Enhancing the Inclusion of Individuals with Disabilities†

Peter V. Paul†,*

†Department of Educational Studies, The Ohio State University, Special Education Programs, Columbus, USA
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Correspondence to:
Peter V. Paul*, e-mail: paul.3@osu.edu

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ABSTRACT

Inclusion of individuals with disabilities continues to be a controversial construct with mixed research findings on its effectiveness. Progress in inclusion is dependent, in part, on understanding two major themes: the acquisition of content knowledge and variety in the means of delivering and evaluating such knowledge. To address these themes, this article provides the synthesis of selected empirical and research integrative works on two constructs: the qualitative similarity hypothesis and literate thought. Although most of the cited research on these constructs has been conducted on d/Deaf and hard of hearing individuals, the principles and findings can be applied to other individuals with disabilities. In essence, it is argued that these two constructs can and do facilitate the inclusion of individuals in educational settings.

KEYWORDS

d/Deaf and hard of hearing, inclusion, literate thought, qualitative similarity hypothesis

INTRODUCTION

Inclusion and inclusive education continue to generate vitriolic debates regarding the effectiveness of placing individuals with disabilities in classrooms with neurotypical children and adolescents (e.g., see discussions in Jackson et al., 2008-2009; Alasim and Paul, 2018; Miyauchi and Paul, 2020). Since the passage of 94-142 and its amendments in the United States, the inclusion movement has fueled the deinstitutionalization of individuals with disabilities and, for the most part, has eliminated the need for specialized curricula to give children access to the general education or standard-based curriculum (Winzer, 2009; Valle and Conner, 2011).

The inclusion movement has also caused the rise of constructs such as disability rights and disability identities. In addition to benefits such as academic and social achievement, the outcomes of the movement have included minimizing inequalities, greater accountability in educational services, and probably most importantly—the delivery of accessible culturally relevant instruction to match the evolving demography of students (Thomas and Vaugh, 2004; Winzer, 2009; Paul, 2022). This movement has spread to a number of countries around the world (e.g., see discussions in Bryant et al., 2017; Alasim and Paul, 2018; Miyauchi and Paul, 2020). However, progress in inclusion seems to have stalled for some disability areas, notably for individuals with significant disabilities (Brock, 2018), even though the benefits have been documented for this cohort of students (Jackson et al., 2008-2009; Brock, 2018).

There is little doubt that inclusion is a complex construct with a number of components to consider with respect to research and instruction. A few of these components are:

• evidence-based practices, including accessibility and differentiation;
• composition of teacher-preparation programs;
• attitudes and perspectives of general and special education administrators, teachers, students, and parents/caregivers;
• the structure of school buildings and classrooms;
• and for inclusion activists, the views of the larger society—that is, ways to promote a society that is inclusive and exhibits a social justice mental framework.

(Note: The above assertions are based on the works of Stainback and Stainback, 1984; Stainback and Stainback, 1992; Winzer, 2009; Bryant et al., 2017).
Although all of the above components need to be addressed, via research and instruction, in order to improve or enhance inclusion, this article focuses on one major component: evidence-based or research-based practices, including accessibility and differentiation. It is concerned with two major themes of this component: (1) the acquisition of content or knowledge (e.g., language and literacy) and (2) variety in the means of delivering and evaluating the content or knowledge. To address the first theme (i.e., acquisition), the article provides the background and research for a construct labeled the qualitative similarity hypothesis (QSH; Paul and Lee, 2010; Paul et al., 2013; Paul, 2021). The second theme (i.e., delivering and evaluation) falls under the rubric of a construct labeled literate thought (Paul and Wang, 2012; Paul, 2022). Both the QSH and literate thought can be considered viable approaches to address, in part, the overall question: What can we do to make inclusion work? The plan for the article is as follows. First, the methodology is discussed to explicate the selection of sources. Next, the historical background and research on the QSH are presented, leading to support for access to the general education curriculum of neurotypical students. Then, the background and research on literate thought are covered, leading to support for Universal Design for Learning and related constructs such as alternative means of representation of information and differentiated education. The present article concludes with the merits and limitations of both constructs and proffers recommendations for further dialogue to enhance the inclusion of individuals with disabilities in educational environments.

METHODOLOGY

A professional review has been conducted to select relevant publications for an analysis of the findings. This type of review attempts to provide an overall conceptual framework of a broad topic, for example, inclusion, via a research synthesis of the two main constructs, the QSH and literate thought (e.g., see discussion of types of reviews in Gall et al., 2007, 2015). The review entails a wide range of sources from journal articles, to books, chapters, to books.

