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THE PERCEIVED BENEFTS AND DRAWBACKS OF INCLUDING HEARING PEERS IN LISTENING AND SPOKEN LANGUAGE PRESCHOOL PROGRAMS FOR STUDENTS WHO ARE DEAF OR HARD OF HEARING

By

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This study examines teachers' perceptions of the benefits and drawbacks of including or excluding peers with typical hearing in preschool programs for students who are deaf or hard of hearing.

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Disclosures

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Introduction

Historically speaking, learning to listen and talk was an unrealistic goal for many children who were deaf or hard of hearing. However over the past 20 years, changes in the field of deaf education have made this goal more approachable for students. According to Moog and Stein (2008) advances in technology, coupled with specific research on how to educate children with hearing loss has led to increased achievement by children who are deaf or hard of hearing.

Arguably, the three most influential factors responsible for this change were "(a) newborn screenings and early intervention (b) advances in hearing technology and (c) innovations in teaching that capitalize on the first two" (Moog & Stein, p. 133). Today, many children with hearing loss who are fitted with appropriate listening devices at young ages can learn to use their aided hearing well enough to use listening and spoken language for communication. With that being said, simply placing listening devices on a child will not guarantee that the child will be able to process the sounds associated with spoken language in the same manner that a child with typical hearing can. Even with improved technology, "hearing aids and cochlear implants do not yet provide a signal that is complete enough for most children with severe and profound hearing loss to learn to talk without specific teaching" (Moog & Stein, p.134).

Due to delayed auditory input as compared to a child with typical hearing, many children who are deaf or hard of hearing require direct, explicit, and objective-driven instruction to learn to listen and talk. While several educational approaches for teaching students who are deaf or hard of hearing exist, the current study focuses on a listening and spoken language approach. This approach, also known as auditory-oral education, will be referred to as listening and spoken language for the duration of this paper. The ultimate goal of listening and spoken language education is for children to learn to listen and communicate using spoken language. While the

goals remain the same, not all listening and spoken language programs are organized in the same way. For example, "some have classes only for children with hearing loss, whereas some include children with typical hearing; some programs are located in special schools . . . and others provide individual therapy for children who are completely mainstreamed" (Moog & Stein, 2008, p. 134). Many factors, such as the location and population of the students served, differentiate these programs, making them unique learning environments. The specific factor that will be investigated in this study is not where the program is located, but whether or not the program includes peers with typical hearing and in what ways.

Often when peers with typical hearing are integrated into a listening and spoken language preschool program, the organization is referred to as reverse inclusion or reverse mainstreaming. This differs in subtle but significant ways from mainstreaming or inclusion. Inclusion refers to educating children with disabilities in the regular education classroom alongside their peers, and providing them with the necessary supports to be successful. Mainstreaming refers to the practice of removing children from their special education classes for part of the day and placing them in general education classes (McLean & Hanline, 1990). Children are given access to the general education environment only when they are able to function on the same level without instructional modifications or support services. Contrastingly, in reverse mainstreaming, a relatively small group of children with typical development are added to a specialized program for children with disabilities (Rafferty, Boettcher, & Griffin, 2001). The reasons for this type of set-up vary based on the type of disability. In the realm of deaf education, this would mean that a group of children with typical hearing would be integrated into a program for students who are deaf or hard of hearing. In these environments, the students with typical hearing are referred to as hearing peers. They provide speech and language models for the children with hearing loss.

Anytime the education of children with differing levels of abilities is discussed, it is important to consider how the children will interact. Research has shown that simply placing students with and without disabilities together in classrooms is not sufficient enough to cultivate interactions between them and to promote the benefits of integration (Bobzien et al., 2013). Teachers take on the primary role in providing meaningful opportunities for students with and without disabilities to interact and learn from each other. It is believed that this same practice stands true for students with hearing loss and their peers. When students who are deaf or hard of hearing are placed in environments with peers who have typical hearing, the classroom teacher "is a crucial part of scaffolding the interactions" (Richels et al., 2015, p. 2). The teacher must make a conscious and deliberate effort to utilize hearing peers in a way that is beneficial to the students who are deaf or hard of hearing.

Unfortunately, currently there is a paucity of research that examines the effects of using hearing peers to foster language development in preschoolers with hearing loss. Given the paucity of research and the effort it takes on the teacher's part to successfully utilize hearing peers, research is warranted to determine teachers' perspectives on this practice. The current study aims to shed some light on this topic and to answer the following questions:

1. What are the benefits of incorporating hearing peers in a listening and spoken language preschool classroom for students who are deaf or hard of hearing?

