

## Research and Journal Publications in the Field of Deafblindness: What Designs & Literature Inform our Practices?

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**Abstract:** *This descriptive study identified types of articles published, and research designs used, in 37 peer-reviewed special education journals. A total of 4,854 articles published from 2012 through 2017 were examined to determine types of articles and research methods informing policy and practice during the 6-year period and contributing to identification of future research needs. Similar numbers of qualitative designs, single case research designs, and other quantitative designs were implemented with IDEA-eligible individuals identified as deafblind (DB). Fewer than half of these studies identified were intervention studies. Knowing types of articles and research informing the field is needed to understand the evidence underlying our practices and policies. Increased numbers of high-quality intervention studies be conducted to inform the field.*

To provide effective and efficient interventions and strategies, researchers, practitioners, and other stakeholders should be knowledgeable about current research findings. Published research in a field informs both practice and policy; a key way for stakeholders to access current research is through peer-reviewed journals. Unfortunately, current research in some areas of special education is alarmingly lacking (Holbrook, 2015). Examination of the articles published in influential journals provides information about the present state of the field.

Various types of empirical and non-empirical articles are published in peer-reviewed journals. Non-empirical articles may include any of the following: research to practice, policy or theory descriptions, editorials, program descriptions, literature reviews, discussions, or position pieces. Empirical articles report original research or data analysis and include quantitative, qualitative, and mixed method designs, encompassing a range of research methodologies. Each type of empirical article may make important contributions to a field by increasing understanding and application of practices; yet not all research designs lead to meaningful conclusions about which practices actually work (Cook, Cook, Landrum, & Tankersley, 2008). For example, survey, correlational, and qualitative designs yield important information through descriptions of phenomena, but typically do not introduce interventions in a controlled way (Cook & Cook, 2008), such as occurs with systematic manipulation of independent variables.

Intervention studies are empirical studies designed to evaluate and develop practices, materials, or strategies purposed to achieve a learning or educational goal and are particularly important in the identification of evidence-based practices (EBPs). EBPs are identified as a body

of research is published and similar results accumulate in peer-reviewed journals, providing evidence regarding the impact of practices on outcomes. It is incumbent that researchers conduct studies that investigate current and new practices to ensure EBPs are identified, knowledge in the field evolves, and students have access to effective and efficient interventions, as practitioners are expected to implement EBPs as one way to increase student learning. Practice and policy need sound research data on which to base decisions (Carter et al., 2013).

Changes in research methodology have been noted in conjunction with an increased focus on EBPs and accountability. Hammond and Gast (2010) reported an increase in the number of single case research designs (SCRDs) in special education research over time, particularly an increase in multiple baseline and comparison designs. SCRDs are important to the identification of EBPs for a small population (Emerson, 2015), such as those who are deafblind, because group designs requiring large numbers of participants are impractical when potential participants are few.

As one example of the increasing emphasis on empirical research, a descriptive analysis of *Career Development and Transition for Exceptional Individuals* over a 35-year period showed an increase in empirical studies, from 26.1% in 1978 to 74.6% in 2012. Unfortunately, only 66 studies (24%) were reported as intervention studies, and only 25 (37.9%) of those 66 studies were described as using experimental methodology that was sufficient to make causal inferences about intervention outcomes (Carter et al., 2013). In another descriptive review, Parker (2009) specifically focused on SCRDs evaluating orientation and mobility interventions with individuals with deafblindness and identified only 13 studies between 1965 and 2007. Ivy and Hatton (2014) conducted a systematic review of response-prompting procedures to teach skill acquisition to individuals with little to no functional vision. They identified 22 studies using SCRDs published through 2012, 12 of which included participants with deafblindness. They conclude that while more rigorous research is beginning to be conducted in the field, much more is needed so that professionals can implement response prompting strategies effectively and efficiently. Parker and Ivy (2014) synthesized intervention research published between January 2000 and August 2013 focused on communication development in children with visual impairment and deafblindness. They identified 34 intervention studies during this time period, of which 13 included individuals with deafblindness. The authors conclude, similarly to the other reviews noted herein, that the intervention studies conducted are encouraging; yet, these studies need to be replicated “to provide evidence of their efficacy” (p.137). Although there has been an increase in intervention studies, numbers remain low. Ferrell, Bruce, and Luckner (2014) concluded that there is a "dire need" for research to improve educational practices for individuals with deafblindness.

