

Play and Preschool Children Who Are Deaf: A Review of the Literature

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Abstract

The purpose of this study was to provide a narrative review of the literature of studies on deaf children play. Electronic searches of databases including EBSCOhost, ERIC, Deaf Education related journals, and Google Scholar were undertaken using terms such as deaf play, deaf play and literacy, deaf play and school and deaf play and language, deaf play and cognition. Relevant articles on the deaf children play extracted were synthesized narratively. The results of the analysis were interpreted using descriptive analysis, percentages, frequencies and emerging themes. The data showed most of the studies focused on comparing deaf children play behaviors to those of the hearing peers. Findings on deaf children social and cognitive play were inconsistent. Several issues in this analysis point to implications for future research, teacher preparation and teacher intentionality in the implementation of play in early childhood education (ECE) classrooms.

Keywords

Deaf, Children Play, Deaf Children Play, Deaf Children Interactions

1. Introduction

Supporting language and literacy development among young children who are deaf is a critical issue for deaf educators (Allen, Letteri, & Choi, 2014; Golos & Moses, 2013; Gray, 1995; Mayer, 2007; Musyoka, 2015; Williams, 2004). Early language access is reported as a significant factor that creates literacy challenges and literacy gaps among most of the students who are deaf (Freel et al., 2011; Myers et al., 2010). Attending to literacy needs of students who are deaf is critical because the previous literature shows that most of them tend to graduate reading and fourth-grade level (Allen, 1986; Traxler, 2000; Furth, 1966; Trybus & Karchmer, 1972).

Previous works identify about 90% of children who are deaf are from hearing families, (Moore, 1987; Mitchell & Karchmer, 2004). Consequently, a possibility that most of these children may not have an opportunity for early access to comprehensible language input is a visual language. Lack of a strong language base from home explains why most children who are deaf are reported having no strong language base by the time they start school (Williams, 1991, Williams, Kantor, & Pinnell, 1992). Consequently, ECE programs with students who are deaf need to identify strategies they can implement in their classroom to model and support language while supporting emergent literacy development.

Children's play has become increasingly relevant because of its role in supporting language and literacy development (Bergen, 2002; Bergen & Mauer 2000; Christakis, Zimmerman, & Garrison, 2007; Christie & Enz 1992; Pelegrini, 1980; Smith, 2010; Vukelich, 1994; Weisbert, Zosh, Hirsh-Pasek, & Golinkoff, 2013). Children play is an important aspect of ECE classrooms (Ashiabi, 2007; Cheng, 2012; Fisher, Hirsh-Pasek, Golinko, Singer, & Berk. 2009; Lee, 2006; Lynch, 2015; Quance, Lehrer, & Stathopoulos, 2008). The NAEYC consensus is that play is an important aspect of Developmentally Appropriate Practice (DAP) should be provided in ECE (Bredekamp & Copple, 1997; NAEYC, 2009). Given its importance, understanding play among young children who are deaf and how to integrate it to support language and literacy development is critical for educators in ECE programs.

2. Purpose of the Review

The goal of this paper was to document a narrative review of the literature of studies on the play of children who are deaf. According to Onwuegbuzie, Leech and Collins (2012), a review of the literature provides information on previous research work and the gaps in research to be addressed without redundant replication. This paper seeks to examine the extent, trends, the research topics and research methodologies employed in the studies on play of children who are deaf. One advantage of this review is that it enables educators to learn about the research evidence that can be translated into practice and identify the gaps that require more research.

3. Methodology

For this review, content analysis was used to study empirical documentation and answer the proposed research questions. Content analysis is used to analyze written, verbal or visual information, artifacts, and pictures qualitatively and quantitatively (Creswell, 2012). Content analysis was used in previous literature reviews (Jamaludin, Alias, & DeWitt, 2015; Maschi, Baer, & Turner, 2011; Zainuddin & Halili, 2016).

4. Research Questions

The following research questions guided the literature review:

- 1) What were research designs employed in research on the play of children who are deaf?
- 2) Who are the targeted population and participants?
- 3) What is the trend of the research in research on the play of children who are deaf?
- 4) What is the focus of the research in research on the play of children who are deaf?
- 5) How are language and literacy represented in research on the play of children who are deaf?

5. Articles Reviewed Selection

The present study identified 55 peer-reviewed scholarly articles and included 32 articles in the review. A search of the relevant literature was undertaken using these databases Education Resources Information Center (ERIC), PsycINFO, PsycARTICLES, EBSCOhost, Academic Search Complete, Dissertations Abstracts, JSTOR and ProQuest, and search engine of Google Scholar. The principal search terms used included: play and deaf, social play and deaf, cognitive play and deaf, classroom play and deaf, indoor play and deaf, outdoor play and deaf.

