of hearing in those specific areas, it will not only improve their narrative production, it will also improve multiple skills and set the child up for a more successful social and academic future.

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