#### **PURPOSE OF STUDY**

The purpose of this descriptive study was to illuminate the types of articles published, and research designs used, in peer-reviewed special education journals from 2012 through 2017 to inform the field of deafblindness during this review period. Current information about the literature informing policy and practice is necessary to identify areas of need for future research. This study was part of a larger analysis that examined publication types related to all IDEA disability categories from 2012 through 2014 and was expanded to include key journals in the field of deafblindness from 2015 through 2017. A descriptive analysis was used to answer the following questions about articles published from 2012-2017:

1. What types of empirical and non-empirical articles were published in the field of deafblindness in targeted special education journals? Specifically, what were the percentages of empirical

articles focused on IDEA eligible participants, empirical articles focused on non-IDEA eligible participants, and non-empirical articles?

2. What types of research designs were used with IDEA-eligible participants with deafblindness? For SCRDS, what percentage of studies reported effect size measures and what effect size measures were used?
3. What percentage of empirical studies focused on IDEA-eligible participants with deafblindness were intervention studies? What research methodologies were used for intervention studies?

## METHOD

We followed an approach similar to other descriptive studies focusing on descriptions of publications in special education (e.g., Dunlap, Clarke, & Steiner, 1999; Mastropieri et al., 2009; McFarland, Williams, & Miciak, 2013). Each of these research teams followed a process of identifying journals, types of articles, types of research, and other variables of interest. For example, Dunlap et al. (1999) in their review on behavioral and developmental disabilities relied on a database search and nominated journals. Mastropieri et al. (2009) categorized articles into various groupings such as research, practice papers, reviews, etc. Dunlap and colleagues also used a similar criterion as in the present study in that they required at least one participant identified with the disability of interest be included in studies to be coded.

Initially, this descriptive study focused on all articles published from 2012 through 2014 from targeted disability-related journals across all IDEA disability categories. Additional articles published from 2015 through 2017 in key journals in deafblindness were reviewed for a more extensive picture of current publications on deafblindness. Expanding the study to include an additional three years of articles in key journals potentially resulted in a more comprehensive as well as more current representation of the literature in the area of deafblindness. One study was identified through an ancestral search of references. In total, 4,854 articles from 37 journals (i.e., every article in each volume) over the 6-year period (i.e., 2012-2017) were reviewed.

## SEARCH PROCEDURES

To select the journals, we searched four databases (i.e., ERIC, Education Research Complete, Education Full Text, PsycINFO) to identify disability-related journals published in the United States. Additional journals were identified by reviewing professional organizations for publications and conferring with experts/researchers. The Council for Exceptional Children contributes general journals along with sub-division journals specific to IDEA disability categories. Other professional organizations with included journals are the American Association on Intellectual & Developmental Disabilities, TASH, American Council on Rural Special Education, and the American Speech-Language-Hearing Association. Experts in special education and disability studies identified journals they believed to make significant contributions to their fields (contacts available from second author upon request). To be included in this study, journals were required to meet these criteria: (a) focus on disabilities, as evidenced by the professional organizations, experts, and search terms related to IDEA disability categories; (b) peer-reviewed; and (c) published in the United States (with the exception of *Journal of Deafblind Studies on Communication* due to its unique and specific focus on deafblindness, the disability category of interest). (See Appendix for identified journals.) The selected journals do not represent an exhaustive list of possible journals addressing disability research, and specifically the area of

deafblindness. Other English Language journals could include relevant articles; however, using search criteria analogous to other similar descriptive studies (e.g., Dunlap et al., 1999; Mastropieri et al., 2009; McFarland et al., 2013) increases the confidence that published research related to deafblindness was broadly searched.