2. What are the challenges?

3. What are the benefits of not including students with typical hearing?

What We Know: Typical Preschoolers, Peers, and Language Development

Before diving in to the findings on how hearing peers can impact language growth in children who are deaf or hard of hearing, it is first important to review the research on how

preschoolers with typical language development can be impacted by their peers. According to

Henry and Rickman (2007), it has been documented that the "academic achievement of children

and adolescents can be positively associated with the skills and competencies of peers within

their classrooms" (as cited in Justice, Petscher, Schatschneider, & Mashburn, 2011, p. 1765).

When looking specifically at the preschool population, Henry and Rickman (2007) found that

peer effects or "positive, addictive effects on the growth of the child's skills," were present in

measures of student cognitive abilities, preliteracy abilities, and receptive vocabularies (as cited

in Mashburn, Justice, Downer, & Pianta, 2009, p. 689). Advancing on this research, Justice,

Mashburn, Pianta, and Downer (2009) conducted a study analyzing the language abilities of

2,966 children from 704 pre-k classrooms. Four children were chosen from each classroom.

These students were given a battery of standardized tests to assess their receptive and expressive

language abilities in the fall and spring of the preschool year. Using this data, measures of peer

expressive language abilities were computed at the child level and the classroom level. The

results indicated that peers' expressive language skills contributed to children's receptive and

expressive language achievements in preschool. This suggests that exposure to peers with strong

language skills may provide students with an "important resource for language learning" in

classrooms that utilize effective behavior management (Justice, Mashburn, Pianta, & Downer,

2009, p. 700). It is further suggested that consideration of peer language abilities and providing

opportunities for peer interaction may be contributing factors of successful language intervention

strategies.

In 2011, Justice, Mashburn, Petscher, and Schatschneider followed up this study with

another study in attempt to replicate their findings. The new study analyzed data on 338

preschoolers from 49 preschool classrooms. Despite the smaller sample size, the researchers

were able to gather more information about peer language skills due to a higher number of children from each classroom being included in the class measure. In the previous study, the class measure was based off of 4 children. In this study, researchers were able to collect data from between 5-8 students in each class. Comparing data collected during the fall and spring of the same academic year, the researchers found that peer effects again appeared to operate within preschool classrooms. Specifically, the data suggested that preschool students' language growth during an academic year was associated with the average level of language skills exhibited by their classmates. This relationship was the strongest for students who entered preschool with lower language abilities. In other words, especially for children who enter preschool with lower language abilities, the language skills of the other children in the classroom can impact a child's language growth.

Using Peers with Typical Development to Aid in the Education of Students with Language Impairments

While little research has been done on the benefits and challenges of using hearing peers in deaf education preschool programs, there have been a number of studies demonstrating that peers with typical development can aid in the teaching of students with disabilities in general, and that peer interactions are important in educational settings. This has been demonstrated for children with specific language impairment (SLI). While a SLI diagnosis is different from a diagnosis of hearing loss, children with SLI often face similar challenges in learning language. Similar to children with hearing loss, children with SLI may have deficits in organizing information, extracting patterns, and abstracting rules that contribute to deficits in their linguistic abilities (Creaghead, 1991, as cited in Robertson & Weismer, 1997). A study conducted by Robertson and Weismer (1997) found that structured interaction with peers who had typical development helped promote language development of play scripts in children with SLI. In the study, a script

was defined as the "cognitive framework that represents the cumulative body of knowledge that a child has acquired for a particular play event" (Robertson & Weismer, p. 50). This framework includes a child's ability to understand and use the language and behaviors that are associated with play events. This ability "to construct and retrieve scripts efficiently provides an essential foundation for furthering development in the social, cognitive, and linguistic domains" (Creaghead & Tattershall, 1985; Fivush & Slackman, 1986; Lund & Duchan, 1988; Nelson & Gruendel, 1986, as cited in Robertson & Weismer, 1997).

Robertson and Weismer were particularly interested in 4 variables included in the scripts: 1) number of words in the script report, 2) number of different words in the scripts, 3) number of play-theme-related acts, and 4) use of linguistic markers. The researchers aimed to determine how exposing children with SLI to children with typical development during play could impact these areas for the children with SLI. The results of the study showed that children with SLI who interacted and played with typically developing peers showed significant increases in all 4 of the variables. These results were not true for children with SLI in the study that did not have the opportunity to interact with peers with typical development (the control group). While some of the participants in the control group may have shown some improvement on individual variables, no child in the control group showed improvement on more than one variable. Additionally, the improvements that the children in the control group did make were not comparable to those of the children who interacted with peers with typical development. These results overall provide evidence for the idea that play interactions with peer models can lead to positive increases in play scripts in children with SLI. Although much more research is needed to generalize this finding to children with other disabilities, this finding does support the notion that interactions

with students who have typical development can be beneficial to students with language impairments.

