PERCEPTIONS OF SPECIAL EDUCATION TEACHERS AND BOARD-CERTIFIED BEHAVIOR ANALYSTS ON SELF-DETERMINATION FOR ELEMENTARY-AGED CHILDREN WITH COMPLEX COMMUNICATION NEEDS

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Special education teachers and Board Certified Behavior Analysts play an important role in supporting the development of self-determination skills for children and youth with disabilities, including at the elementary level. This study used a web-based survey to evaluate the views of special education teachers and BCBAs on self-determination for elementary-aged children with complex communication needs. A total of 166 special education teachers and BCBAs participated. Special education teachers and BCBAs rated the importance of various domains of self-determination for children with complex communication needs and reported on the self-determination capacities and opportunities of individual children with complex communication needs that they served. Results indicated that special education teachers and BCBAs both reported high levels of importance for all domains of self-determination, with no significant differences between the two groups. However, when reporting on the capacities and opportunities of individual children, BCBAs' ratings were significantly lower than special education teachers' ratings. Children's use of robust language-based communication systems (e.g., speech, sign, high-tech aided augmentative and alternative communication [AAC]) was found to be a significant factor associated with special education teachers' ratings of

students' capacities and opportunities for self-determination, but not BCBAs. Implications for future research and practice are discussed, including those related to the need for practitioner support for creating goals that target self-determination.

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CHAPTER 1

INTRODUCTION

The concept of self-determination is based on the belief that every person, regardless of their disability status, has the right to make decisions and express agency over their life (Shogren et al., 2015). This is a core belief that guides policy and practice to support individuals with disabilities. Although this has not been the case historically, position statements from leading organizations for people with intellectual and developmental disabilities emphasize that (a) people with disabilities have the same right to self-determination as those without disabilities, and that (b) parents, educators, and other community stakeholders should take steps to ensure people with disabilities are given the support and opportunities to maintain control over their life (American Association on Intellectual and Developmental Disabilities and The Arc of the United States, 2018). Respect for the inherent human dignity and emphasis on protecting autonomy and self-agency of people with disabilities is also emphasized by the United Nations from their convention on the Rights of Persons with Disabilities (United Nations, 2007).

There are different frameworks that describe self-determination for people with disabilities. One important theory is casual agency theory (Wehmeyer, 1992; Shogren et al., 2017). Based on this theory, self-determination is conceptualized as a dispositional characteristic that is displayed when people act as the causal agent in their lives (Shogren

et al., 2017). In other words, casual agency means that people act in accordance with freely chosen goals through self-determined actions. Self-determined people take volitional action (i.e., make intentional choices based on preferences and without undue external influence), show agentic capabilities (i.e., demonstrate capacities to identify pathways and direct their action to achieve desirable outcomes), and have action-control beliefs (i.e., have a sense of personal empowerment, believing they have what it takes to achieve their chosen goals) (Shogren et al., 2017). This framework suggests that individuals are presented with situations, including both opportunities and threats, where they have the ability to act upon their casual agency through skills such as choice-making, decision-making, problem-solving, goal-attainment, preference identification, self-management, self-advocacy, self-awareness, self-efficacy, and self-observation (Shogren et al., 2017; Wehmeyer & Shogren, 2016).

Another important theory is Mithaug and colleagues' (2003) self-determined learning theory. Although it shares many similarities with casual agency theory, self-determined learning theory focuses more on the process itself for students to become self-determined. This theory suggests that individuals develop self-determination through (a) the opportunities available to them to practice, grow, and demonstrate self-determination, and (b) their capacities for self-determination, which includes that individuals' own knowledge, abilities, and perceptions (Mithaug et al., 2003; Shogren et al., 2008). Thus, it is important to attend both to children's opportunities and capacities for self-determination.

Supporting individuals with disabilities to be self-determining is a critical part of ensuring their flourishing across the lifespan. During the transition to adulthood, for example, promoting self-determination can improve employment outcomes, financial independence, access to reliable transportation, and greater quality of life overall (Shogren, et al., 2013; Wehmeyer & Schwartz, 1998; Wehmeyer, 2020). A primary goal of special education services and intensive behavior interventions is to increase access to communities, promote positive postsecondary outcomes, and increase educational opportunities (The Individuals with Disabilities Education Act, 2004). Therefore, all providers working with children with disabilities have professional obligation to utilize strategies, interventions, and practices that promote the long-term success of the individual, including providing opportunities and building children's capacities to be self-determining.

Self-Determination for Children with Complex Communication Needs

Self-determination is important for all people, including people with disabilities who have complex communication needs. The term "complex communication needs" is used to describe individuals with disabilities who are unable to use speech to meet their day-to-day communication needs, including individuals who are entirely nonspeaking and individuals who do use some natural speech for communication (Beukelman & Light, 2020; Da Fonte & Boesch, 2018). Many children with developmental disabilities

such as autism, Down syndrome, cerebral palsy, intellectual disability, and multiple disabilities have complex communication needs, and these children often use augmentative and alternative communication (AAC) instead of or alongside speech (Beukelman & Light, 2020). AAC includes any way of communicating other than speech, divided into modes of communication described as unaided or aided. Unaided AAC refers to modes of communication that do not involve tools outside the body, such as gestures, nonword vocalizations, eye gaze, and manual signs. Aided AAC refers to using tools outside the body for communication, which can range from being low-tech (e.g., picture symbols in the form of communication boards or books) to high-tech (e.g., tablet computers or dedicated devices that act as speech-generating devices). Although all forms of communication are valuable, some forms of communication allow greater access to vocabulary and use of grammar that can empower individuals to more effectively communicate more complex ideas. More specifically, robust language-based communication systems can be thought of those forms of communication (both speech and AAC) that provide the communicator with greater language access, which can include use of spoken words, sign language, and/or high-tech aided AAC (Beukelman & Light, 2020; Da Fonte & Boesch, 2018).