## PROCESS

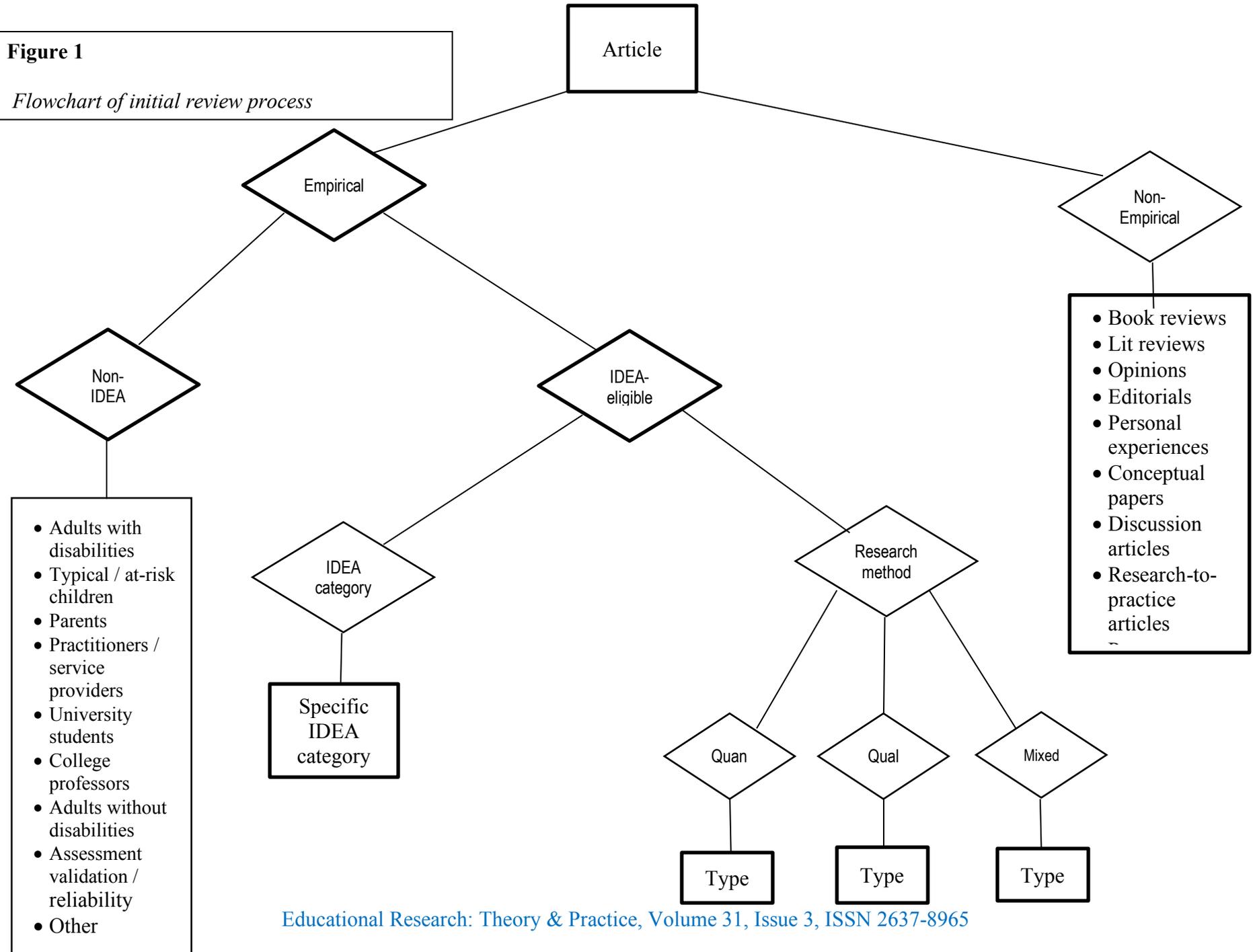
**KEY TERMS.** To clarify the decision-making process, key terms were defined. “Empirical” studies were defined as those reporting original research utilizing any type of quantitative, qualitative, or mixed method research design. Descriptions of research designs in these areas were developed in conjunction with professors teaching graduate research methodology courses (J. Pennington, personal communication, February 10, 2015; C. Maddux, personal communication, February 26, 2015) and through review of educational research textbooks (e.g., Mills & Gay, 2016). “Non-empirical” articles were defined as those not reporting original research, including narrative reviews, opinions, editorials, personal experiences, conceptual papers, discussions, research-to-practice articles, and program descriptions.

Individuals, birth through 21 years of age, were defined as having a disability if they were identified under an IDEA category or if their disability was clinically diagnosed. For the purpose of this study, the IDEA category “multiple impairments” was used to describe a participant identified as having more than one disability under IDEA. “Deafblindness” was defined as a participant specifically identified as deafblind or if the participant description stated impairments in both vision and hearing, even if the term “deafblind” was not used. Many empirical studies published in the targeted journals included participants who were not eligible for services under IDEA. Studies that included adults with disabilities, parents, service providers, university students, children with typical development, and others were described as “empirical non-IDEA participants.” “Intervention studies” were defined as empirical studies utilizing any design that tested an intervention, program, or strategy aimed to improve student performance.

**DECISION –MAKING PROCESS: ARTICLE COMPONENTS REVIEWED AND CODED.** The initial review process is depicted in Figure 1. For each article, a complete citation was documented, type of article (i.e., empirical or non-empirical), and the purpose or category of the article if it was non-empirical. Empirical articles that did not focus on a group identified under IDEA were sub-divided into categories (i.e., adults with disabilities, typical and at-risk children, parents, service providers, university students, college professors, adults without disabilities, assessment measures, and other). Non-empirical articles and those in the non-IDEA category were not analyzed for specific type of publication or study design, as the primary focus of this study was research related to children with disabilities who were eligible for services under IDEA. A second review of non-empirical articles and those in the non-IDEA category was conducted to identify articles in these categories targeting deafblindness.