Hearing Peers for Students who are Deaf or Hard of Hearing

As mentioned, there is a huge scarcity of research on the direct impact of using peers with typical hearing as models in a classroom for students who are deaf or hard of hearing. To date, Richels et al. (2015) are the only researchers who have produced research on this topic. They aimed to examine if a structured intervention lead by a teacher and a peer with typical hearing could use language modeling and expansion techniques to teach preschool children with hearing loss to respond to an action *wh-* question using specific grammatical forms.

Three children with varying degrees of hearing loss and one child with typical hearing participated in the study. The children who were deaf or hard of hearing all attended a listening and spoken language preschool program. Prior to the intervention phase of the study, it was determined that each of the children with hearing loss displayed difficulties answering *wh-*questions when asked to described actions in pictures. These students were able to answer other *wh-*questions, (e.g., "Where is he/she/that?" or "Who is this?") but they were not able to answer, "What is he/she/they doing?" questions. After being assessed by speech-language pathologists, individual target grammatical forms were selected for the 3 children with hearing loss based on their current functioning levels. For all of the children, the target form included the use of a pronoun, the progressive form of a verb, and an object of the verb.

To collect baseline data on the students with hearing loss, each child was shown 5 photos and was asked to identify what the subject was doing in the picture. The baseline data for all 3 students with hearing loss was no correct responses. During the intervention phrase of the study, each child with hearing loss experienced several 6-minute teaching sessions with a teacher and

the hearing peer. The students again were shown 5 picture cards. After each viewing, the hearing peer was asked to describe what was happening in the picture first, and then the child with hearing loss was asked to do the same. The hearing peer "acted as a syntactic priming model for the child with hearing loss" (Richels et al., p.5). If either child gave an incorrect response, the teacher would use a language-model or expansion technique to reinforce the target grammatical form. Following the picture identification, the children were asked to recreate the action shown in the picture using manipulatives.

Two days following the intervention phase, a generalization probe using 5 unfamiliar pictures was administered to the students with hearing loss. All 3 of the students increased their levels of target grammatical form use when compared to their individual baseline means. Two of the students produced correct target grammatical forms for 4 of the 5 unfamiliar pictures, and one of the students correctly produced all 5 targets. To take the data even further, 3 maintenance probes including 5 unfamiliar pictures per student were administered in the 6 to 10 weeks following the intervention phase. All 3 children were able to maintain the skills they learned during the intervention phase. One child produced a mean of 3 target grammatical forms in the 3 maintenance probes, and the 2 other students produced all 5 grammatical forms correctly in all 3 of the maintenance probes. This finding provides support for the notion that hearing peers can be used as language models to successfully teach children with hearing loss to learn grammatical forms.

While this is a positive finding, it must be noted that only 3 children with hearing loss participated in this study. A larger sample of children would be needed in order to strengthen the results enough to be generalized across all children with hearing loss. Additionally, Richels and his colleagues noted that simply placing students with and without hearing loss in a classroom is

not enough to promote the benefits of integration. As evidenced in their work, teachers must be deliberative in how they "structure the social and communicative environment for young children with hearing loss" (Raver, Bobzien, Richels, Hester, & Anthony, 2013, as cited in Richels et al., 2015, p. 9). While more research needs to be done in order to yield information on which structured environments are most successful, this study provides a step in the right direction of finding more information on how using hearing peers can aid in the education of children with hearing loss.

Furthermore, one aspect of the research conducted by Richels and his colleagues (2015) that is of particular interest to the current study is how the teacher viewed the intervention period. At the conclusion of the study, the teacher involved and two other paraprofessionals in the classroom completed a 16-question survey regarding their satisfaction with the intervention. The teachers' responses indicated that they believed the intervention was worth the additional time required of them, and that the sessions appeared to improve the children's self-confidence. While this is only the opinion of three professionals, it provides insight into how teachers may feel in similar situations.

Additionally, Dean and Nettles (1987), former teachers at the Houston School for the Deaf, published research detailing their experiences at the Houston School for the Deaf, another listening and spoken language program organized as a reverse mainstream environment. The researchers noted that after evaluating the hearing peers in the areas of speech and language, the ideal situation was to place 2 hearing peers in a class of 3 to 5 students with hearing loss. In this situation, the children with typical hearing provide constant reminders to the teachers of how typical speech and language develop in young children. Additionally, the hearing peers act as role models for the students with hearing loss. The researchers cite "turn taking, game playing. . .

proper listening behavior, . . . language-related behaviors" and development of rhythm skills all as examples of the skills that the hearing peers model for the students who are deaf or hard of hearing (p. 29). Furthermore, they note that "appropriate actions and reactions related to social practices in group settings are continuously modeled" by the students with typical hearing (p. 29). Finally, the researchers state that it is very difficult to duplicate the skills that children can gain through peer interaction. Reverse mainstreaming environments can provide opportunities for students who are deaf or hard of hearing to develop these skills in a more natural manner.