Understanding the importance of self-determination for children with complex communication needs requires considering the intricate connections between communication and self-determination. Importantly, communication is a fundamental human right for all, regardless of disability or communication skills or modality—

including the rights to expression, opinion, and access to information (Brady et al., 2016; United Nations, 2007). Ensuring everyone has the right to communicate is a necessary support to promoting self-determination skills such as self-advocacy, problem-solving, choice-making, and decision-making (Donaldson et al., 2023). Protecting communication access from an early age, including through AAC technologies, is a critical part of helping children become self-determining because these technologies, paired with effective instruction and support, can promote their communicative competence. Communicative competence means that children have sufficient skills, knowledge, and ability to make communicative decisions within their environment and overcome communication barriers (Da Fonte & Boesch, 2018; Light & McNaughton, 2014).

Self-Determination for Elementary-Aged Children

It important that educators and service providers support the development of all children's opportunities and capacities for self-determination when children are young, including children with complex communication needs. This is because self-determination begins in early childhood and then continues to develop throughout the school years (Palmer et al., 2017). There are many evidence-based interventions to support self-determination opportunities and capacities for adolescents with disabilities, and self-determination is often the focus of transition services within Individualized Education Programs (IEPs) for older children. For instance, the Self-Determined

Learning Model of Instruction (SDLMI) is one of the most researched and utilized approaches to self-determination instruction for adolescents. SDLMI is a student-led intervention that utilizes goal setting and attainment to promote self-determination (Burke et al., 2020; Shogren et al., 2019; Wehmeyer et al. 2013; Wehmeyer, Palmer et al., 2000) Additionally, there are many other interventions designed for adolescents to build self-determination, such as persuasive writing for self-advocacy, family-centered transition planning, and student-directed transition planning (Cuenca-Carlino et al., 2013; Cuenca-Sanchez et al., 2012; Hagner et al., 2012; Lee et al., 2011).

Compared to interventions for older youth with disabilities, there has been considerably less focus on identifying evidence-based self-determination interventions for elementary-aged children; however, these practices do exist. For example, there are many book series that provide children with the opportunity make choices to determine the outcome of the story (Cote et al., 2014). Educators and service providers can also support elementary-aged children in developing self-advocacy skills by having children participate actively in their Individualized Education Program (IEP) meetings (Neale & Test, 2009; Sanderson & Goldman, 2022), and they can use interventions that target self-regulated problem solving and goal setting (Palmer & Wehmeyer, 2003). Additionally, SDLMI has been adapted as an elementary version to support educators with tools to improve their self-determination skills and attitudes through goal setting (Pulos et al., 2023; Palmer & Wehmeyer, 2002). Yet, it is important to recognize that much of the research focused on self-determination for younger children with disabilities has

excluded children with complex communication needs or has failed to directly address how to best support younger children with complex communication needs to have the opportunities, attitudes, and skills they need to become self-determining.

Practitioner Views on Self-Determination for Elementary-Aged Children with Complex Communication Needs

The views of educators and service providers about self-determination are crucial since these stakeholders have such critical roles in proving opportunities and instruction to build children's capacities for self-determination. Several researchers have explored special educator views on self-determination for secondary-level students with intellectual and developmental disabilities, finding that educators report (a) moderate to high levels of importance for different domains of self-determination and (b) a strong relation between ratings of importance and self-determination instructional time (e.g., Carter et al.., 2008; Grigal et al., 2003). However, available research on practitioner views of self-determination is limited in its scope, and there has been considerably less focus on understanding practitioners' views about self-determination for elementary-aged students with complex communication needs, beyond demonstrating its importance. For example, Stang et al. (2009) surveyed general and special education teacher's perceptions of self-determination for all elementary and middle school students (not just with disabilities). They found that special and general education teachers perceived self-

determination to be an important priority for curriculum and instruction, and most reported teaching self-determination skills in their classroom. In another study, Cho and colleagues (2011) found even higher elementary teacher views about the importance of self-determination, and higher knowledge and use of interventions to promote self-determination from special education teachers than Stang et al. However, there is no known research that has focused specifically on practitioner views about elementary aged children with complex communication needs.

Although the views of all practitioners are important, special education teachers and board-certified behavior analysts (BCBAs) are two especially important practitioner groups to understand perceptions about self-determination for children with complex communication needs. Both special education teachers and BCBAs have frequent opportunities to support self-determination naturally within practice, such as though choice-making interventions, client input, visual communication analysis, and determining post-school outcomes (Shkedy et al., 2020; Wehmeyer et al., 2004). Additionally, as applied behavior analysis (ABA) services rapidly expand in educational settings, the collaboration between special education teachers and BCBAs is crucial for the success of their shared children. Effective collaboration will support intervention consistency and multiple perspectives within child programming (McLeskey, et al., 2017). Therefore, research that examines the similarities and differences in special educator and BCBA views about self-determination for students with complex

communication needs could provide an important first step in building an understanding of what might be needed to promote collaboration and positive student outcomes.

Study Purpose

The purpose of this study was to examine the perspectives of special education teachers and BCBAs about self-determination for elementary-aged children with complex communication needs (i.e., kindergarten to fifth grade). I addressed the following research questions:

1. What are the general perspectives of special education teachers and BCBAs about self-determination for elementary-aged children who have complex communication needs?
2. How do special education teachers and BCBAs perceive the importance of different domains of self-determination (e.g., choice-making, self-advocacy, problem solving) for elementary-aged children with complex communication needs, and are there differences between teachers and BCBAs?
3. How do special education teachers and BCBAs describe the self-determination capacities and opportunities of individual children with complex communication needs?

4. What child and practitioner-related factors are associated with differences in how teachers and BCBAs view children's capacities and opportunities for self-determination?

This research was exploratory and descriptive, and so I did not have specific hypotheses. However, for the fourth research question, I was specifically interested in whether any of the following factors were associated with differences in how special education teachers and BCBAs viewed children's capacities and opportunities for self-determination: (a) practitioners' *formal* training in AAC (as coursework or professional development from the district in the last 3 years), (b) practitioners' *informal* training in AAC (as self-initiated training in the last 3 years), (c) whether or not the child had autism, (d) whether or not the child used any verbal speech for communication (i.e., any spoken words), and (e) whether or not the child regularly used a robust language-based communication system (i.e., spoken words, sign language, high-tech aided AAC).