**Figure 1**

*Flowchart of initial review process*



Empirical articles targeting populations identified under IDEA were further analyzed by IDEA category and status as an intervention study. To be included in the present study, at least one participant had to be identified as deafblind. Subsequently, these empirical articles were coded by research method (i.e., quantitative, qualitative, or mixed method designs). Each method was further sub-divided into specific types of designs (see Table 1). In addition, for SCRDs, reported effect size measures were recorded. After the components of each article were coded, all articles reviewed from 2012 through 2017 were tallied by the categories described above for each journal.

An initial reliability check resulted in inter-rater reliability of 99% (range of 92-100%) for coding the category for each article. Subsequently, one reviewer initially coded all targeted components for each article classified as empirical, with a focus on participants identified as deafblind. For inter-rater reliability, a second reviewer then independently checked each component of each of these articles. Inter-rater reliability was 92% (range of 80 – 100%) for coding of individual articles following a point-by-point comparison. The two reviewers, with the assistance of a third reviewer if necessary, discussed any disagreements and reexamined articles to resolve differences and reach 100% consensus.

## RESULTS

### TYPES OF ALL ARTICLES PUBLISHED

To answer Research Question 1, we calculated the percentages of empirical studies focused on IDEA eligible and non-IDEA eligible participants and non-empirical articles published in the five key journals identified in the area of deafblindness for the 6-year review period. It is noteworthy that the *Journal of Visual Impairment and Blindness* published a special issue on deafblindness in 2016, leading to an uncharacteristically high number of articles featuring deafblindness during the review period. A total of 96 articles targeting deafblindness were identified, including 42 empirical studies (43.8%) with individuals with deafblindness who were eligible for special education services under IDEA, 20 empirical studies (20.8%) with individuals who were not eligible for services under IDEA (e.g., parents, adults, practitioners), and 34 non-empirical articles (35.4%). Discussion articles (10.4%, n=10) were the most frequently published, followed by conceptual papers (7.3%, n=7), editorials (6.3%, n=6), literature reviews (5.2%, n=5), program descriptions and book reviews (2.1% each, n=2), and film reviews and research to practice articles (1% each, n=1).

### TYPES OF RESEARCH DESIGNS USED WITH CHILDREN WHO ARE DEAFBLIND

To answer Research Question 2, we compiled all empirical studies conducted in the 37 targeted journals between 2012 and 2017. A total of 42 empirical studies included children with deafblindness (see Appendix). A similar number of studies used qualitative designs, SCRDs, and other quantitative designs during this period (see Table 1 for descriptions of designs). Qualitative designs were used with slightly less frequency than both SCRDs and other quantitative designs (31%, n=13). Most qualitative designs were case studies (23.8%, n=10), followed by narrative analysis, grounded theory and action research (each 2.4%, n=1).

SCRDs constituted 33.3% (n=14) of research designs during the 6-year period, only slightly greater than the number of qualitative designs. Combined designs were the most frequently used SCRD (7.1%, n=3), with multiple baseline, multi-element, reversal or withdrawal designs, and other designs following at 4.8% (n=2) of research studies each. Multiple probe and

alternating treatment designs were used in 2.4% (n=1) of all research designs. No other SCRDS were represented in the reviewed literature for this population during the review period.

**Table 1**

*Research designs coded in reviewed studies*

<b>Quantitative Designs</b>	<b>Single Case Research Designs</b>	<b>Qualitative Designs</b>	<b>Mixed Method Designs</b>
True experimental	Multiple baseline	Grounded theory	Convergent parallel (or concurrent or triangulation) (QUAN + QUAL)
Quasi-experimental	Nonconcurrent multiple baseline	Ethnography	Explanatory sequential (QUAN – qual)
Between groups factorial designs	Multiple probe	Case study	Exploratory sequential (QUAL – quan)
Within group factorial designs	Nonconcurrent multiple probe	Basic interpretive	Embedded or nested
Within group time series	Alternating treatment and adapted alternating treatments	Narrative analysis	Transformative