Other benefits have been shown to exist for children who are deaf or hard of hearing as a result of being educated with hearing peers in a reverse mainstreaming environment. Brackett and Henniges (1976) note that children who were deaf or hard of hearing who had some degree of linguistic competence tended to interact frequently with their peers with typical hearing. In return, this interaction appeared to aid in the linguistic growth of the children with hearing loss. Additionally, Weinstein (1968) observed that children with hearing loss attending the New York City School for the Deaf, a reverse mainstreaming program, appeared to become more self-sufficient as a result of being educated in the reverse mainstreaming environment. While this data is old, it is the only research this examiner found specific to children who are deaf or hard of hearing being educated in reverse mainstreaming environments.

Parents' Perceptions

The current study focuses on teachers' perceptions, as teachers play a pivotal role in early childhood education for preschoolers who are deaf or hard of hearing. As mentioned, there are currently no other known studies examining teachers' perceptions of using hearing peers in reverse mainstreaming preschool programs for children who are deaf or hard of hearing, and thus the current study will not have any previous studies with which to compare results. There has

however been some research focusing on parents' perceptions of educating children with and without disabilities in integrated environments that can provide some insight into how parents perceive integrated education. While parents undoubtedly have different experiences than teachers, their opinions may provide some insight into possible benefits and challenges.

Dean and Nettles (1997) believed that the benefits of reverse mainstreaming were great for children who were deaf or hard of hearing, but the benefits were not as obvious for the children with typical hearing. The researchers were particularly interested in the perspectives of parents of children with typical hearing, and how the reverse mainstreaming environment impacted their children. In an attempt to analyze the effects of reverse mainstreaming on children with typical hearing, the researchers sent a questionnaire to parents of hearing peers enrolled at the Houston School for Deaf Children. The questionnaire consisted of 10 statements pertaining to "child interaction skills, social/emotional development, academic growth, and student attitude towards" the students who were deaf or hard of hearing (p. 31) Parents were asked to rate the degree to which they agreed or disagreed with certain statements. A response scale of 1-5 was used where 1 meant the parent strongly disagreed and 5 meant the parent strongly agreed.

Parents' overall responses indicated that they were pleased with the program. In terms of emotional needs, the average score of 4 indicated that parents felt their children's emotional needs were being met. Parents also felt that their children's needs were being met in academic areas. Overall, all parents felt that their children benefited from being included in the program (average score of a 5). Several factors were identified by parents as the most important aspects of their children's education. Some parents noted that the interactions with children who were deaf or hard of hearing helped their children develop socially. Other parents noted that the cost of the program greatly influenced their decision to send their child to the Houston School for Deaf

Children. However, the most reported influential reasons that parents chose the school for their children's education were student/teacher ratio and quality of the educational program.

While the results were overall positive, one set of parents did note instances in which their daughter seemed to adopt some of the gestural forms of communication that the students with hearing loss sometimes used. Dean and Nettles regard this instance as an illustration of the importance in having at least 2 hearing peers in each classroom. Furthermore, it is a reminder that the responsibility to foster speech and language development should be in the hands of the teacher.

Also, a study done by Rafferty, Boettcher and Griffin (2001) evaluated what parents of preschool students with and without disabilities perceive about the benefits and risks of reverse inclusion. The parents were asked to fill out a survey indicating their level of agreement with statements describing potential benefits and risk of reverse inclusion to students with and without disabilities. The results showed that both parents of preschoolers with disabilities and parents of preschoolers without disabilities generally agreed that inclusion in reverse mainstream programs would have a positive impact on students both with disabilities and without disabilities. For students with disabilities, the reverse mainstreaming setting would provide them with more opportunities to learn from children with typical development, and promote acceptance of children with disabilities in the community. For students without disabilities, nearly all the parents agreed that reverse mainstreaming could help children with typical development to develop compassion towards others and understand differences in people. The only statistically significant differences between parents of students with and without disabilities was that parents of students with disabilities were less likely to agree that inclusion could have a negative impact on the emotional development of the students with disabilities. Similarly, on average, all the

parents disagreed that inclusion would negatively impact students with and without disabilities. However, some parents of children without disabilities expressed concerns that the students with disabilities could present a number of problem behaviors, and that the children with typical development may learn negative behaviors. Despite this, both groups of parents strongly favored the inclusion model, and many of the same benefits as seen in Nettles and Dean's study were evidenced.