CHAPTER II

METHOD

Participants

To be included in this survey-based study, individuals had to be a practicing special education teacher or BCBA who: (a) worked with children with complex communication needs in kindergarten to fifth grade and (b) worked in the United States. In the survey, respondents self-declared whether they worked with elementary-aged children with complex communication needs, which was defined for respondents as students/clients who were either nonspeaking or had limited functional verbal speech. We explained in the survey that children with complex communication needs might use some speech (e.g., single words, short phrases) or not speak at all. We explained that these children might use various forms of AAC such as gestures, manual signs, eye gaze, vocalizations, facial expressions, communication boards or books, picture symbols, or speech-generating devices, and that the categorization of having complex communication needs included many children with autism, Down syndrome, cerebral palsy, and other intellectual and developmental disabilities.

A total of 166 practitioners participated in the study, which included 97 special education teachers and 69 BCBAs. There were a total of 441 "hits" to the survey (i.e., a "hit" was a respondent who accessed the survey and provided a response to at least one survey item); however, 71 respondents did not meet inclusion criteria and an additional

29 cases were removed as known or suspected bots (Goodrich et al., 2022). After eliminating ineligible respondents, an additional 175 potential participants had to be excluded because they only completed a few survey items (e.g., related to their demographic characteristics), and they did not complete survey items directly related to the research questions. Therefore, the remaining 166 respondents were included as participants.

Participant characteristics are reported in Table 1. The 166 participants represented 45 out of the 50 states within the United States. Participants self-reported their race/ethnicity as White (87.3%), Hispanic or Latino (6%), Black or African American (1.8%), American Indian or Alaskan Native (1.2%), Asian (1.2%), multiracial/multiethnic or prefer to self-describe (1.2%) and prefer not to say (1.2%). Related to highest level of education, special education teachers reported having a bachelor's degree (19.6%), master's degree (73.2%), educational specialist degree (4.1%), and doctoral degree (2.1%). BCBAs reported having a master's degree (89.8%), educational specialist degree (2.9%), and doctoral degree (7.2%). Importantly, we asked participants if they were dually-licensed. A total of 62.9% of special education teachers also held general education licensure, and 21.6% were also credentialed BCBAs. For BCBAs, a total of 11.4% also held special education licensure, and 4.8% held general education licensure. When participants were credentialed or licensed as both a special education teacher and BCBA, they were asked to report which role best reflected their current position, and that information was used to determine their role for this study.

Table 1

Participant Characteristics

	Teachers ($n = 97$)	BCBAs ($n = 69$)
	%	%
Gender		
Female	88.7	88.4
Male	8.2	10.1
Non-binary	2.1	1.4
Prefer to self-describe	1.0	0
Years of experience		
1-3	10.5	30.4
4-10	36.8	49.3
11-20	29.5	14.5
>20	23.2	5.8
Location		
Suburban	50.5	55.1
Urban	25.8	26.1
Rural	23.7	18.8
Student IDEA disability category(s)[a]		
Autism	87.6	95.7
Developmental delay	64.9	76.8
Intellectual disability	58.8	66.7
Speech or language impairment	50.5	53.6
Multiple disabilities	43.3	49.3
Other health impairment	30.9	21.7
Orthopedic impairment	22.7	7.2
Hearing impairment	21.6	14.5
Specific learning disability	20.6	26.1
Visual impairment	18.6	10.1
Traumatic brain injury	17.5	11.6
Emotional disturbance	16.5	23.2
Deafness	13.4	4.3
Deaf-blindness	12.4	2.9
Functional delay	11.3	10.1
Student communication mode(s)[a]		
Facial expression including eye contact	77.3	72.5
Body movements	73.2	68.1
Vocalizations (sounds)	80.4	85.5
Gestures	86.6	79.7
Manual sign (e.g. ASL[b], signed American English)	44.3	63.8
Communication board with pictures	61.9	65.2
Individual picture symbols	49.5	53.6
Speech-generating device (with fewer than 25 symbols)	45.4	47.8
Speech-generating device (with 25 or more symbols and/or dynamic display)	58.8	66.7
Written words	20.6	21.7
Spoken words	53.6	73.9

Related to setting, special education teachers primarily reported teaching entirely in special education settings (49.5%); other teachers reported teaching mostly in special education (27.8%), equally in general and special education (17.5%), mostly in general education (3.1%), or entirely in general education (2.1%). Most teachers (75.3%) taught in a neighborhood school for students with and without disabilities (75.3%), but 17.5% taught in a specialized school for students with disabilities and 7.2% in an alternative school for students with and without disabilities. For BCBAs, many reported being employed by a school or district (43.5%), and another 18.8% worked in school settings even though they were employed privately, rather than by the district. A total of 31.9% reported that they did not work in a school setting but regularly collaborated with schools about clients, and only 5.8% reported they did not work in or collaborate with educators in school settings at all. Special education teachers and BCBAs both reported widely varying caseload sizes. Special education teachers reported a median caseload size of 7 (*IQR* = 6), and BCBAs reported a median caseload size of 7 (*IQR* = 11).

Special education teachers and BCBAs reported information regarding educational coursework and professional development (PD) opportunities for supporting children with complex communication needs who use AAC. A total of 48.5% of teachers and 65.2% of BCBAs had completed AAC-related coursework prior to the last ten years, 11.3% of teachers and 10.1% of BCBAs within the last three to ten years, 21.6% of teachers and 15.9% of BCBAs within the last three years, and 18.6% of teachers and

8.7% of BCBAs had never completed educational coursework related to AAC. Additionally, special education teachers and BCBAs reported if they received formal or informal PD (i.e., either sponsored by their district or employer, or self-initiated). A total of 48.5% of teachers and 50.7%, BCBAs reported participating in some form of PD focused on AAC in the last three years, 21.6% of teachers and 20.3% of BCBAs in the last 3-10 years, 1.0% of teachers and 5.8% BCBAs longer than 10 years ago, and 28.9% of teachers and 22.1% of BCBAs reported never having completed PD related to AAC.

Procedures

This research involved a web-based survey, which was developed through collaboration with my faculty research advisor. We utilized an iterative process that involved first identifying research questions and then using those research questions to guide the development of actual survey items. Throughout this iterative process, we reviewed and analyzed existing survey-based research on views of practitioners about self-determination (e.g., Carter et al., 2008; Carter et al., 2011; Lane et al., 2012; Stang, et al. 2008) and also solicited critical feedback from three practitioners with experience working with children with complex communication needs.