Within group repeated measures	Multi-element and adapted multi- element	Critical qualitative	Other (specified)
Regression analyses	Reversal / withdrawal / ABAB	Post-modern	
Comparative designs	Parallel treatments	Phenomenological	
Correlational	Changing criterion		
Cross-sectional survey	Simultaneous treatment design		
Longitudinal survey	Concurrent chains		
Descriptive	Combinations		
Meta-analysis	Other (specified)		
Systematic reviews			
Combinations			
Other (specified)			

Due to the recent emphasis on reporting effect size measures for SCRDS as a standardized method of reporting the amount of improvement (Parker, Vannest, Davis, & Sauber, 2011), reported effect size measures were described. Only 21.4% (n=3) of SCRDS studies focusing on children with deafblindness reported any effect size measures. Nonoverlap of all pairs was reported as an effect size measure in 14.3% (n=2) of the reviewed studies; overlapping data was used as an effect size measure in 7.1% (n=1) of SCRDS studies.

In addition to SCRDS, other quantitative designs were used in 35.7% (n=15) of reviewed research studies. A majority of these were regression analyses, conducted in 21.4% (n=9) of studies. Quantitative studies that employed descriptive designs totaled 4.8% (n=2) of studies, while comparative studies totaled 9.5% (n=4). No other quantitative methodologies (e.g., surveys, group experimental designs, correlational designs) were used with this population during this period. Similarly, no studies targeting participants with deafblindness used mixed method designs.

## RESEARCH METHODOLOGIES OF INTERVENTION STUDIES

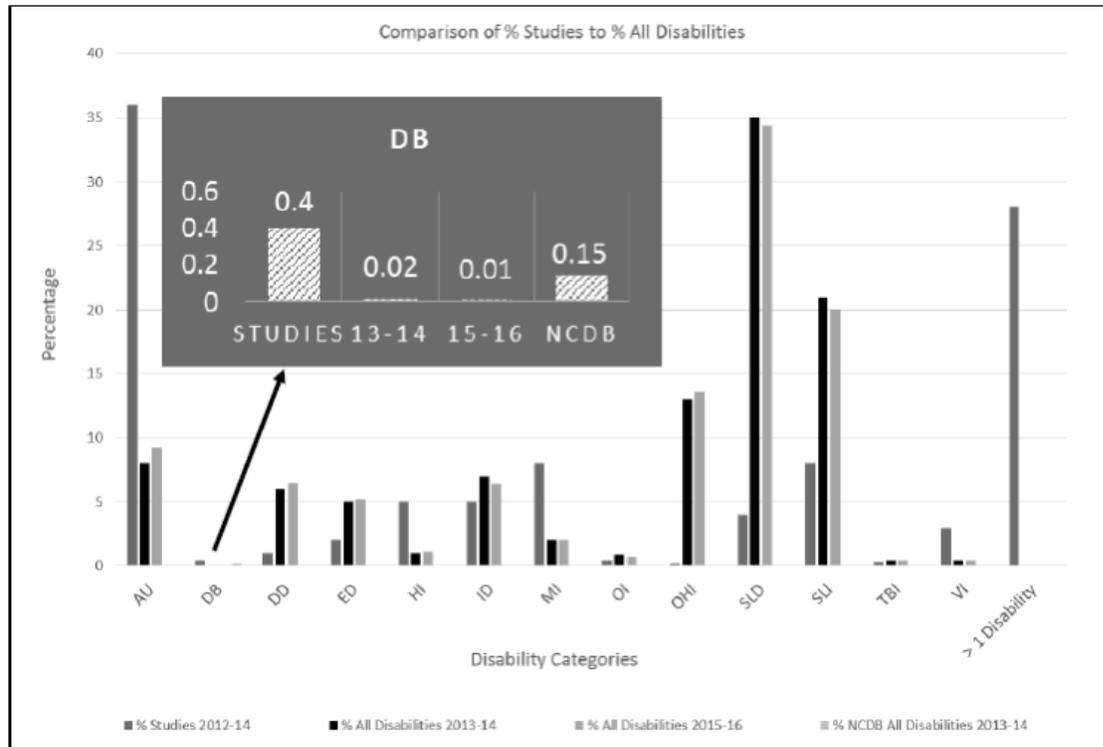
To answer Research Question 3 regarding the percentage of empirical studies that evaluated the effects of interventions implemented with children with deafblindness, and the research methodologies that were used, we examined the empirical studies identified in Research Question 1. Of the 42 empirical studies identified through Research Question 1 criteria, only 17 were intervention studies, fewer than half of the total number of empirical studies. As might be expected given the small population of individuals who are deafblind and their diverse characteristics, a large majority of these intervention studies used SCRDS (82.4%, n=14). The remaining three intervention studies used qualitative designs (17.6%, n=3). No intervention studies were conducted using experimental group designs.