The review articles were filtered using the following criteria:

- 1) Inclusion criteria included:
 - a) Types of participants: children who are deaf ages 3 - 8-year-old; Early Childhood Education (ECE) is from Birth through Age 8.
 - b) Research setting: school/classroom.
 - c) Empirical study: Qualitative, quantitative or mixed research studies.
 - d) Publication: full-text review studies published.
 - e) Language: English.
- 2) Exclusion criteria included:
 - a) Studies focusing on the play outside of school.
 - b) Studies focusing on hearing children only.
 - c) Lack of access to the full text.
 - d) Studies not empirical and did not include the participants' description, methodology or the findings.
 - e) Publications not in English.

Given the lack of research exclusively focused on the play of children who are deaf in USA the search was widened to include analysis from countries outside the USA. The flowchart in **Figure 1** illustrates the articles selection process.

6. Reliability

To increase reliability, a second coder who has the same background in deaf education assisted in coding. Disagreed issues were discussed and coded after both coders reached a consensus.

7. Findings and Discussion

The major themes that emerged from the articles reviewed included.

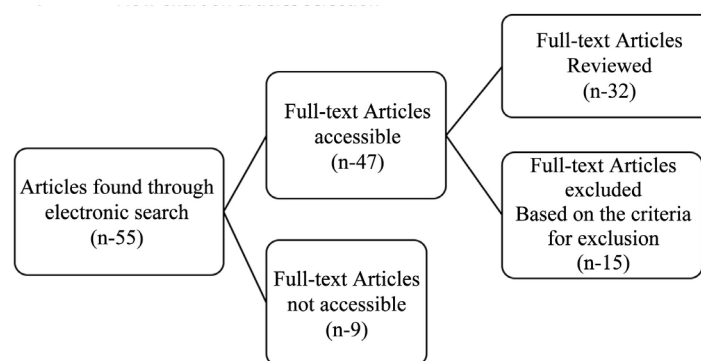


Figure 1. Flow chart on articles selection.

7.1. Research Designs

This review found that the most frequently used methodologies were the quantitative approach (64.5%). A total of 21 studies selected used a quantitative research design. It is interesting to note that majority of the quantitative studies used a comparative methodology. The goal was to compare play of children who are deaf to that of their hearing peer (Arnold & Trembly, 1979; Bobzien, Richels, Raver, Hester, Browning, & Morin, 2013; Brackett & Henniges, 1976; Brown, Prescott, Rickards, & Peterson, 1997; Cornelius & Hornett 1990; Darbyshire 1977; Deluzio & Girolametta, 2011; Esposito & Koorland, 1989; Gatty 1990; Higginbotham & Baker 1981; Kretschmer 1972; Lederberg, Ryan, & Robbins, 1986; Levine, 1993; Levy-Shiff & Hoffman, 1985; Mann, 1984; McKirdy & Black, 1982; Minnet, Clark & Wilson, 1994; Quintas, Curti, Goulart, & Chiari, 2009; Vandell & George 1981). Other quantitative studies investigated the relationship between language and play (Casby & McCormack 1985; Lederberg, 1991; Quittner, Cejas, Wang, Niparko, & Barker, 2016; Schirmer, 1989). There was one experimental study (Pataki, Metz, & Metz, 2014) and one longitudinal study (Quittner et al., 2016).

Other studies reviewed were qualitative descriptive studies that focused on play behavior, interactions and language use (Brunberg, 2005; Chapel, 2005; O'Connor, 1994; Messenheimer-Young & Kretschmer, 1994; Musyoka, 2015a, b; Bilir & Bal, 1995). **Figure 2** shows the frequency of the various type of research methods used in the 32 selected articles.

The articles reviewed were published between 1971-2016. The trend of the research methodologies used in research on the play of children who are deaf showed that the research design used mostly in the period between 1970 and 1999 was predominantly quantitative methods. Articles published after 1980 employed qualitative research method. See **Figure 3**. For the methodological trend in research on the play of children who are deaf.