The full survey consisted of 89 items, but because of branching-logic, not all participants had to respond to all items (i.e., different questions were asked based on the respondent's role and their responses to previous questions). In total, the survey took

approximately 15 minutes to complete. We used REDCap to distribute the survey, which is a secure web-based platform for data management and survey questionnaires (Harris et al., 2009). The survey consisted of open- and closed-ended questions, but the open-ended questions were not analyzed and reported for the present study. There were four sections of the survey: (a) screening, (b) demographics, (c) defining self-determination, and (d) perceptions of self-determination. Although many survey questions were researcher-created, we also used the American Institutes for Research (AIR) Self-Determination Scale (Wolman et al., 1994) to examine participants' views about the self-determination opportunities and capacities of individual children with complex communication needs. Those who fully completed the survey were able to enter for a chance to win one of five $50 e-gift cards.

Participants were recruited after receiving approval from the Institutional Review Board (IRB) by disseminating study information in the form of electronic flyers with a hyperlink to the web-based survey through groups that had contact with potentially eligible special education teachers and BCBAs. I attempted to contact 198 organizations or groups, of which 15 agreed to disseminate information about the study on my behalf. These organizations or groups included state departments of education (n = 3), state-level associations for behavior analysis practitioners (n = 9), state-level associations for special education teachers (n = 2), and one University Center for Excellence in Developmental Disabilities. I also posted study information through Facebook groups for special education teachers and BCBAs (n = 12 different Facebook groups).

Measure

General Beliefs about Self-Determination

Participants responded to three survey items to explore their general beliefs about self-determination for individuals with complex communication needs. Each item used the response options of *yes*, *no*, or *I don't know*: (a) I believe all students/clients, regardless of their communication needs, can be self-determined, (b) I believe all students/clients can benefit from self-determination instruction and (c) Part of my responsibility as a teacher/BCBA is to support my student's/client's self-determination skills.

Importance of Self-Determination Across Different Domains

We used items from previous surveys of practitioner views on self-determination (Carter et al., 2008; 2011; Wehmeyer, Agran & Hughes, 2000) to evaluate how special education teachers and BCBAs perceived the importance of different domains of self-determination. Specifically, participants were asked to rate the importance of seven domains of self-determination (i.e., choice making, decision making, goal setting and attainment, problem solving, self-advocacy, self-awareness, and self-management) on a five-point Likert-type scale (1 = *not important*, 2 = *somewhat not important*, 3 = *somewhat important,* 4 = *important*, 5 = *very important*).

Views on Child Capacities and Opportunities for Self-Determination

We used the American Institutes for Research (AIR) Self-Determination Assessment Educator Form (Chou et al., 2015) to evaluate special education teachers' and BCBAs' views on self-determination capacities and opportunities for specific elementary-aged children with complex communication needs. Before completing the survey items, special education teachers and BCBAs were asked to think about one specific child with complex communication needs that they were currently serving who was in kindergarten to fifth grade. The AIR Self-Determination Assessment utilizes the self-determined learning theory to better understand the process and skills involved in becoming self-determined, specifically assessing the relationship between capacity (knowledge, abilities, and perceptions) and opportunities the promote child self-determination (Chou et al., 2015; Wolman et al., 1994). The AIR Self-Determination Assessment has demonstrated strong reliability and validity in previous studies (Chou et al., 2015; Shogren et al., 2008).

More specifically, the AIR Self-Determination Assessment (educator form) includes 33 questions that are divided between the subdomains (knowledge, ability, perception, opportunity at school) as well as 3 open-ended questions that were not utilized for this survey. Each subdomain contained six questions that describe characteristics, behaviors, or opportunities that support self-determination. In accordance with the design of the AIR Self-Determination Assessment, participants responded to each item using a five-point Likert-type scale, which ranged from 1 = *never* to 5 =

always. Scores were calculated by totaling the number of points (1-5) the child received for each rating to determine a total score and scores for each subscale. The higher the score, the higher levels of self-determination capacities and opportunities (Wolman et al., 1994).

Practitioner and Child-Related Factors

Participants reported their own personal and professional characteristics and reported characteristics of the child with complex communication needs for whom they completed the AIR Self-Determination Assessment. We used this information reported by participants to derive six variables of interest which we used to explore practitioner- and child-related factors that might influence practitioners' views about children's capacities and opportunities self-determination: (a) whether the practitioner had completed formal AAC coursework or PD within the last three years (1 = *formal AAC course/PD*, 0 = *no formal AAC coursework/PD*), (b) whether the practitioner had completed self-initiated AAC training within the last three years (1 = *self-initiated AAC training,* 0 = *no self-initiated AAC training*), (c) whether the child used verbal speech to communicate (1 = *any spoken words*, 0 = *no spoken words*), (d) whether the child regularly used a robust language-based communication system (1 = *use of speech, signs, and/or high-tech AAC often or more,* 0 = did not use speech, signs, and/or high-tech AAC often or more), (e) whether the child had autism (1 = *autism diagnosis,* 0 = *no autism diagnosis*), and (f) student age (as a continuous variable based on age in years).

Data Analysis

The first research question was only descriptive, and so we used frequencies to identify the percentage of special education teachers and BCBAs who responded different ways (i.e., *yes*, *no*, *I don't know*) to each of the questions. We used a combination of descriptive and inferential statistics to address the second research question. Fist, we calculated percentages of special education teachers and BCBAs based on how they responded about their views on the importance of each domain of self-determination (i.e., choice making, decision making, goal setting, problem-solving, self-advocacy, self-awareness, and self-management). Because the distribution of participants' responses to these items were skewed, we used nonparametric analyses that do not make assumptions about normal distributions of the dependent variables (Conover & Iman, 1981). Specifically, we used a series of two-tailed Mann-Whitney U tests to evaluate whether there were differences between special education teachers and BCBAs in how they rated the importance of each domain. To address the third research question, we synthesized the information reported by special education teachers and BCBAs about individual child characteristics (e.g., disability category, communication skills) and then calculated AIR Self-Determination Assessment subdomain (knowledge, ability, perception, and opportunity) and total scores. Descriptive statistics were used to report the mean, minimum/maximum and standard deviations for each subdomain and the AIR

Self-Determination total scores. A Mann-Whitney U test was used to analyze the difference between teacher-reported and BCBA-reported total AIR self-determination scores.