#### **COMPARISON OF PERCENTAGE OF STUDIES TO PERCENTAGE OF STUDENTS PER DISABILITY CATEGORY**

In 2013 to 2014 individuals who qualified for special education services under the category of deafblind comprised 0.02% of all individuals receiving services under IDEA (U.S. Department of Education, National Center for Education Statistics, 2016; see Figure 2). In 2015 to 2016 individuals who were deafblind were 0.01% of the population served under IDEA (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2017). At the onset of the review period, the National Center on Deaf-Blindness (NCDB; 2015) reported the percentage of individuals who were deafblind served in 2013 to 2014 was 0.15% of the IDEA eligible population, or 9,454 individuals. The NCDB count was approximately 9.5 times higher than the IDEA count for the corresponding time period. This discrepancy can be attributed to many individuals with deafblindness being reported under multiple impairments or other primary disabilities under IDEA. It is important to note that the NCDB count is relatively stable. In 2017, the most recent year for which the NCDB count is available, the total number had increased to 10,000 (NCDB, 2017); an increase of only 546 children in three years. The category of deafblindness appears to be over-represented in the research literature as compared to both counts, as 0.4% of all empirical studies in the 37 reviewed journals included children who were deafblind between 2012 and 2017 (i.e., IDEA or NCDB).

**Figure 2**

*Comparison of percentage of studies 2012-14 to percentage of all disabilities*



*Note:* AU, autism; DB, deafblind; DD, developmental delay; ED, emotional or behavioral disorder; HI, hearing impairment; ID, intellectual disability; MI, multiple impairment; OI, orthopedic impairment; OHI, other health impairment; SLD, specific learning disability; SLI, speech or language impairment; TBI, traumatic brain injury; VI, vision impairment.

## DISCUSSION

While prior descriptive studies have reported research and publication trends in areas of special education, most have been limited to a specific journal or type of publication (e.g., a particular research methodology). Our large-scale review provides a unique snapshot of the literature that currently informs the field of deafblindness. Of the 96 identified publications in deafblindness, 58 were empirical studies. It was encouraging to find that nearly two-thirds of the publications in deafblindness identified in this study were empirical studies, which aligns with the focus in the field of special education on using evidence and data to support practice and policy. The fact that the majority of the publications were empirical may signal a trend toward increased investigation of research-based practices.

Deafblindness is well-represented in the literature proportionate to the number of individuals who are deafblind, but the small number of intervention studies published has, thus far, prevented the identification of a single EBP being identified (Ferrell et al., 2014). Although the numbers appear to indicate that research is over-represented in comparison with the number of

identified students, we do not actually have sufficient research in the field. We need a much larger number of experimental studies investigating interventions in order to accumulate a body of research to determine what instructional strategies work with this population. The targeted journals included only 17 intervention studies during the 6-year review period. This small body of literature is a call to increase research that meets quality indicators (What Works Clearinghouse, 2020) to identify EBPs. In addition, those practices that are currently being used in the field should be examined to ensure that they continue to be applicable to the population and their needs, and to determine if they are supported by high-quality research.

The majority of intervention studies (14 of 17 studies) employed SCRDS. Given the heterogeneity of those identified with deafblindness, it is not surprising that the majority of intervention studies used SCRDS to evaluate the relationship between independent variables and outcomes. Recently, there has been an increased call to present effect sizes for findings of SCRDS (e.g., Parker et al., 2005; Parker et al., 2011). Given this increased emphasis, reported effect size measures for SCRDS were coded. The vast majority of SCRDS studies did not report effect size (82.4%). The most commonly reported effect size measure was nonoverlap of all pairs (11.8% of SCRDS,  $n=2$ ), followed by overlapping data as an effect size measure in 5.9% ( $n=1$ ) of studies. The overall lack of effect size measures for SCRDS in the field of deafblindness is potentially problematic in that these measures are powerful when synthesizing findings across studies (Rakap, 2015). However, effect sizes can be calculated post-hoc by researchers conducting systematic reviews.

Even though qualitative studies cannot test an intervention as can an experimental study using a group design or SCRDS, there were three qualitative studies that targeted an intervention and provided a description of perceived outcomes credited to the studied strategies. Even though causation cannot be attributed to an intervention studied through a qualitative study, we included these studies as intervention studies in that they can contribute to practices in the field of deafblindness. Parker and Ivy (2014) similarly included qualitative studies in their literature review if they evaluated an intervention and reported student data on an outcome attributed to the intervention. It is possible that other researchers with a narrower definition of intervention requiring experimental control would not include qualitative studies. Given the small number of intervention studies, we chose to code these qualitative studies as intervention studies due to the potential contributions they can make to the field (e.g., additional research investigating procedures through experimental designs).