The authors of professional reviews are considered to be “experts” in their fields; however, such reviews are not above criticisms or free from limitations. In general, professional reviews of selected works reflect the biases of the contributors since they are based on the interpretations of research and research-related works. Clearly, there may be other interpretations by other scholars, who may disagree with the purported merits of the selected works. Nevertheless, a professional review is relevant here because the intent is to show the manner in which the QSH and literate thought have contributed or can contribute to the effective inclusion of individuals with disabilities (e.g., see additional perspectives on types of reviews in Paul and Wang, 2017).

THE QSH

As indicated previously, the QSH has focused on the theme of the acquisition of knowledge, particularly information associated with the academic content in subjects such as language and literacy—and, possibly, mathematics and science (Paul and Lee, 2010; Paul et al., 2013). The debate on the acquisition of knowledge for neurodiverse children and adolescents has been raging since the inception of the inclusion movement during the 1970s and 1980s (e.g., Stainback and Stainback, 1984, 1992; Winzer, 2009). The main assertion was that the acquisition of content information by neurodiverse individuals is developmentally similar to that of neurotypical individuals. This assertion has challenged the need for separate curricula and has supported the use of instructional practices associated with general education content areas. These instructional practices should be differentiated as needed for neurodiverse individuals. In addition, the successful learning strategies of neurotypical students should be taught, with differentiation, to neurodiverse students.

It should be remarked that arguing for developmental similarities does not obscure differences that might be observed in neurodiverse students, especially those with various disabilities (e.g., learning disabilities, cognitive disabilities). These differences may require the use of additional methods, particularly during the early school years. Nevertheless, these differences do not detract from the overall premise of developmental similarity models, including the QSH.

Support for the major components of the QSH and other developmental models can be found in the work of early research investigations (e.g., Lenneberg, 1967; Brown, 1973; Paul, 1985; de Viliers, 1991). Paul and colleagues (Paul, 1985; Paul, 2010; Paul, 2012; Paul et al., 2013) highlighted the work of Lenneberg (1967; also, see Rymer, 1992) on the development of language. Although there have been other researchers investigating this area (e.g., see discussion in Paul, 1985), Lenneberg’s research serves as the exemplar for the findings and the research design that was employed.

Lenneberg (1967) argued that the language acquisition of children with “mental retardation” (i.e., cognitive disabilities) was developmentally similar to that of neurotypical children with respect to mental age. Much of the research during this period employed the research paradigm of matching children on the basis of mental age determined mostly by intelligence tests. This paradigm was not without difficulties; it was argued that mental age was not always an adequate index of the general cognitive level. Nevertheless, Lenneberg argued that the language acquisition of children with mental retardation was quantitatively (rate or amount) delayed, but qualitatively similar with respect to the mental, not chronological, age. Other researchers have documented this finding for children with language or learning disabilities (e.g., see discussions in Stanovich et al., 1988; Valencia, 2011; Kamhi and Catts, 2012). It has been acknowledged that, when the quantitative delays are pervasive and persist across the formative years, it is often difficult to improve acquisition—even if educators are adhering to the principles of a developmental model.

The difficulty associated with quantitative delays has been documented by Stanovich and colleagues in the area of reading (literacy) development (Stanovich, 1986, 1988, 2000; Stanovich et al., 1988). Focusing on a critical optimal period...
for developing the foundations of reading (i.e., phonological awareness, decoding skills, and so on), Stanovich asserted that the “learning-to-read” stage should be relatively completed by the end of the third grade. He coined the phrase “Matthew Effects”, which stated that good readers get richer because of their voracious and extensive reading skills. However, poor or struggling readers become poorer or lose ground because of the challenges of more difficult reading materials after the third grade.

The early work of Stanovich on reading acquisition led to the construction of his developmental lag theory (Stanovich et al., 1988). Stanovich and colleagues averred that intensive instruction is necessary for the early grades, prior to grade 3, to minimize the “lag” or gap with respect to age- or grade-level reading achievement. In order to develop adequate reading comprehension skills, readers must have adequate word identification skills. There is a reciprocal relation between comprehension and identification; however, both groups of skills need to be taught. The third-grade level became the litmus test because, according to Stanovich, if children are not reading on the grade level, then the overwhelming majority will not catch up in the later grades.

