CHAPTER 12.

INFORMING INQUIRY INTO WRITING ACROSS THE LIFESPAN FROM PERSPECTIVES ON STUDENTS WITH LEARNING DISABILITIES OR AUTISM SPECTRUM DISORDER

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The value of writing is not limited to single points of time in our lives but serves many different purposes across the lifespan (Bazerman et al., 2018). For instance, young children begin to experiment with writing as early as two years of age, using it as a vehicle for play, communication, and self-expression (Rowe, 2008). With the advent of school, the purposes for writing expand greatly to include writing to inform, persuade, describe, summarize, learn, and narrate to identify just some of the ways children, adolescents, and young adults learn to write and use writing as part of their education. During adulthood, writing is a staple of life at both work and home. White and blue collar workers commonly use writing to perform their jobs (Light, 2001), and adults frequently use writing throughout the day to initiate and maintain personal connections, as they tweet, text, email, and connect with each other using a variety of social networks and media (Freedman et al., 2016).

Over 85 percent of the world's population now writes (Roser & Ortiz-Ospina, 2018). People who do not know how to write or find writing challenging enough that they limit its use are at a disadvantage socially, educationally, and

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occupationally. Persons with a disability are at special risk for experiencing difficulties learning to write. For example, the most recent National Assessment of Educational Progress in the United States (National Center for Educational Statistics, 2012; an updated report is due in mid-2020) revealed that 95 percent of eighth and twelfth-grade students with a disability scored at or below the basic level of writing competence, denoting only partial mastery of grade-level writing skills. While not every person with a disability experiences problems learning to write or continues to experience difficulty with writing as they move into adulthood, writing problems are so pronounced that persons with disabilities score lower than peers without disabilities on every measure of writing in almost every study conducted to date with school-aged children (Albertini & Schley, 2011; Graham et al., 2016, 2017, 2020; Mayes & Calhoun, 2003; Myklebust, 1965; Savaiano & Hebert, in press). Even so, we know virtually nothing about the writing of individuals with disabilities across the lifespan. This chapter addresses this issue by considering perspectives on writing development in individuals with two different types of disabilities: learning disabilities (LD) and autism spectrum disorder (ASD). LD is a neurological disorder and accounts for 33 percent of students who receive special education services in schools across the United States, whereas ASD is a neurodevelopmental disorder and accounts for 11 percent of students who receive special education services in the United States (Hussar et al., 2020; Kauffman et al., 2017). The prevalence and increasing awareness of LD and ASD makes these two areas of disability good focal points for considering writing and disabilities across the lifespan.

For both LD and ASD, we examine evidence describing how the characteristics of the disability impact writing. This includes the strengths that persons with LD and ASD bring to writing and learning to write as well as the challenges they face. This analysis is informed by a lifespan perspective that recognizes that the development of writing is complex and variable, involves the reconfiguration of cognitive and social capabilities that evolved separately from it, is shaped and shapes other forms of language and learning development, requires learning how to use language resources flexibly and intentionally, and occurs in multiple contexts (including school) that are influenced by changing social needs, opportunities, resources, and technologies (Bazerman et al., 2018).

It is important to realize that the systematic study of writing with persons with disabilities has been mostly limited to the first 22 years of life. Research on the writing of persons with disabilities beyond college is virtually non-existent. While there is some longitudinal research with students with disabilities that examines the writing capabilities of the same students across more than a single school year (e.g., Nauclér, & Magnusson, 2002), this is limited to the study of a small set of writing skills, as was done by Maeland and Karlsdottir (1991) with

the handwriting and spelling of students with LD. In fact, almost all of what we know about the writing of persons with LD or ASD is based on cross-sectional research comparing their writing to the writing of peers without a disability in one or more grades (see Finnegan & Accardo, 2018; Graham et al., 2017) or research that involves one or more manipulations to determine how specific factors such as executive control impact their writing (Graham, 1997; Zajic & Wilson, 2020). While such studies can provide valuable insights, they are not a replacement for longitudinal research conducted both in and out of school at different points of development in the life of persons with LD or ASD. As a result, it is essential to view the writing of persons with disabilities through a lifespan lens.