Finally, to address the fourth research question, we used a series of two-tailed Mann-Whitney U tests to explore whether any practitioner- or child-related factors might explain differences in teacher and BCBA views on children's self-determination capacities and opportunities. A nonparametric approach was necessary because the distribution of the AIR Self-Determination scale was significantly non-normal (p = <.001) based on a Shapiro-Wilk's test (Shapiro & Wilk, 1965) and a visual inspection of a histogram and normal Q-Q plot. Therefore, we treated the total AIR Self-Determination score as the dependent variable (separating special education teachers and BCBAs, rather than analyzing them as one group) and calculated separate Mann-Whitney tests exploring whether each factor of interest was associated with significant differences in teacher and/or BCBA reports of child capacities and opportunities for self-determination. The factors that were of interest were: (a) whether special education teachers had completed formal AAC coursework or professional development from their school/district in the last 3 years, (b) whether practitioners had completed self-initiated AAC training in the last 3 years, (c) whether the child they were reporting on used any verbal speech (i.e., any spoken words), (d) whether the child they were reporting on had an autism diagnosis, and (e) whether the child they were reporting on regularly used a robust language-based communication system (i.e., signs, spoken words, high-tech aided AAC). Lastly, a

Spearman correlation was used to explore if child age was associated with practitioners' views on children's opportunities and capacities for self-determination capacity. Even though our use of multiple tests can increase the likelihood of finding a significant result, we still retained use of an alpha of .05 to determine significance for all inferential statistical tests due to the exploratory and descriptive nature of the research (Bender & Lange, 2001).

CHPATER III

RESULTS

Teacher and BCBA General Beliefs Regarding Self-Determination

Descriptively, special education teachers had slightly higher beliefs that all students/clients can be self-determined than BCBAs, with 94.8% of teachers and 85.5% of BCBAs saying they believed all children can become self-determined. BCBAs were more likely to report not knowing if all children can be self-determined, with 11.6% of BCBAs and 2.1% of teachers saying that they did not know how they felt about this statement. Only 3.1% of teachers and 2.9% of BCBAs reported believing that *not* all children can become self-determined.

When asked if they believe that all children can benefit from instruction on self-determination, special education teachers reported *yes* (94.8%), *no* (2.1%) and *I don't know* (2.1%). In response to the same question, BCBAs reported *yes* (84.1%), *no* (1.4%), and *I don't know* (14.5%). Both special education teachers and BCBAs largely reported believing it was their responsibility to support child self-determination skills, with 96.9% of teachers and 97.1% of BCBAs agreeing with this statement.

Views about the Importance of Different Domains of Self-Determination

Figure 1 displays descriptive findings about how special education teachers and BCBAs rated the importance of seven different domains of self-determination (e.g., choice making, decision making, self-advocacy) for children with complex communication needs. Most, but not all, of the special education teachers and BCBAs rated all of the domains as being either *very important* or *important*. More specifically, the percentage of special education teachers and BCBAs rating each domain as either very important or important were: decision making (96.9% of special education teachers and 94.2% of BCBAs), problem solving (96.9% of special education teachers and 88.4% of BCBAs), choice making (96.6% of special education teachers and 95.7% of BCBAs), self-management (95.9% of special education teachers and 88.4% of BCBAs), self-awareness (93.8% of special education teachers and 91.3% of BCBAs), self-advocacy (92.8% of special education teachers and 97.1% of BCBAs), and goal setting and attainment (81.5% of special education teachers and 72.5% of BCBAs).