Current Study

Given the research presented, it is clear that peers with typical development can have positive impacts on preschoolers with disabilities. This is not to say that typically developing peers would be beneficial for all groups of children with disabilities or that integrated preschools would benefit all children with hearing loss. This research simply provides evidence that using typically developing peers as models to help students with disabilities can aid in the development of students with disabilities. Much more research is needed on this topic, specifically in regards to children with hearing loss, in order to concretely generalize the findings. As such, the current study aims to shed some light on possible benefits and drawbacks of including peers with typical hearing in preschool programs for students who are deaf or hard of hearing via the lens of teacher perceptions.

Purpose of Study

As mentioned, some listening and spoken language preschool programs for students who are deaf or hard of hearing include hearing peers, while others do not. Currently, there is a paucity of empirical data available on this practice in schools for children who are deaf or hard of hearing. To this examiner's knowledge, there have been no studies looking at how this practice impacts teachers. The purpose of the current study is to examine the perceived benefits

and drawbacks of including children with typical hearing in listening and spoken language preschool programs for students who are deaf or hard of hearing via the lens of teacher perceptions. Researching this topic will help to build a foundation of knowledge about how including or excluding hearing peers can affect the education of students who are deaf or hard of hearing.

Methods

Participants

A total of 19 current or former preschool teachers of the deaf (TODs) participated in this study. All the participants had experience working at a school or program that belongs to OPTION Schools Inc., a non-profit organization comprised of programs and schools that focus on listening and spoken language to educate children who are deaf or hard of hearing. In total, the participants were recruited from 10 different programs. Fourteen participants had experience working in a program that included hearing peers, and 8 participants had experience working in a program that did not include hearing peers. Two of the participants had experience working in both types of settings. Professionals working at a program that incorporated American Sign Language were excluded from this study. The age of students taught by the teachers ranged from 2-year-olds to 7-year-olds, with the average range of students taught falling between the ages of 3 and 5. Only 2 participants noted that they taught students outside of the 3 to 5 age range.

All participation in this study was completely voluntary. After this researcher received IRB approval, participants were recruited via receiving an email with information about the study, or by being directly asked. The email was sent from the researcher to a member of each school's administrative team, and then to participants. Once recruited, participants were categorized into 3 groups: (1) those with experience working in programs that included hearing peers (2) those with experience working in programs without hearing peers and (3) those with experience working in

both settings. It should be noted that all of the participants were female. The median age of participants was not recorded.

Materials

The only material used for this study was an interview form. Two forms of the interview were used: one for participants working in schools with hearing peers (Form A) and another for participants working in schools without hearing peers (Form B). Participants that had experience in both settings were interviewed using both forms.

Procedures

Once participants agreed to participate, they were asked to schedule a phone, Skype, or in-person interview with the researcher. Interviews were scheduled at the convenience of the participant. Data was collected for this study via standard open-ended interviews. Two interview forms were used in this study. Form A was used with participants who had experience in programs using hearing peers. Form B was used with participants who had experience in programs that did not have hearing peers. All participants were asked to describe their population of students, including the age of students, the number of students taught, and whether or not any students had typical hearing. Based on the participants' responses to the final question, the interviewer would either continue with Form A or Form B.

Participants that were interviewed using Form A were asked 8 open-ended questions regarding their opinions of the benefits and challenges they experienced when including hearing peers in an auditory oral preschool classroom for students who were deaf or hard of hearing. These included questions regarding whether or not the teacher thought her students were benefitting from having contact with the hearing peers, and if so, in what ways. Additionally, the participants were asked about their beliefs regarding whether or not the hearing peers benefitted

from being included in the program. Other questions included in the interview aimed to gain information about the participants' perceptions of the challenges, if any, that the teachers faced in the classroom as a result of including hearing peers. In the final question, participants were asked if they felt that they were able to provide both the hearing peers and the students who were deaf or hard of hearing with the same high quality and appropriate education.

Participants that were interviewed using Form B all had experience working in auditory oral preschools for students who were deaf or hard of hearing that did not include hearing peers. These participants were asked 4 open-ended questions and 1 yes/no question regarding their beliefs about the benefits and drawbacks of not including hearing peers in the classroom. These included questions regarding what benefits the teachers believed their students received as a result of being in an environment where all the students were deaf or hard of hearing. The participants were also asked if they thought including hearing peers in the classroom could be beneficial to their students, and if so, in what ways. Next, participants were asked if they believed including the hearing peers could be harmful, and if so, in what ways.