WRITERS WITH LD

According to the Individuals with Disabilities Education Act (IDEA), an LD refers to "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations" (Title 1, Part A, § 602(30), 2004). Although individuals with LD exhibit average to above average intellectual functioning, their unexpected underachievement is largely unexplained. LD has consistently been one of the largest disability categories through which students receive special education supports, with 33 percent of students receiving special education services for an LD during the 2018-2019 academic year in the United States (Hussar et al., 2020). Though receipt of special education services is contingent on the qualification of possessing an LD in consonance with the IDEA definition, other definitions of LD, such as the definition of the National Joint Committee on Learning Disabilities (LD Online, 2015), emphasize the potential of the occurrence of LD across the lifespan.

Students with LD experience strained foundational writing and cognitive skills which impact their ability to develop more advanced writing skills. In K–12 school settings, the writing challenges often demonstrated by students with LD have been grouped into two categories: approach to writing and knowledge of writing (Graham & Harris, 2012). The approach that students with LD tend to adopt—knowledge-telling—relies on the telling and recalling of content that is already known about a given topic. This approach is typically adopted in an effort to cope with the demands of writing (Graham & Harris, 2012). The writing of students with LD is less organized, contains fewer details, and is less likely to stick to the intended topic of focus compared to their peers (Gillespie & Graham, 2014). They also spend less time planning, translating, and reviewing. When reviewing, changes largely focus on surface level details and oftentimes the changes

they make to their writing make no significant contribution or detract from the quality of their written response. The challenges that students with LD experience in regard to knowledge of writing—when compared with typically achieving peers—reflect a lack of knowledge surrounding different genres of writing (e.g., narrative and expository), as well as how writing works (Gillespie & Graham, 2014). They also struggle with grapho-motor skills and writing mechanics, and their writing is often choppy and may contain incomplete sentences.

Difficulties with approach and knowledge of writing exist alongside cognitive demands, as a lack of fluency with writing tasks drains necessary cognitive resources for developing writing. As McCutchen (2011) noted, fluent language processes allow writers—especially beginning writers—to manage the working memory constraints induced by writing, whereas writing knowledge helps writers manage the constraints of short-term memory.

One of the most recent meta-analyses examining the writing characteristics of students with LD when compared to their typically developing peers is reported by Graham et al. (2017). Of the studies reviewed, they found that students with LD obtained lower scores on several writing outcomes compared to their peers, including writing quality, organization, vocabulary, sentence fluency, conventions (i.e., spelling, handwriting, and grammar), genre elements, output, as well as motivation. These differences were both statistically significant and clinically significant. Their results suggest that writing is exceptionally challenging for students with LD and that deficits across these outcomes are pervasive over time as these variables were present in studies examining children in grades 1–12. Thus, students with LD do not just struggle with certain writing skills at one point in time (e.g., spelling and handwriting in elementary school); their writing challenges are persistent across time.

LD and Writing: A Lifespan Perspective

Though more research abounds at the elementary level, relatively little is known about the youngest writers with LD, particularly around the pre-K and kindergarten grade levels. This could be because young students have not yet been identified as having an LD. While disabilities can develop and be identified at different times, LD is typically diagnosed around third grade (this is the same time there is a shift in academic instruction from teaching students how to write to how to use writing to learn new content). In one study (Boudreau & Hedberg, 1999), preschool children with specific language impairments performed lower than matched peers on measures of language, processing, and print-related skills. Though this study included students with language impairments rather than LD, it is important to note the role that early language skills play in writing development (Graham et al., 2020).

Much of what is known about elementary writing begins in or after first grade and expands in late elementary (e.g., grades 3–5). Although research in elementary grades has focused on aspects of writing quality and the developmental process of writing ideas, there is a larger focus with students with LD at these grade levels on transcription skills and the mechanics of composing, including spelling, handwriting, grammar, and syntax. This literature regularly demonstrates that students with LD experience much greater difficulty with these transcription skills when compared to their typically developing peers (Berninger, 1999).

At the secondary level, from middle through high school, much less is known about the components of writing that are essential or critical for learners with LD (Poch & Lembke, 2017). While there is continued interest in transcription-level skills, these skills are generally assumed to be established by the early secondary grades, despite evidence that transcription-level challenges continue to develop across this time and continue to be constraining for adolescents with disabilities (McCutchen, 2011). With the increasing need for secondary students to use writing to demonstrate content expertise, elements of text generation—such as structure, idea development, and clarity of communication—tend to gain prominence over transcription-level skills. However, secondary students who experience difficulty learning to write often continue to struggle with transcription skills (e.g., Graham & Santangelo, 2014).