In essence, the research of Lenneberg and Stanovich and that of Quigley and his colleagues (e.g., see discussion in Paul, 2009) have influenced the development of the QSH (Paul et al., 2013). The QSH embodies the constructs of a critical optimal period and, more importantly, disciplinary structure, which refers to the fundamentals (i.e., crucial components) for developing language and literacy. The notion of fundamentals highlights the QSH’s aspect of developmental or qualitative similarity. That is, unlike the developmental lag theory, the QSH is not concerned with quantitative (amount or rate) development. The QSH maintains that development is similar regardless of the rate or amount of learning (Paul et al., 2013). This focus means that the comparison paradigm involves comparing competent/neurotypical readers with struggling readers, not “deaf” with “hearing” or “blind” with “sighted” or even “cognitive disability” with “non-cognitive disability.” Thus, it is possible for some d/Deaf and hard of hearing students (and even other students with disabilities) to be “competent or typical readers” because they have acquired the necessary fundamentals and are able to read to learn new information. In this sense, the focus should be on the linguistic and cognitive requirements of literacy for instruction purposes—not on the effects of the disability per se.

Much of the research support for the QSH and d/Deaf and hard of hearing students can be found in the early research of Quigley and colleagues (e.g., see Paul, 2009) and later investigations involving the components of the National Early Literacy Panel (2008) and the National Reading Panel (2000), summarized by several scholars (e.g., Paul et al., 2013; Mayer and Trezek, 2014; Wang and Williams, 2014; Trezek and Mayer, 2019). Support for the QSH can also be found in the work of researchers on second-language learning, particularly of English (e.g., August and Shanahan, 2006).

Quigley and colleagues argued that the development of English syntax of d/Deaf students was qualitatively similar to that of neurotypical “hearing” students (e.g., see discussion in Paul, 2009). That is, there was an order of difficulty in the acquisition of syntactic structures and this order was similar for both groups—d/Deaf and hearing. In addition, various structures were also acquired in a developmental manner; the easier structures (e.g., negation) were acquired before the more difficult structures (e.g., relative clauses). This developmental pattern was also observed by other researchers for other language components such as phonology and morphology (e.g., see discussion in Paul, 2009).

With respect to literacy, investigators also noted a developmental pattern, specifically with respect to the fundamentals of reading for d/Dhh students (e.g., Paul et al., 2013; Wang and Williams, 2014; Mayer and Trezek, 2015; Trezek and Mayer, 2019). Thus, d/Dhh students proceeded through the same developmental stages, made roughly the same errors, and used roughly the same effective language/literacy strategies as their neurotypical literacy counterparts. Of course, because the quantitative (rate and amount) development may be delayed or slower, these students might require special instructional enhancements and an enriched intensity of instruction to achieve developmental milestones—albeit at a later timeframe.

It is argued that teachers of students with disabilities, including d/Dhh students, should be familiar with the general development of language and literacy of neurotypical learners. This general development should provide implications for the development and use of effective instructional strategies. These strategies should be differentiated as needed. The QSH maintains that it is not necessary to use a separate language or literacy curriculum for d/Dhh students or for other students in Special Education programs. The general education or standard-based curriculum, particularly for students who are d/Dhh with disabilities (or have additional disabilities) or non-d/Dhh students with disabilities, may need to be supplemented with other materials.

Keeping in mind the initial focus on the developmental stages of neurotypical learners, it may be possible to develop individual profiles of children with disabilities for instructional purposes related to the fundamentals of language and literacy (and possibly other content areas such as science and mathematics). This is not to suggest that it is not important to understand the effects of a disability or condition such as deafness or blindness or autism. However, the understanding of a disability is not sufficient for developing the skills of language and literacy—or even for other content areas.

As noted by Paul (2021), the QSH has:
1. provided support for the development of inclusive educational programs;
2. proffered strong support for access to the general education or standards-based curriculum;
3. encouraged a stronger collaboration between general education and special education teachers and researchers to develop and implement evidence-based practices for children with disabilities, starting with practices for neurotypical learners; and
4. argued that effective educational practices should lead to the improvement of language and literacy skills for d/Deaf and hard of hearing children and for other children with disabilities.
LITERATE THOUGHT

The second construct, discussed here, is literate thought, which focuses on theme 2, mentioned previously: the delivery and evaluation of knowledge. In general, literate thought refers to the ability to think creatively, critically, logically, and rationally (Paul and Wang, 2012). This type of thinking is actually goal-directed thinking, related to, for example, making inferences, answering questions, offering interpretations, or critically analyzing passages or texts. Literate thought encompasses critical thinking skills and even metacognitive skills.