Results

Participants With Hearing Peers

A total of 14 participants reported that they worked in an environment that incorporated hearing peers. Participants reported that the population of hearing peers were typically recruited from a range of sources including being siblings or relatives of students who were deaf or hard of hearing already attending the program, children of staff members or other personnel, word-of-mouth, and being referred by a previous hearing peer. The majority of participants reported that they were aware of some speech and language screenings for hearing peers, however 2 participants reported that their

programs did not conduct screenings on hearing peers, and 3 participants were unaware if their programs conducted screenings. Participants reported teaching between 4 to 11 students, with as little as 14.4% of the class being typically hearing to as much as half of the class being typically hearing. One participant reported working in an environment that, in addition to hearing peers, also included children with typical hearing and speech or language delays. Even though these students had typical hearing, they were not included in the statistics for hearing peers because they were not used as models for the students with hearing loss. Eleven participants reported that the hearing peers spent all of the day with the students who were deaf or hard of hearing with the exception of a speech period in which only students with hearing loss attended. Two participants reported that the hearing peers remained with the students who were deaf or hard of hearing for the entire day, and one participant did not answer.

The highest reported perceived benefits of having hearing peers for the students with hearing loss included providing language models, social skills models, and play skills models. Ninety-three percent of participants reported that a benefit of having the hearing peers in the classroom was to act as speech and language models for the students who were deaf or hard of hearing. Only one participant did not report this as a benefit. It should be noted that this participant was in a unique environment in which the class size was larger than the average, and students with additional disabilities were included. Seventy-one percent of participants reported that hearing peers acted as social skills models for their students with hearing loss. Additionally, 71% of participants felt that the hearing peers also modeled appropriate play skills for their students who were deaf or hard of hearing. Other reported benefits of having hearing peers in the classroom included helping to prepare the students with hearing loss for a mainstream

environment, bringing in revenue for the school, and the presence of the peers being motivating conversational partners for the students with hearing loss.

Participants in this category also reported experiencing challenges as a result of including the hearing peers in the classroom. The most frequently reported challenges included balancing the hearing peers' quick response rate with the abilities of the students who were deaf or hard of hearing, behavior management, and peer boredom. Fifty percent of participants reported experiencing challenges balancing the response rate abilities of the hearing peers to that of the children with hearing loss. In other words, teachers reported that the hearing peers were faster to answer questions, and thus took away speaking opportunities from the students who were deaf or hard of hearing. Thirty-six percent of participants reported experiencing behavioral management challenges with the inclusion of the hearing peers, and 29% noted challenges with peer boredom. Additionally, other reported challenges included the hearing peers not providing a solid language model, the teachers' attention being pulled away from the students with hearing loss, the school struggling to provide an appropriate population of hearing peers, and larger class sizes. Two teachers also reported regression of the hearing peers' language abilities as a challenge. One reported example of this was a case when a hearing peer regressed to using one or 2 words as opposed to full sentences. The teacher noted that this could have been due to the hearing peer's confusion of the expectations.

In general, all participants except 3 felt that even given the challenges associated with having hearing peers, it was overall more beneficial to include them. One of the three participants that did not feel this way was ambivalent, and felt that she could not say having them was better or worse than not having them. Another participant did not answer the question. The third participant felt that the hearing peers were not beneficial in her classroom, and they were

simply used as fillers for revenue purposes. It should be noted that, again, this participant had a larger class size than the other participants, and students with additional disabilities were included in the classroom. When the participants were asked if they felt that they were able to provide an appropriate education to all of the students, 86% of the participants responded that they did believe they were providing appropriate education for both the hearing peers and the students who were deaf or hard of hearing.

Participants were also asked about their perceptions of possible benefits to the hearing peers as a result of being included in the classroom. The highest reported perceived benefits to the hearing peers were a greater understanding and exposure to individuals with differing levels of abilities, being in a language rich environment, school readiness, and the development of empathy. Sixty-four percent of participants felt that the hearing peers in their classrooms developed a greater understanding and acceptance of individuals with disabilities. Fifty percent of participants cited language benefits including the opportunity to be in a language rich environment and/or increased language abilities as a benefit. Forty-three percent of participants mentioned the development of empathy as a benefit, and 36% of participants named school readiness as a benefit. Other perceived benefits to the hearing peers included being in an environment with a low student-to-teacher ratio, learning metacognitive thinking strategies, and becoming more aware of hearing technology.

It should be noted that while participants were asked only about the benefits to the students, 43% of participants additionally noted that the inclusion of hearing peers was beneficial to them as a constant reminder of typical child development.