At the post-secondary level, very little research has explored the writing of individuals with LD. In a literature synthesis from 1990 to 2000, Li and Hamel (2003) identified seven studies that explored characteristics and error patterns in the writing of college students with LD and writing difficulties, with many of these studies comparing students with LD to students without LD. Li and Hamel (2003) suggested that the studies generally focused on mechanical errors (e.g., spelling, punctuation, and capitalization) and content problems (e.g., planning, organization, and coherence), both of which are consistent with those discussed earlier in the section above. No updated studies appear to be available, leaving a gap in this research over nearly the last two decades.

WRITERS WITH ASD

In addition to LDs, writing development can be affected by a wide array of other neurological differences, like those identified in ASD. Though ASD is diagnosed from a medical framework, a growing community push for self-advocacy and autistic identity exists embedded within a neurodiversity framework (Kapp et al., 2013). As these two perspectives differ, it is useful to consider the core characteristics of ASD from both the medical perspective from the Diagnostic and

Statistical Manual of Mental Disorders (5th Edition; DSM-5; American Psychiatric Association, 2013) and the self-advocacy perspective from the Autistic Self Advocacy Network (ASAN; ASAN, n.d.).

The DSM-5 describes ASD as a neurodevelopmental disorder characterized by difficulties with social communication and by the presence of restricted interests or repetitive behavioral patterns (American Psychiatric Association, 2013). Additionally, clinicians are required to make two further judgments when diagnosing ASD: the severity of required support (specified as low, medium, or high); and the presence of additional co-occurring conditions (i.e., intellectual disability or language impairment), associations with either biological or environmental factors, or associations with other neurodevelopmental disorders. The ASAN (n.d.) offers a similar yet different definition of ASD described via seven commonly exhibited characteristics. These seven characteristics include (a) different sensory experiences; (b) atypical approaches to learning and problem solving; (c) extreme passion or deeply focused thinking about specific subjects or topics; (d) atypical and repetitive movements; (e) desire for consistency, routine, and order, as disruptions can result in increased anxiety and frustration; (f) difficulties with understanding and expressing typically used verbal and non-verbal language; and (g) difficulties in understanding and engaging in social interactions.

Current prevalence estimates suggest that the number of eight-year-old children in the United States diagnosed with ASD is one in 54, with boys four times as likely as girls to be identified (Maenner et al., 2020). In educational contexts, approximately 11 percent of children diagnosed with ASD are served under the IDEA (Hussar et al., 2020). A growing body of research suggests that children with ASD commonly present a heterogeneous range of educational strengths and challenges (Bauminger-Zviely, 2013; Keen et al., 2016). Research on the writing development of children with ASD has been generally limited to writing done for academic purposes where evidence has suggested a similar wide array of strengths and challenges (Zajic & Asaro-Saddler, 2019; Zajic & Wilson, 2020). Relatively few studies have focused specifically on issues of writing development for individuals with ASD, with no longitudinal studies currently available. A recent meta-analysis analyzed 13 available studies to find that individuals with ASD demonstrate lower overall performance compared to their typically developing peers across standardized measures of handwriting, spelling, and text generation (Finnegan & Accardo, 2018). A thorough review of all available research is beyond the scope of this chapter (see Zajic & Wilson, 2020), but the following provides a brief overview of available research describing the range of transcription and text generation research done across the school-age and postsecondary years. Given the current body of literature, it is important to acknowledge that broad claims about the writing development of individuals with ASD—particularly across the lifespan—

are difficult at this time, and the following noted characteristics should be seen as preliminary points of consideration requiring further empirical investigation.

Writing Development in Individuals with ASD

Children with ASD commonly demonstrate transcription difficulties across the school-age years. Kushki et al. (2011) identified seven studies that demonstrated difficulties seemingly related to fine motor and visual-motor integration difficulties with challenges noted for overall handwriting legibility and letter formation. Additional studies have further explored these challenges (Johnson, Papadopoulos et al., 2013) or additional challenges with grip strength (Alaniz et al., 2015) and letter form or spacing (Johnson, Phillips et al., 2015). Cross-sectional research has found that children with ASD show these handwriting difficulties across the school-age years (Mayes et al., 2019). Spelling difficulties were noted in relation to typically developing peers (Finnegan & Accardo, 2018), but other studies have noted minimal spelling difficulties (Mayes & Calhoun, 2006).