With the focus on a variety of means of delivering information—and consequently a variety of means of assessments—literate thought can be associated with Universal Design for Learning (UDL) (e.g., see Hartman, 2011; Coyne et al., 2012). In essence, the emphasis on literate thought as a major goal in education also means that there is a serious emphasis on the practice of differentiated instruction and assessment. This differentiation process also enhances the inclusion of children and adolescents with disabilities in general education classrooms.

Background: personal and professional

The impetus for literate thought was due to the birth of the present author’s son, Peter Ben, who has Down syndrome and autism. This induced a reflection on the challenges of developing literacy skills, especially in individuals who have multiple disabilities. However, literate thought is pertinent for all individuals, not just those with disabilities.

Much of the research on literate thought is based on the interpretations of related empirical research, involving the development of print literacy skills—that is, the ability to read and write (Paul and Wang, 2012; Paul, 2022). There is some primary research on individuals who are blind or have low vision (e.g., Wang and Al-Said, 2014). In addition, there have been suggestions for those who have learning disabilities or are struggling literacy learners. For the latter groups, researchers have recommended the use of “audiobooks” (for a practical discussion, see the Reading Rockets’ website: https://www.readingrockets.org/article/benefits-audiobooks-all-readers).

There are a number of students, including those with disabilities, who experience tremendous difficulty in accessing grade-level academic content information, literature, and other school materials in print/text or even what is available electronically (e.g., Butler and Stillman, 2002; Kamhi and Catts, 2012). As a result, these individuals will not only lag behind in the acquisition of critical knowledge but also not develop the ability to think critically about such knowledge. Without access, it is almost insurmountable to develop comprehension or interpretation skills to apply or use important knowledge or information.

Reconceptualization of literacy

One viable approach to the access and corresponding interpretation problem discussed above is to reconceptualize the construct of what it means to be “literate.” As mentioned, much of the focus has been on print literacy, which refers to information that has been captured on paper or electronically—namely, letters, characters, and symbols. This is often referred to as “the world on paper” (Olson, 1994).

It can be facilitative if print information is converted to audiobooks or sign books (for d/Deaf and hard of hearing students). For example, audiobooks have traditionally been used with second-language learners, learning-disabled students, and struggling readers or nonreaders. In many cases, audiobooks have proven successful in helping these students to access literature and enjoy books. Audiobooks can be used with average, avid, or gifted readers or even nonprint readers.

It has been argued that audiobooks (and sign books) can be as complex or cognitively demanding as print materials (e.g., see related discussion in Sticht and James, 1984; Rubin, 1995; Paul and Wang, 2012). This is not only due to the complexity of the content but also to the challenges of developing adequate listening (for audiobooks) and viewing (for sign books) comprehension skills. To underscore the complexity of listening (and, by analogy, viewing), consider the following passage in Sticht and James (1984):

D. P. Brown, a blind educator, completed his doctoral dissertation 30 years ago at Stanford University. In that, he analyzed relationships among oral and written language skills... He argued that listening to and comprehending spoken language is different from listening to nonlanguage sounds, which is something the prelanguage infant can do. He argued that, just as reading is not called looking, though it certainly involves looking while processing language symbols, listening while processing language signals should not be called merely listening. Listening, so he argued, is a parallel term to looking, and it causes confusion to have the term also serve as the oral language counterpart to reading. So he coined the term *auding* to refer to the process of listening to language and processing it for comprehension. (p. 293)

Whether listening or viewing, individuals still need to possess adequate language proficiency abilities related to the through-the-air form of that language captured in audio- or sign books. However, these alternative modes of delivering information can be tailored to the language and cognitive capacities of individuals, including those with disabilities. Developing literate thought through the use of audio- or sign books is possible and may be necessary for a number of students. Although this development should be in addition to the acquisition of print reading skills, it should be acknowledged that a number of individuals might prefer or perform better in alternative nonprint modes. While this might not be a popular educational notion, it still reflects a commitment to diversity (e.g., Calfee, 1994) and may prevent cognitive impoverishment, especially for individuals who struggle pervasively with print materials (e.g., see discussions in Paul and Wang, 2012).

The value of alternative or additional modes

To make the case for “alternative or additional modes”, it has been argued that literate thought is a mode-independent
construct (Paul and Wang, 2012). That is, it is not restricted to a particular delivery mode of presenting information. Specifically, it might be acceptable to argue that no particular delivery mode of information should be privileged. This implies that the quality and quantity of information are roughly similar, in spite of nuances, in all delivery modes (e.g., through-the-air, print, Braille, audiobooks, sign books). These delivery modes can become a part of the classroom literacy instruction for students. That is, whatever lessons we have developed for print literacy can be applied—roughly—to lessons involving the use of audiobooks and sign books.