Although the research setting varied most of the studies were conducted in integrated or inclusive school play setting with hearing students (Arnold & Trembly 1979; Bobzien et al., 2013; Brown et al., 1997; Brackett & Henniges, 1976; O'Connor, 1994; Cornelius & Hornett, 1990; Deluzio & Girolametta, 2011; Esposito & Koorland, 1989; Gatty, 1990; Levy-Shiff & Hoffman, 1985; Vandell &

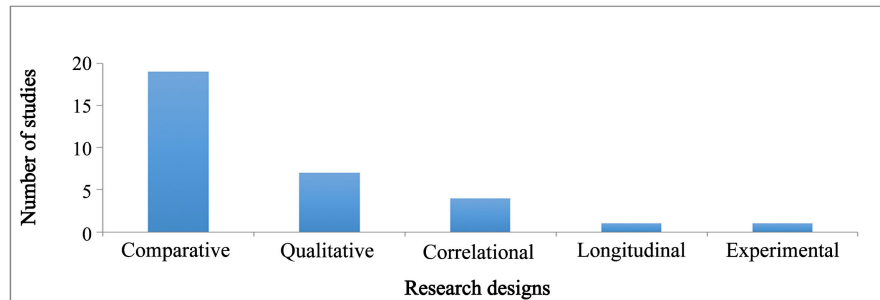


Figure 2. Frequencies on research designs employed.

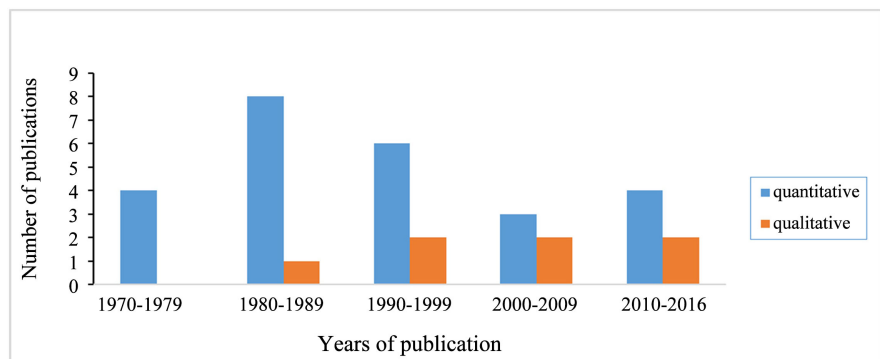


Figure 3. Trend of research methods used on deaf children play studies.

George, 1981; Mann, 1984, McKirdy & Black, 1982; Messenheimer-Young & Kretschmer, 1994; Minnett, et al., 1994; Bilir & Bal, 1995; Vandell & George 1981). Other research settings included self-contained or segregated settings (Higginbotham & Baker, 1981; Lederberg, 1991; Mevine, 1993; Musyoka, 2015, a, b). A few studies were conducted in clinical settings (Casby & McCormack 1985; Chapel, 2005; Darbyshire, 1977; Kretschmer, 1972; Lederberg, Ryan, & Robbins, 1986; Quittner et al., 2016; Schirmer, 1989; Sisco, Kranz, Lund, & Schwartz, 1979). Of all the studies reviewed, only three studies were deaf children observed playing both integrated and segregated educational settings (Brunnberg, 2005; O'Connor, 1994; Cornelius & Hornett, 1990).

7.2. Targeted Population

Regarding participants, all participants in this study were children of different ages, (between 3 - 8 years) with various hearing loss levels and communication modalities. Some studies had participants without detailed information as to what their hearing level was or the type of communication mode. The majority of the participants' communication modalities was identified as oral or verbal (Arnold & Trembly 1979; Bobzien, et al., 2013; Brackett & Henniges, 1976; Brown, Prescott, Rickards, & Peterson, 1997; O'Connor, 1994; Darbyshire, 1977; Deluzio & Girolametta, 2011; Esposito & Koorland, 1989; Gatty, 1990; Higginbotham & Baker, 1981; Kretschmer, 1972; Levy-Shiff & Hoffman, 1985; Mann, 1984; Messenheimer-Young & Kretschmer, 1994; Minnett, et al., 1994). Oral or

verbal communication was noted to occur mostly to students attending integrated or inclusive educational settings.

Another communication modality reported in the studies of play of children who are deaf play was sign language (Casby & McCormack 1985; Chapel, 2005; Pataki, Metz, & Metz, 2014; Quittner et al., 2016; Schirmer, 1989; Bilir & Bal, 1995). Some students had opportunities to use either signing or oral communication depending on the play context and play partners (Brunnberg, 2005; Cornelius & Hornett, 1990). Also, some studies involved children who are deaf using total communication or simultaneous communication (Lederberg, Ryan, & Robbins, 1986; Levine, 1993; McKirdy & Black, 1982; Schirmer, 1989; Vandell & George, 1981). Only two studies indicated the children were ASL/English bilinguals (Musyoka, 2015a, b).