Difficulties with text generation have also appeared to be quite common for students with ASD across a variety of studies. Most commonly, studies report these children perform lower than typically developing peers on standardized expository (Mayes & Calhoun, 2003, 2006, 2008), persuasive (Brown et al., 2014), and narrative writing measures (Myles et al., 2003). Few studies have focused on distinct subpopulations—like individuals who no longer met an ASD diagnosis (Troyb et al., 2014) or who qualified as gifted and talented (Assouline et al., 2012; Foley-Nicpon et al., 2012)—or on specific predictors of written language challenges, including social communication (Brown et al., 2014), oral language (Dockrell et al., 2014), and attention (Zajic et al., 2018). Studies have typically not focused on specific age ranges and have commonly included children in elementary through secondary school contexts (Zajic & Wilson, 2020). Some of the writing challenges experienced by school-age children with ASD appear distinct from those demonstrated by children with LD, even when children with either disability may demonstrate similar learning profiles (Zajic et al., 2019).

Beyond the school-age years, little empirical work has examined ASD and writing in postsecondary education and adulthood. Jurecic (2007) took an analytical perspective to one college student with ASD, though this work has been critiqued for offering a medical rather than neurodiverse perspective (Lewiecki-Wilson et al., 2008). Gerstle and Walsh (2011) offered accommodation and pedagogy practices for college students with ASD, but they offered limited theoretical takeaways (Pacton, 2013). Similarly, Cherney (2017) explored writing center tutoring practices for college students with ASD but offered pedagogical implementation strategies rather than empirically derived findings. Gillespie-Lynch

et al. (2020) adopted a participatory research approach that examined strengths and challenges of autistic college students, finding autistic college students may face challenges overcoming perfectionistic writing tendencies. Tomlinson and Newman (2017) adopted a neurodiversity approach and surveyed autistic writers online about their own life writing, arguing for approaches from universal design for learning to support postsecondary writing development. Two additional empirical studies echo difficulties observed in the school-age population. Beversdorf et al. (2001) reported preliminary evidence of handwriting difficulties in adults with ASD compared to typically developing peers. Brown and Klein (2011) compared short writing samples (narrative and expository) of adults with ASD to typically developing peers to find that adults with ASD wrote lower quality narrative and expository texts and shorter narrative texts. They also found a positive association between theory of mind and writing quality and length for both text types.

ADVANCING LIFESPAN RESEARCH ON INDIVIDUALS WITH LD OR ASD

Current research leaves much to be understood about the development of writing abilities and writing practices across the lifespan for individuals with disabilities like LD or ASD. Three areas of further research predominantly absent from the above syntheses are discussed next that may help to further unpack the lifespan writing development of individuals with LD or ASD. However, it should be noted that perhaps the greatest limitation that has the potential to significantly hamper the growth of a lifespan understanding of the writing development of individuals with disabilities is the field's understanding and definition of terms like LD and ASD, which can unintentionally skew the participants who qualify for future research studies. As definitions change or are updated, it makes it difficult to know whether comparable subgroups of participants are truly similar and have been reliably identified with a disability across contexts. Compounding this challenge through adulthood is the need to account for how individuals with disabilities have learned to manage their disability and make adaptations to their writing in terms of both the changing cognitive demands of writing and the social contexts surrounding their lives.

Early Writing Development Precursors

Much of the above-mentioned research has involved children in elementary or secondary grades with relatively no research focusing on the development of early and emergent writing abilities in children with LD or ASD. Writing development begins long before early elementary school, as emergent literacy prac-

tices (Rowe, 2018) and early linguistic and cognitive development (Berninger, 2015) serve as important precursors to later writing development. Investigation into these abilities may help specify early characteristics of LD or ASD that may guide long-term writing development inquiries.

For individuals with ASD, in addition to oral language, exploring the impact of early social development on early writing skills may offer new insights into written language development. As oral language and written language share an interrelated developmental trajectory (e.g., Berninger, 2015), further research into these areas may help explain difficulties with transcription and text generation experienced across the lifespan (Graham et al., 2020).