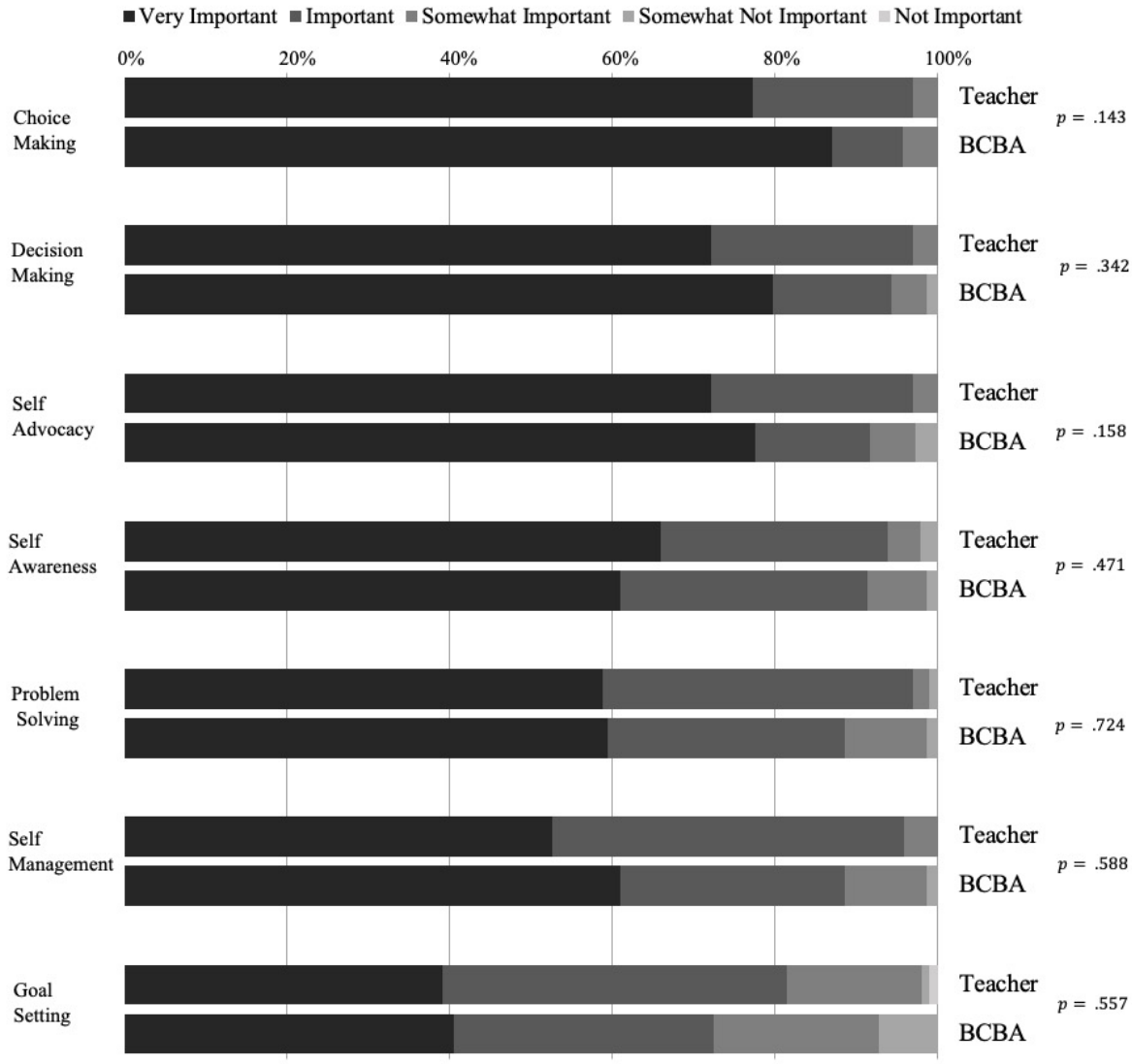

Figure 1. Percentage of Importance for Domains of Self-Determination

Based on the results of the Mann-Whitney U tests, there were no significant differences between special education teachers and BCBAs in how they saw the

importance of any of the domains of self-determination (decision-making: $p = .342$, $U = 3{,}128.5$, $z = -.951$; problem-solving: $p = .724$, $U = 3{,}253.0$, $z = -.353$; choice-making: $p = .143$, $U = 2{,}043.5$, $z = -1.466$; self-management: $p = .588$, $U = 3{,}201.0$, $z = -.542$; self-awareness: $p = .471$, $U = 3{,}150.6$, $z = -.721$; self-advocacy: $p = .158$, $U = 3{,}025.0$, $z = -1.418$; goal setting and attainment: $p = .557$, $U = 3{,}170.5$, $z = -.588$).

Views about Self-Determination Capacities and Opportunities for Individual Children

Special education teachers and BCBAs completed the AIR Self-Determination Assessment by thinking about any individual child on their caseload with complex communication needs who was in kindergarten to fifth grade. Table 2 reports information about child IDEA disability categories, number of spoken words, and primary communication modes for each individual child that each teacher or BCBA decided to identify for their completion of the AIR Self-Determination Assessment. Nearly all of the special education teachers (95.2%) and BCBAs (100.0%) reported the child they were reporting on was a multimodal communicator, meaning they had more than one mode of communication that they used regularly (e.g., prelinguistic communication and low-tech AAC). Related to additional characteristics of the children identified by special education teachers and BCBAs, children ranged from kindergarten to fifth grade (20.5% of children identified by special education teachers and BCBAs were in kindergarten; 13.9% in first grade; 21.1% in second grade; 10.8% in third grade; 9.6% in fourth grade, and 13.9% in

fifth grade). They ranged in age from 5 to 12 years (M = 7.7 years). BCBAs and special education teachers reported that most children (67.6%) spent most or all their school day in special education settings. For the other children, 17.6% spent greater than or equal to 80% of their time in general education settings, 14.9% spent 40-79% of their time in general education settings, 39.2% spent some time, but less than 40% of their time in general education settings, and 28.4% spent no time in general education settings.

Table 2

Teacher and BCBA-Reported Characteristics of Individual Students with Complex Communication Needs

	Teachers ($n = 97$)	BCBAs[a] ($n = 69$)	All ($n = 97$)
	%	%	%
Student IDEA[b] disability category[c]			
Autism	57.7	69.6	62.7
Deaf-blindness	3.1	0.0	1.8
Deafness	5.2	2.9	4.2
Developmental delay	16.5	23.2	19.3
Emotional disturbance	6.2	5.8	6.0
Hearing impairment	4.1	4.3	4.2
Intellectual disability	19.6	14.5	17.5
Multiple disabilities	17.5	7.2	13.3
Orthopedic impairment	7.2	0.0	4.2
Other health impairment	4.1	7.2	5.4
Specific learning disability	3.1	1.4	2.4
Speech or language impairment	16.5	20.3	18.1
Traumatic brain injury	2.1	1.4	1.8
Visual impairment	7.2	1.4	4.8
Number or spoken words			
None	49.5	34.8	43.4
< 10	12.4	13.0	12.7
10-20	13.4	13.0	13.3
20-50	9.3	8.7	9.0
50-100	5.2	10.1	7.2
> 100	3.1	4.3	3.6
Communication mode (reported used often or always)[d]			
Prelinguistic (e.g., nonword sounds, gestures, facial expressions, body movements)	62.9	56.5	60.3
Low-tech AAC[e]	25.7	11.5	19.9
Simple speech-generating devices	14.4	11.6	13.2
High-tech speech-generating devices	46.4	24.6	37.4
Spoken Words	21.7	18.8	20.5
Sign Language	9.3	10.1	9.6

[a]BCBA = Board Certified Behavior Analyst. [b]IDEA = Individualized with Disabilities Education Act. [c]Sums are greater than 100% because participants can select multiple disability categories. [d]Participants reported all modes of communication used by their selected child. [e]AAC = Augmentative and alternative communication

Table 3 depicts practitioner-reported AIR Self-Determination Assessment scores for the individual children with complex communication needs, including for each subscale (i.e., knowledge, ability, perception, opportunity). Practitioner views on self-determination capacities and opportunities for these children were wide-ranging. Both special education teachers and BCBAs rated children's opportunities for self-determination (M = 17.9) as being higher than their capacities, with capacities including children's knowledge (M = 10.7), abilities (M = 11.9), and perceptions for self-determination (M = 11.9). Descriptively, special education teachers reported higher AIR Self-Determination scores for children than BCBAs, including across each of the subdomains. Additionally, based on the results of the Mann-Whitney U test, there were statistically significant differences (p = .002, U = 1792, z = *-3.074*) between teacher- and BCBA-reported AIR Self-Determination total scores for their child with special education teachers reporting significantly higher perceptions of their child's capacities and opportunities for self-determination (teacher *Mdn* = 59.2; BCBA *Mdn* = 46.9).