Participants Without Hearing Peers

A total of 7 participants responded to interview Form B, the form used with participants with experience in environments that did not include hearing peers. Participants in this category were asked about the number of students that they taught. Participants reported a range from 4 students to 9 students. Additionally, these participants were asked if they felt their students received any benefits as a result of being in a classroom that only included students who were deaf or hard of hearing, and if so, what benefits did they perceive. While all 7 participants felt that there were benefits to educating children with hearing loss in an environment that did not include hearing peers, their responses had greater variability than the participants answering Form A. Forty-three percent of participants reported camaraderie of the students as a benefit their students received as a result of being educated in an environment without hearing peers. Camaraderie was defined as any mention of a sense of community, belonging, or togetherness and/or feelings of being in a safe zone. Twenty-nine percent of participants noted increased opportunities to talk as a benefit for their students. Likewise, 29% of participants mentioned that not having hearing peers allowed their students to be in an environment that was strongly focused on the language needs of the students with hearing loss. Other benefits that were reported included ease of scheduling due to the fact that most of the children had similar needs, the fact that the students are always presented with a strong language model from the teacher, and the ability to have smaller class sizes. One participant also noted that not having hearing peers most closely aligned with the school's goals for educating children with hearing loss.

These 7 participants were also asked if they perceived any possible benefits of including hearing peers in their classrooms. All but one of the participants felt that there

could potentially be benefits to including hearing peers. Fifty percent of participants that did believe in possible benefits (3 participants) felt it could be beneficial for social interactions between the students. Seventeen percent of the participants felt that it was beneficial to have the hearing peers as a reminder of typical development. Another participant believed that the hearing peers should be included because that is how the world is in reality.

Finally, the participants were asked if they felt that the addition of hearing peers could potentially be harmful and in what ways. All but one participant felt that adding hearing peers could possibly have harmful impacts on the students with hearing loss. Of the 6 participants that felt there could be harmful impacts, 33% felt that the hearing peers could add more behavioral management challenges to the classroom. Thirty-three percent also noted that adding hearing peers could potentially take speaking turns away from the students with hearing loss. Other possible harmful effects noted by the participants included the hearing peers not providing accurate language models, hearing peer boredom, the hearing peers inability to work at a specific language level, and the teacher not being able to plan lessons solely focused on the language development of the students with hearing loss. One participant also noted that it could be harmful to the development of the typically hearing students because they would be missing out on a typical preschool experience.

Discussion

There has been very little research conducted on teachers' perceptions of the benefits and drawbacks of including or excluding hearing peers in preschool environments for

students who are deaf or hard of hearing. While much research is still warranted on the topic, this study provides readers with some insight into how teachers feel about the topic.

First, differences in the reported number of students taught can be seen between the two groups of participants. While educators with experience teaching hearing peers reported their numbers of students taught ranging from 4 to 11, teachers in programs without hearing peers reported numbers of students taught ranging from 4 to 9. One could infer from this information that teachers working in environments with hearing peers may have more students on their caseloads than teachers working in programs without hearing peers. However, it is important to note that these numbers simply reflect the number of students taught by each participant; it does not reflect the average class size. Many participants noted that they saw differing numbers of students a day. The numbers reported in this study simply reflect how many total students a participant taught in an average day. More research should be conducted to further understand how class size could be impacted by the inclusion of hearing peers.

Next, the results of this study show an interesting trend in teachers' perceptions of the benefits of including hearing peers. The most reported benefits, as perceived by teachers, were that the hearing peers acted as speech/language models, social skills models, and play models. All of these benefits reflect the hearing peer providing some sort of positive model in which the students with hearing loss are able to learn from. This coincides with the prior research of Robertson and Weismer (1997) and Richels et al (2015) in that children, specifically those with language delays, are able to learn valuable information from their peers.

Additionally, 50% of participants noted that it was often challenging to balance the peers' language abilities with those of the students who were deaf or hard of hearing. Teachers often

felt that the hearing peers were so quick to answer questions that it deprived the students with hearing loss of an opportunity to speak. Furthermore, 36% of participants felt they experienced more behavioral management challenges as a result of including the hearing peers. Since over 1/3 of the teachers interviewed in this category perceived behavior management as a challenge, perhaps programs should consider more stringent screening processes for hearing peers. Many teachers reported their programs conducting some sort of screening process, however no participants specifically mentioned the hearing peers being screened for behaviors. Furthermore, it is possible that efforts should be made to better train teachers in how to work specifically with hearing peers. Training of this kind could help to lessen the behavioral management challenges that the participants in this study reported. Additionally, some participants mentioned the hearing peers providing inaccurate or weak language models. This reporting could again suggest that more thorough screening processes for hearing peers could be beneficial.

Another interesting finding of this study was the similarities between the challenges participants who were interviewed using Form A reported and the possible harmful impacts that were reported by participants using Form B. While participants with experience teaching hearing peers reported behavioral management, peer boredom, and balancing giving the students with hearing loss ample opportunity to answer questions as challenges, teachers with experience in programs that did not include hearing peers listed these same ideas as potential harmful impacts. The same connections were found between the perceived benefits participants using Form A reported and the potential benefits individuals interviewed using Form B reported. Participants using Form A noted that social interactions between students with and without hearing loss were a benefit, while participants using Form B agreed that it could be a potential benefit.