For individuals with ASD, in addition to oral language, additional focus to the role of early social development may offer new insights into written language development. The development of social communication abilities is a noted ongoing challenge for individuals with ASD impacted by an array of abilities throughout development (American Psychiatric Association, 2013). Looking to the development of joint attention abilities, one of the earliest developmental abilities related to social cognition (Mundy, 2016), may be important in the context of lifelong writing development.

Joint attention refers to the ability to coordinate attention with other people to fluidly adopt a common point of reference (or point of view) and assists with learning in structured and unstructured environments (Mundy, 1995, 2016; Mundy & Newell, 2007). For example, an adult may point to and label a specific object of reference (i.e., a toy or an animal), and the infant makes a behavioral move (i.e., attending to the item) to form an underlying connection (i.e., the name of that item) through a social communicative framework. Though this example relies on the overt use of behavior, the early social cognitive foundations remain throughout development while the process becomes more fluid and more covert (see Mundy et al., 2017). Joint attention typically begins in early infancy and becomes increasingly complex within the first two years of life (Bakeman & Adamson, 1984). It contributes to early lexical, vocabulary, and language development (Baldwin, 1995; Mundy, Sigman et al., 1990; Tomasello, 1988) and develops into a core underlying process involved in human social engagement (Mundy, 2016; Mundy et al., 2017). Early and ongoing challenges with the development of joint attention are a hallmark feature of ASD (Mundy, 2016; Mundy et al., 2017), and investigating the relationship between joint attention (and later social cognition) and writing development across the lifespan may help to fill specific gaps in early and later writing development. Specifically, better understanding this relationship may support the social cognitive abilities required for writing practices and underlying writing knowledge. However, understanding these areas further may only be a component of broader writing development concerns, as Tomlinson and New-

man (2017) noted that not all writing challenges experienced by adults with ASD should be attributed to such underlying difficulties.

Perspectives from Individuals with LD or ASD

Much of the available research has focused on the writing done by individuals with LD or ASD rather than incorporating the perspectives and beliefs of these individuals into the research design. For individuals with LD, the role of knowledge in writing development remains relatively unstudied, with specific attention needed at the adolescent and young adult levels (Lin et al., 2007; Saddler & Graham, 2007). For individuals with ASD, research must echo the ongoing need to adopt flexible research designs that straddle medical and neurodiversity perspectives to include insights from autistic individuals across the lifespan (Kapp et al., 2013). Some research at the postsecondary level has argued that hearing from autistic individuals can inform writing instruction based off their demonstrated needs as opposed to diagnostic recommendations that often leave writing too narrowly conceptualized and fail to properly account for autistic individuals' own writing strengths and challenges (Gillespie-Lynch et al., 2020; Tomlinson & Newman, 2017; Walters, 2015). However, it is also important to note that while postsecondary attendance rates for individuals with ASD are increasing, attention should fall outside of educational contexts as well, including the need to look at prolific writers with ASD (Van Goidsenhoven, 2017). Further research is needed that incorporates perspectives that highlight strengths and challenges with producing writing across different writing genres for different purposes and that elucidate perspectives from the writers themselves as to their own processes and composing strategies. Incorporating further perspectives may help add to the understanding of what might be assumed incorrectly about writing development in individuals with LD or ASD by providing further insights into the complexity of skills involved with writing and how those skills change across the lifespan.

Focus on Strengths and on Development Beyond School-Based Genres

Predominantly through the school-age years and somewhat into postsecondary contexts, available empirical work has narrowly focused on in-school writing development, neglecting other contexts where writing development occurs throughout the lifespan. From the writer(s)-within-community framework (Graham, 2018), available research on writing development in LD or ASD has focused on cognitive mechanisms without much attention to the socially embedded contexts. Ongoing research needs to consider both the psychological processes and the so-

cial contexts that may impact writing development in individuals with LD or ASD across the lifespan. As not all individuals with LD or ASD experience difficulties with writing (or experience writing challenges to the same extent), further research is needed that is guided by both researchers and informed community stakeholders on helping to identify sources of interindividual and intraindividual strengths and challenges with writing development that draw from different methodological perspectives (e.g., Zajic & Poch, this volume). Accounting for the various lifespan trajectories requires balancing social and psychological factors that affect development across the lifespan to understand the highly varied writing profiles of individuals with LD or ASD, to capture how these individuals navigate their writing experiences, and to combine approaches from researchers and community members to identify the challenges and to support the strengths that emerge for individuals with LD or ASD across the lifespan beyond school contexts.

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