Table 3

Practitioner-Reported AIR Self-Determination Scores for Individual Children with Complex Communication Needs

	Teachers ($n = 97$)		BCBAs ($n = 69$)		All ($n = 166$)	
	M (SD)	Min-Max	*M (SD)*	Min-Max	*M (SD)*	Min-Max
Knowledge	11.5 (5.1)	6-23	9.6 (4.2)	6-18	10.7 (4.9)	6-23
Ability	12.6 (5.0)	6-24	10.7 (4.2)	6-20	11.9 (4.9)	6-24
Perception	12.9 (5.4)	6-27	10.3 (4.7)	6-22	11.9 (5.5)	6-27
Opportunity	19.1 (5.4)	8-30	16.1 (6.0)	7-28	17.9 (5.9)	7-30
Total	56.2 (17.9)	26-97	46.9 (15.4)	26-75	52.6 (17.5)	26-97

Child and Practitioner Factors Associated with Views on Capacities and Opportunities for Self-Determination

Table 4 displays results of the Mann-Whitney U tests which were used to explore child- and practitioner-related factors that might be associated with practitioner views on children's capacities and opportunities for self-determination. For special education teachers and BCBAs, participating in recent AAC-related training (within the last 3 years) was not associated with differences in their total AIR Self-Determination Assessment scores for children, including participation in formal coursework or professional development (p = .324 for special education teachers and p = .643 for BCBAs) or self-initiated training (p = .368 for special education teachers and p = .121 for BCBAs). For child-related factors, there were also not differences for teachers or BCBAs related to whether the child they identified used any verbal speech for communication (p = .113 for special education teachers and p = .313 for BCBAs) or had an autism diagnosis (p = .163 for special education teachers and p = .543 for BCBAs). Additionally, the results of the Spearman correlation evaluating potential association with child age showed that child age was not significantly associated with total AIR Self-Determination Assessment scores for either special education teachers (p = .122) or BCBAs (p = .798). However, there were significant differences for special education teachers in total AIR Self-Determination scores based on whether their child regularly used a robust language-based communication system, which included high-tech AAC, signs, or verbal speech.

special education teachers reporting on children who regularly used one or more of these language-based communication systems had significantly higher perceptions of children's capacities and opportunities for self-determination (*Mdn* = 50.86 for the total AIR self-determination scale) than children who did not (*Mdn* = 34.78) ($p = .006$). However, there were not differences for BCBAs related to whether they reported if children regularly used one of these language-based communication systems, compared to children who did not ($p = .994$).

Table 4

Practitioner and Student Predictors

	Teachers					BCBAs				
	n	*Mdn*	*U*	*Z* score	*p*	*n*	*Mdn*	*U*	*Z* score	*p*
Formal coursework/PD in the last 3 years										
Yes	50	47.93	878.5	-9.87	.324	34	29.84	362.5	-.464	.643
No	40	42.46				23	27.76			
Self-initiated training in the last 3 years										
Yes	47	43.13	899.0	-.901	.368	43	30.94	217.5	-1.549	.121
No	43	48.09				14	23.04			
Student uses verbal speech for communication										
Yes	42	41.42	812.0	-1.586	.113	34	30.82	329.0	-1.009	.313
No	48	50.17				23	26.30			
Student regularly uses verbal speech, high-tech AAC, and/or sign language										
Yes	60	50.86	578.5	-2.753	.006*	31	28.98	402.5	-.008	.994
No	30	34.78				26	29.02			
Student has an autism diagnosis										
Yes	56	42.51	784.5	-1.394	.163	47	28.38	206.0	-.609	.543
No	34	50.43				10	31.90			

*$p < .05$

CHAPTER IV

DISCUSSION

Although prior research has examined practitioner views about self-determination for other groups of children (Carter et al., 2008; Cho et al., 2010; Grigal et al., 2003; Stang et al., 2008) there have been no known prior studies evaluating the perceptions of special education teachers and BCBAs' about self-determination for elementary-aged children with complex communication needs. The development of self-determination skills is important for everyone, with and without disabilities (Wehmeyer, 2020). For individuals with disabilities, greater self-determination is associated with stronger outcomes in adulthood, including independent living, financial independence, employment, and more (Shogren, et al., 2013; Wehmeyer & Schwartz, 1998; Wehmeyer, 2020). Although greater emphasis has been placed on self-determination for older children with disabilities in middle and high school settings, it is important that educators and service providers working with younger, elementary-aged children also ensure the opportunities and instruction needed for children to become self-determining (Palmer et al., 2017).

In this study, we surveyed special education teachers and BCBAs across the United States on their general beliefs about self-determination for children with complex communication needs, as well as their views about the opportunities and capacities for self-determination of individual children in the elementary grades. Results indicated that

special education teachers and BCBAs found different domains of self-determination (e.g., choice-making, decision-making, self-advocacy, self-awareness, problem-solving, self-management, and goal setting) to be important for elementary-aged children with complex communication needs. However, practitioners' view varied widely when asked about individual children's capacities and opportunities for self-determination. This study provides exploratory information on practitioners view for this population of individuals that will expands previous research, encourages future research, and offers implications for practice.