Qualitative research was a frequently used methodology during the review period, with 31% of studies employing this approach. This particular methodology might have been prominent in order to study phenomena such as communication or relationships in natural environments. Qualitative research methods, such as case studies, might be most appropriate for answering research questions related to understanding phenomena or lived experiences; the focus of research in deafblindness often is on qualitatively understanding such experiences.

The relatively high number of studies using regression analyses should be viewed with the knowledge that many of these studies examined multiple variables, with disability category as one, and included large sample populations across multiple disability categories. It is important to recall that for the purposes of our study, all studies that included at least one individual who qualified for special education services under the IDEA category of deafblind were included for analysis. Thus, regression analyses were included in the present analysis if it was reported that students with deafblindness were included, although the majority of participants represented may have qualified for special education services under other disability categories. As a research

design, regression analysis may appear to be over-represented in the field of deafblindness because of the relatively large number of studies in which one, or a few, participants were identified as deafblind.

### **PRACTITIONER IMPLICATIONS**

When there is a choice among interventions, practitioners should select those that have been demonstrated through high quality research to be most effective and efficient, so that students achieve positive outcomes. Typically, EBPs have the highest level of evidence supporting the relationship between their implementation and change in measured behavior. EBPs should be selected for implementation when they are an appropriate match to student and setting characteristics. However, as noted, currently, more research needs to be done to identify EBPs in the field of deafblindness. While this makes intervention selection more difficult, understanding how different types of articles and studies contribute to the field can help guide practitioners in their application to practice. Each experimental design and article type have different purposes and strengths about which practitioners should be knowledgeable so that the information from these different publications is appropriately used.

Single case and group research designs have utility in evaluating causal effects of an intervention on outcomes (Cook et al., 2008). Intervention studies using these designs may provide beneficial information about the effects of an intervention. This study identified no group designs evaluating interventions; the majority of intervention studies used SCRDS. Based on these results and previous literature on the usefulness of SCRDS for low-incidence populations (Emerson, 2015), practitioners looking for studies evaluating interventions should be prepared to find primarily SCRDS studies. Thus, it might be important for university training programs (e.g., orientation and mobility, teachers of visually impaired) to offer content on understanding SCRDS as well as how to construct and use these designs. Coursework might emphasize published recommendations about evaluating SCRDS, such as those published by the What Works Clearinghouse (2020), as it would lead to understanding this specific research methodology.

Practitioners may gather other important information from additional types of articles. Qualitative studies are often used to answer “how” and “why” questions. The rich description reported can point to similarities and differences among variables in the study setting and participants and those of other settings and participants, thereby showing how the results may be applicable to another similar context. It can also uncover important processes and interactions relevant to instruction. Other research designs, such as correlational, descriptive, surveys, and some mixed-method studies, report information that is summary, or points to relationships between identified variables (Cook & Cook, 2008). Non-empirical articles can inform readers of important or new issues, products, and policies, in the field. They may also provide practitioners with helpful information on how to implement programs (e.g., research-to-practice articles).

### **LIMITATIONS**

Although we reviewed 4,854 studies across 37 special education journals, the selection method did not lead to the inclusion of all published journals. Including additional journals could have altered the results if one of those journals had a composition of articles that was substantially different in type from the journals included. Similarly, with the exception of *Journal of Deafblind Studies on Communication* due to its specific focus on the population of interest (i.e., deafblindness), journals published in the U.S. were targeted for review of published articles; including international journals might have led to a greater number of articles targeting

deafblindness. Specifically, the *British Journal of Visual Impairment and Blindness* could have contained relevant articles for the current descriptive study. It is a limitation that we focused on journals published in the U.S., with the exception of the one journal that targeted deafblindness, instead of including other English Language journals.

All studies in reviewed journal volumes that included at least one individual with deafblindness were included in this work. Based on this criterion, several large-scale studies using regression analyses or comparison designs were included. These studies included large numbers of participants with disabilities across all IDEA categories, including some individuals who were deafblind. Inclusion of these studies increased the count of studies using quantitative research designs, specifically regression analysis.

Another limitation is that we included all articles published in peer-reviewed journals. It is possible that some of those articles might not have been peer-reviewed (e.g., commentaries). The decision was made to include all articles because it was impossible to know if an editor had solicited particular articles outside of the typical peer-review process of a journal. As a result, some articles in our count might not have been peer-reviewed even though the journal is designated as being peer-reviewed.