Conclusion

The results of this study support the notion that teachers perceive both benefits and drawbacks of including or not including hearing peers in preschool classrooms for students who are deaf or hard of hearing. This study does not indicate that one method is more or less effective than the other. It is this researcher's belief that the positive and negative aspects of both settings should be considered when programs are deciding how to best educate students with hearing loss. It is possible that programs utilizing hearing peers should implement stronger screening processes and teacher training programs to help control some of the challenges associated with including hearing peers. Contrastingly, educators working in environments without hearing peers should consider finding a time in the schedule for their students to interact with hearing peers, as the teachers did note potential benefits of this interaction. Whether or not a program chooses to include or exclude hearing peers may create certain benefits and drawbacks for teachers, however the goal of educating students to reach their fullest potential should remain constant.

References

Bobzien, K., Richels, C., Raver, A., Hester, P., Browning, E., & Morin, L., (2013). An observational study of social communication skills in eight preschoolers with and without hearing loss during cooperative play, *Early Childhood Education, 41,* 339-346

Brackett, D., & Henniges, M. (1976). Communicative interaction of preschool hearing impaired children in an integrated setting. *The Volta Review, 78*, 276-285

Dean M., & Nettles, J. (1987). Reverse mainstreaming: A successful model for interaction. *The Volta Review, 89,* 27-33

Henry, G., & Rickman, D., (2007). Do peers' influence children's skill development in preschool? *Economics of Education Review, 26,* 100-112

Justice, L., Petscher, Y., Schatschneider, C., & Mashburn, A. (2011). Peer effects in preschool classrooms: Is children's language growth associated with their classmates' skills? *Child Development, 82,* 1776-1777

Mashburn, A., Justice, L., Downer, J., Pianta, R. (2009). Peer effects on children's language achievement during pre-kindergarten. *Child Development, 80,* 686-702.

Mclean, M. & Hanline, M., (1990). Providing early intervention services in integrated environments: Challenges and Opportunities for the future, *Topics in Early Childhood Special Education, 10,* 66-77

Moog, J., & Stein, K., (2008). Teaching deaf children to speak. *Contemporary Issues in Communication Science and Disorders, 35,* 133-142

Rafferty, Y., Boettcher, C., & Griffin, K. (2001). Benefits and risks of reverse inclusion for preschoolers with and without disabilities: Parents' perspectives. *Journal of Early Intervention, 24*, 266-286

Richels, C. G., J. L. Bobzien, K. S. Schwartz, S. A. Raver, E. L. Browning, and P. P. Hester. (2015). Teachers and peers as communication models to teach grammatical forms to preschoolers with hearing loss. *Communication Disorders Quarterly*

Robertson, S., & Weismer, S. (1997). The influence of peer models on play scripts of children with specific language impairment. *Journal of Speech, Language and Hearing Research, 40,* 49-61.

Weinstein, G. (1968) Nursery school with a difference. *Parents, 43(11),* 66-70

Appendix A

Form A

1. Just to clarify all your students are preschool aged children?
   - *Participant response:*
   - What is the approximate age range of your students?

2. Can you describe your population of students
   a. Are any of your students typically hearing?
   b. How many students do you teach?
   c. If you have hearing peers. . .
      i. How are your hearing peers recruited? Any screening processes?
      ii. What is the approximate ratio of hearing students to students who are deaf or hard of hearing?
      iii. Are students with multiple disabilities accepted into the program?

If the program includes hearing peers, use this section.

1. Can you explain a little bit about how to program is set up?
   a. Are the hearing peers with the students who are deaf or hard of hearing for only some parts of the day? All of the day?
   b. Are students grouped in any specific manner in relation to the hearing peers?

2. Do you think your students who are deaf or hard of hearing receive any benefits as a result of including the hearing peers in the classroom?

3. Do you see any specific benefits to the hearing peers as a result of being included in the program?

4. Do you believe that you experience any challenges in the classroom that are directly related to having the hearing peers? Behavioral challenges? Challenges in academic areas?

   a. Given these challenges, do you still believe that including the hearing peers is overall more beneficial than not?

5. Do you feel that you are able to provide both the students who are deaf or hard of hearing and the hearing peers with a high quality and appropriate education?

Appendix B

Form B

Continue with this section for programs that do not include hearing peers

1. When I was new to this field, I was not aware that some programs included hearing peers and some did not. Are you aware that some programs for children who are deaf or hard of hearing do including hearing peers?

2. What benefits do you think your students receive as a result of being in a setting that does not including typically hearing peers (in other words, in a setting where all the children are deaf or hard of hearing)?

3. Do you think including hearing peers in your classroom could be beneficial to your students?

    a. Do you think it could be harmful?

    b. In what ways? For example, academically or emotionally?