With this focus on alternative modes, some educators might be concerned that many individuals will become “illiterate” (e.g., see discussions in Calfee, 1994; Paul and Wang, 2012)—that is, they will not develop or desire to develop the ability to read and write. With the reconceptualization of literacy, it is necessary to reconceptualize what it means to be illiterate. The following passage from Paul (2018) provides a perspective:

What does it mean to be illiterate? Historically, the concepts of literate and illiterate have been associated with print literacy. If a person was considered literate, this meant he or she could access and interpret information captured in the print or written mode. If a person was labelled illiterate, he or she could not access and interpret information captured in the print mode at a certain literacy level (e.g., functional literacy).

With the reconceptualization of literacy, this question needs to be reframed: Illiterate with respect to what? Print? Braille? Sign? A through-the-air form of a language—speaking or signing? If individuals are print illiterate, despite our best educational efforts, should we attempt to develop literacy in a different mode? Better yet, should we facilitate access to more than one mode of literacy in educational settings throughout compulsory education? Taking this route might address the issues of accessibility and equity. (p. 83)

In essence, alternative delivery modes should encourage educators (and researchers) to consider multiple means of representing and delivering information for developing literate thought. Thus, it might be possible to be “literate” in a nonprint mode and engage in all learned activities in that mode. Again, this does not mean that we should eliminate our focus on developing print literacy skills. However, it does mean that we should be more focused on developing the ability to think critically in one or more modes, including the nonprint modes.

Literate thought: final remarks

In essence, it is argued that literate thought is not an all-or-nothing phenomenon. Every individual, including those with a range of disabilities, can develop the ability to think critically about school-based materials. In order to accomplish this goal, it is important to reconceptualize what it means to be literate, especially with respect to the means of representing and delivering information and various means of assessing an individual’s understanding of that information (Hartman, 2011; Coyne et al., 2012; Paul and Wang, 2012).

The reconceptualization of literacy comports with the basic principles of the UDL (Hartman, 2011; Coyne et al., 2012). UDL addresses multiple means of representation and assessment as avenues to motivate learners to increase their engagement in the classroom. In addition, UDL and literate thought principles provide individuals with a range of opportunities to express their understanding of information associated with school or content areas.

Special education, indeed all of education, should offer multiple paths for developing high-level critical literate thinking skills in children and adolescents who have been struggling with print literacy. It can be argued that the complex needs of a diverse or evolving society require multiple means of representing information and engaging individuals to develop literate thinking skills (e.g., see the discussion in Ellsworth et al., 1994; Adnyani et al., 2021). The use of alternative or additional delivery modes might also mitigate factors that impede the development of cognition.

There is no question that literate thought needs to be investigated further, particularly for individuals who are struggling with accessing and interpreting information in print. As proffered by Paul and Wang (2012) and Paul (2022), questions for researchers to consider include:

- Is it cost effective and realistic to convert all learned information available in print to alternative nonprint modes?
- Is competency in nonprint modes (audio- and sign books) sufficient for participation in scientific, technological societies that are predominantly dependent on the written word?
- What are evidence-based practices for developing literate thought in any delivery mode?

CONCLUDING REMARKS

As mentioned at the beginning of this article, inclusion is a complex construct that requires perspectives from several different disciplines such as education, psychology, technology, and even philosophy. The QSH and literate thought have been suggested as viable means for enhancing the inclusion of individuals in educational settings. It is not implied that these constructs are sufficient for resolving all of the challenges of inclusion. There are clearly other areas that need to be investigated—namely, the attitudes of educators, parents, etc. associated with neurodiverse learners and the current structures (e.g., classroom environments) of schools. In addition, more research is needed on how to include individuals with the most challenging or intense needs such as those with emotional disorders, those with severe or multiple disabilities, and even d/Deaf students who are predominantly dependent on the use of sign for receptive and expressive communication.

In sum, it is argued in this article that the QSH and literate thought offer guidelines for developing effective instructional practices and ideas for future research agendas. In short, the QSH and literate thought are viable means for contributing to the enhancement of inclusion not only
for d/Deaf and hard of hearing students but also for many other students with disabilities. If applied discriminately and backed by research, these constructs might also contribute to the improvement of the educational and social lives of individuals with disabilities.

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CONFLICTS OF INTEREST

The author declares no conflicts of interest in association with the present study.