An additional limitation is that the current study did not focus on the quality of the empirical studies, as such a review went beyond the scope of this study. Systematic reviews targeting specific interventions and focusing on the quality of studies, potentially using *What Works Clearinghouse* criteria, could be conducted to add to the literature regarding EBPs.

#### **FUTURE RESEARCH**

Future research might examine trends in research methodology and article types published, similar to the descriptive study conducted by Carter and colleagues (2013). For example, additional volumes of the five key journals identified in the area of deafblindness, prior to and following the 6-year review period, might be examined. The types of articles and research methodologies in the literature could be aggregated and compared to detect changes over time. It could be of interest to examine changes in policy and practice that correspond with changes in research and publication trends.

Another possible area of research is an evaluation of the number of EBPs that are identified in the research literature over time. As a greater number of intervention studies are published, do the number of identified EBPs also increase? Is there a corresponding change in implementation of EBPs in educational settings?

#### **CONCLUSION**

Peer-reviewed publications are a key means of informing the field about effective strategies and for influencing policy. Research in the area of deafblindness is over-represented as compared to percentage of students identified as deafblind; it was encouraging that a majority of publications were empirical studies. Unfortunately, a small number of these studies targeted interventions. Intervention studies are most likely, in comparison to other studies, to influence instructional practices and outcomes for individuals eligible under IDEA as deafblind. Even though the present study did not focus on quality of research, we call for increased high quality intervention studies in the area of deafblindness and that research findings are presented in such a way that practitioners can implement strategies in applied settings with high fidelity.

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## Appendix

### *Included Journals*

Journal	Total Number of Articles Reviewed 2012-2014	Total Number of Articles Reviewed 2015-2017	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2012-2014	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2015-2017
1. American Annals of the Deaf*	93	109		4
2. American Journal on Audiology	136	0		
3. American Journal on Intellectual and Developmental Disabilities	104	0		
4. American Journal of Speech Language Pathology	161	0		
5. Augmentative and Alternative Communication*	84	81	2	0
6. Autism Insights	10	0		
7. Autism Research and Treatment	71	0		
8. Behavioral Disorders	62	0		
9. Communication Disorders Quarterly*	76	78		0
10. Developmental Disabilities Research Reviews	19	0		
11. Education and Training in Autism and Developmental Disabilities	129	0	1	
12. Exceptional Children	82	0	2	
13. Focus on Autism and Developmental Disabilities	62	0		
14. Intellectual and Developmental Disabilities	132	0	2	
15. Insight: Research and Practice in Visual Impairment and Blindness**	23	NA		NA

Journal	Total Number of Articles Reviewed 2012-2014	Total Number of Articles Reviewed 2015-2017	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2012-2014	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2015-2017
16. Journal of Applied Behavior Analysis	254	0		
17. Journal of Autism and Other Developmental Disorders	886	0	1	
18. Journal of Deafblind Studies on Communication*	NA	25	NA	3
19. Journal of Deaf Studies and Deaf Education	118	1	3	1
20. Journal of Developmental and Physical Disabilities	142	0	2	
21. Journal of Early Intervention	44	0		
22. Journal of Emotional and Behavioral Disorders	54	0		
23. Journal of Learning Disabilities	134	0		
24. Journal of Positive Behavior Supports	70	0		
25. Journal of Special Education	60	0	3	
26. Journal of Speech, Language, and Hearing Research	475	0		
27. Journal of Visual Impairment & Blindness*	171	209	9	5
28. Language, Speech, and Hearing Services in Schools	111	0	1	
29. Learning Disabilities Research and Practice	66	0		
30. Learning Disability Quarterly	69	0		
31. Physical Disabilities: Education and Related Services***	12	0		
32. Remedial and Special Education	101	0	2	

Journal	Total Number of Articles Reviewed 2012-2014	Total Number of Articles Reviewed 2015-2017	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2012-2014	Number of Empirical Studies on Deafblindness with IDEA Eligible Participants in 2015-2017
33. Research and Practice for Persons with Severe Disabilities	98	0	1	
34. Rural Special Education Quarterly	52	0		
35. Sign Language Studies	80	0		
36. The Volta Review – Deaf Education	47	0		
37. Topics in Early Childhood Special Education	63	0		

*\* indicates the five journals identified by an expert as targeting individuals with deafblindness*

*\*\*last year of publication was 2012*

*\*\*\*no issues published in 2012*