7.3. Research Trend

The review showed an increase in the number of articles published that focus on the play of children who are deaf in more recent years (see **Figure 4**). The increase suggests a growing interest in research on children's play that existed in the period between 1980 and 1999. Also, the review showed a significant decline in research on play of children who are deaf between 2000-2009. Despite the recent increase from 2010, there is still a need to examine play of children who are deaf and to focus on the current needs of children who are deaf and are ASL/English bilingual bimodal and those with cochlear implants.

7.4. Research Focus

The data analysis identified six focus area including; play behaviors, communication during play, language and play, play interactions, play and literacy and play and therapy. **Figure 5** shows the number of studies and the research focus.

Most of the studies focused on the nature of play behavior (32%, n = 14) and play interactions (30%, n-13). Studies that focused on play behaviors attended to both social and cognitive play behaviors (Arnold & Trembly, 1979; Brown, et al., 1997; Brown et. al., 2000; O'Connor, 1994; Cornelius & Hornett, 1990; Darbyshire, 1977; Esposito & Koorland, 1989; Gatty, 1990; Higginbotham & Baker, 1981; Kretschmer, 1972; Levine, 1993; Levy-Shiff & Hoffman 1985; Mann, 1984; Musyoka, 2015; Quintas et al., 2009). Most studies examined the nature of social play interactions (Brown, et al., 1997; Brunnber, 2005; Deluzio & Girolametta, 2011; Esposito & Koorland, 1989; Kretchmer, 1972; Lederberg, 1991; Lederberg Ryan & Robbins, 1986; Levine, 1993; Levy-Shiff & Hoffman 1985; McKirdy & Black, 1982; Messenheimer-Young & Kretschmer, 1994; Minnett, et al., 1994; Musyoka, 2015; Vandell & George, 1981). More studies focused on communication (19%, n = 8) compared to those that focused on language (14%, n = 6). Studies that focused on language mostly examined the association between play and language (Casby & McCormack, 1985; Cornelious & Hornett, 1990; Lederberg, 1991; Quittner et al., 2016, Schirmer, 1989). There were only two studies that

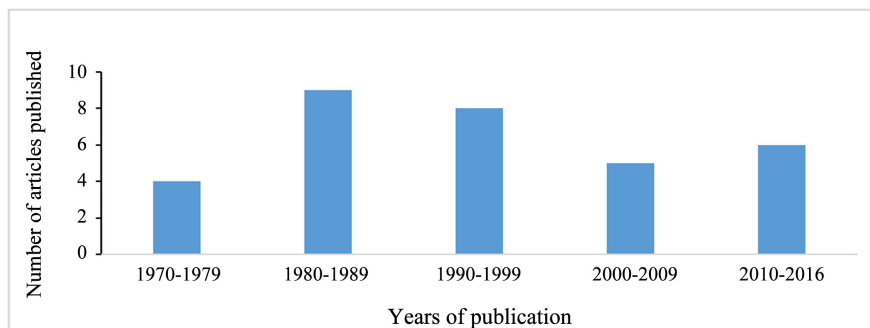


Figure 4. The trend of Deaf children play research from 1970 to date.

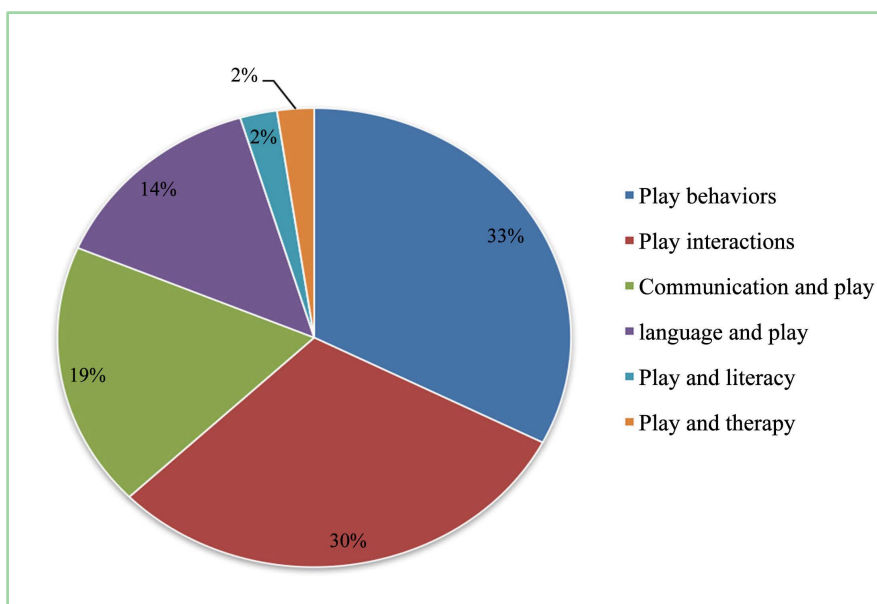


Figure 5. Frequency on research focus.

focused on developing literacy skills (Pataki, Metz, & Metz, 2014, Quittner et al., 2016) and one that focused on the use of play for therapy purposes (Chapel, 2005).

7.5. Language, Literacy, and Play

Play in ECE programs is a tool to support language and literacy development. The only one study that focused on the use of children play in developing literacy skills reported its effect of on students' storybook reading skills (Pataki, Metz, & Metz, 2014). The review noted there were limited studies that explored language, and play of children who are deaf (Casby & McCormack, 1985; Cornelious & Hornett, 1990; Lederberg, 1991; Musyoka, 2015; Quittner et al., 2016; Schirmer, 1989). Casby and McCormack (1985) study reported a relationship between language and symbolic play among deaf children.

Cornelious and Hornett (1990) noted that language and play of children who are deaf varied with the play context. In Lederberg (1991) study children with high language ability were observed to engage in triadic interactions with teachers and other peers and preferred play partners with similar language ability. A

more recent play by [Quittner et al. \(2016\)](#) found that children who had early implantation had early access to spoken language which impacted their symbolic play and novel noun learning. There were only two studies that occurred in an ASL English bilingual play environment ([Musyoka, 2015a, b](#)). [Musyoka's \(2015a\)](#) study echoed the findings by [Lederberg \(1991\)](#) that the play partners influenced the use of language during play. Contrarily, [Musyoka's \(2015b\)](#) findings conflicted previous findings on the social and cognitive play behaviors of a deaf child. In [Musyoka's](#) study, the deaf child in a bilingual program demonstrated similar behaviors as those reported in research with hearing children. Earlier studies had reported low social and cognitive play behaviors.

8. Discussion, Conclusion, and Future Implications

The earliest studies that focused on the play of children who are deaf dated back to 1970s ([Arnold & Tremblay, 1979](#); [Brackett & Henniges, 1976](#); [Darbyshire, 1977](#); [Kretschmer, 1972](#)). Among hearing children, although there is evidence of research on children play as early as the 1920s and 1930s ([Bott, 1928](#); [Green, 1933](#); [Parten, 1933](#)), the 1970s were a prolific period regarding research on children's play ([Sutton-Smith, 1983](#)). This suggests there was a delay in investigating play of children who are deaf. The delay in research on deaf children may explain why most research on deaf children's play employed comparative research methodologies. The choice of comparative research methodology is noted in several studies that examined play of children with special needs ([Merry, 1933](#); [Singer & Streiner, 1966](#); [Cowan, 1972](#)). Therefore, previous research interest on children with special needs was not to understand the children's play behaviors but to understand how they deviated from their peers who were considered the "norm".

The majority of the research in this review focused on social aspects, and cognitive aspects observed in play behaviors of children who are deaf. Only one study focused on literacy development ([Pataki, Metz, & Metz, 2014](#)). The absence of research on play and literacy among children who are deaf is unexpected finding because play in ECE has not only been associated with the whole child's development but with the development of literacy skills. Also, the absence deviates from what was observed in earlier studies of young hearing children's play that examined literacy skills within play context ([Cook 2000](#); [Johnson, Christie, & Wardle 2005](#); [Gmitrova & Gmitrova, 2003](#); [Pederson, Rook-Green, & Elder, 1981](#); [Pellegrini, 1980](#); [Saltz, Dixon, & Johnson, 1977](#); [Saracho, 2001, 2004](#); [Yawkey, 1981](#); [Wolfgang, 1974](#)). In fact, as early as 1983 there was a compiled review of literature that focused on play as a vehicle for developing literacy in young children ([Isenberg & Jacob, 1983](#)).

Although previous research showed interplay of language, cognition and social interaction such as play ([Connolly, Doyle, & Reznick, 1988](#); [McCune-Nicolich, 1995](#); [McCune-Nicolich, 1981](#); [Piaget, 1962](#)), the current review noted a lack of research on the play where language access and use were considered critical. In

most of the studies examined reference was made to the type of communication system the students used as opposed to their language ability and use. Since deaf students can either access language using an auditory modality or visually modality or bimodal, there is a need for studies that address how students access language, their language ability and the nature of play observed.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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