First, BCBA and teacher ratings on the importance of the domains of self-determination highlight an important shared understanding: providers across both of these groups largely believe that these skills and opportunities matter for children with complex communication needs. Aligned with this belief, nearly all special education teachers (96.9%) and BCBAs (97.1%) believed that it was their responsibility to support children's self-determination skills. However, BCBAs were more likely than special education teachers to report not knowing if all children can become self-determined. Taken together, these findings suggest that special education teachers and BCBAs see self-determination as important for children, although BCBAs may be more likely than special education teachers to be unsure if becoming self-determining is a reasonable goal to expect for all children with complex communication needs. Teacher and BCBA beliefs play important roles in the instruction and opportunities provided to children. However, in previous research, Burke et al. (2024) found that IEPs for students with autism,

intellectual disability, and other developmental disabilities—from elementary school to high school— rarely included specific goals addressing self-determination skills. Therefore, these findings taken together suggest there may be a gap in what special education teachers believe important and what occurs in practice as it relates to prioritizing self-determination instruction. Additionally, there is a gap between the views of these practitioners about the importance of self-determination and the relative lack of research in the area of self-determination for children with complex communication needs. This study is important because it adds to the existing literature evaluating the importance of self-determination across populations, settings, and professionals, all of which builds to a general consensus that these skills are important for everyone (Carter et al., 2008; 2011; Shogren, et al., 2013; Wehmeyer & Schwartz, 1998; Wehmeyer, 2020).

Second, practitioner views varied widely when asked to report their perceptions of self-determination capacities and opportunities for individual children with complex communication needs. Descriptively comparing subdomain scores within the AIR Self-Determination Assessment, we found that both special education teachers and BCBAs reported lower perceptions of children's capacities for self-determination (i.e., child knowledge, abilities, and perceptions), compared to opportunities for self-determination. Further, BCBAs as a group reported lower ratings of self-determination for the individual children that they were thinking of than special education teachers did for their children. A potential explanation for this finding might be that the characteristics of children for special education teachers and BCBAs were different (e.g., greater behavioral challenges

for BCBA clients), and we did not collect data that would allow us to determine whether or how children reported on by the different practitioners varied in all of the different potential ways. However, another possible explanation for this finding that should be considered is that there might be differing views within the fields of special education and behavior analysis regarding how children with complex communication needs are viewed, including their potential and their needs (Harvey et al., 2010). Importantly, there is little research in the field of ABA providing guidelines or interventions to specifically target self-determination. Instead of looking at the skills of self-determination as a whole, there is literature that addresses individual skills on their own (e.g. choice-making (Shkedy et al., 2020; Wehmeyer et al., 2004). Therefore, there is a need for further research specifically exploring issues related to self-determination for ABA practitioners, including for children with complex communication needs.

Third, although many questions remain about the children, practitioner, or other factors that shape practitioners' views about the self-determination capacities and opportunities of different children, it appears that access to robust language-based communication systems may play a role. We were interested to see if practitioner AAC-related training, child age, child autism diagnosis, child use of verbal speech, and/or child use of robust language-based communication systems (i.e., spoken words, signs, high-tech aided AAC) would explain differences in teacher and/or BCBA views about individual children's AIR Self-Determination scores. We were somewhat surprised to find most of these factors did not play a significant role in explaining variance in our

sample. It is important to recognize that nonsignificant findings can be difficult to interpret. For example, it is possible that we did not find significant differences in practitioners' views about individual child's self-determination based on these factors because these differences do not exist in the broader population. But, it is also possible that we did not find significant differences due to study limitations, most notably our modest sample size and the need to use simple non-parametric difference tests, rather than a multi-variate approach (e.g., multiple regression) due to the distribution of the data.

Although most of our difference tests did not reveal significant differences in teacher and BCBA views of individual children's capacities and opportunities for self-determination, we did find that special education teachers reporting on children who regularly used a robust language-based communication system (i.e., spoken words, signs, high-tech aided AAC) reported higher perceptions of children's opportunities and capacities for self-determination than special education teachers reporting on children who did not regularly use one of these communication systems. This suggests there may be important connections between children's access to using *language* for expression and their opportunities and capacities to be self-determining, even more than for other prelinguistic or less linguistically robust ways of communicating (e.g., low-tech communication boards). Although there is little other research focused on this connection, we posit that this finding might relate to important aspects of communicative competence that can be achieved by children who are at least starting to use robust,

language-based communication systems. With access to greater language (including, potentially, both vocabulary and grammar), these children may be more likely able to repair communication breakdowns, self-advocate, and communicate with novel communication partners (Da Fonte & Boesch, 2018; Light & McNaughton, 2014), all of which likely play important roles in how providers view children's capacities and opportunities for self-determination. Interestingly, we did not find a difference in the views of BCBAs based on whether they were reporting on a child who regularly used a robust language-based communication system like we did for special education teachers. Therefore, this is a topic that should needs to be explored further in future research.

Limitations and Directions for Future Research

Several limitations to this study should be considered when analyzing results, and these limitations also suggest important directions for further research. First, the small sample size of this survey limits the ability of the findings to be generalized to all practicing BCBAs and special education teachers. The demographics of participants in this study are not representative of all certified BCBAs' and special education teachers' racial or ethnic identities across the country. Nationally, 73.33% of BCBAs nation-wide are White, 12.86% are Hispanic/Latinx, 8.04% are Asian, 5.06% are Black, and less than 1% are American Indian/Alaska Native or Native Hawaiian/Pacific Islander (Behavior

Analyst Certification Board, 2024). As for special education teachers, 79.8% are White, 9.3% are Black, 5.22% are two or more races, 2.76% are Asian, less than 1% are American Indian/Alaskan Native or Native Hawaiian/Pacific Islander and 2.27% identify as other (United States Census Bureau, 2021). White participants were overrepresented in our study and Hispanic/Latinx, Black, and Asian practitioners were underrepresented. Additionally, there were a lot of potential respondents excluded because they did not complete enough survey items, and we were unable to determine if they were actual participants or bots since they only completed few items before exiting the survey. Because we were unable to determine their intent, caution is warranted when interpreting the findings and generalizing them to a larger population; if these respondents were eligible participants and not bots, it is possible that they could have been systematically different than those who did complete the survey, which would have influenced results (e.g., if practitioners who held less positive views about self-determination were more likely to exit the survey after only a few items than practitioners who held more positive views).

Second, this study had limitations in the approach used to explore child and practitioner factors that might contribute to views of self-determination for individual children. To reduce participant burden and survey fatigue, we had participants report only on one child that they chose. However, future research might consider having practitioners report on multiple children on their caseload. Doing this could allow for using multi-level modeling to better explore how child- and practitioner- factors

contribute to their views about children's opportunities and capacities for self-determination. Future research should also collect additional child information regarding strengths and weaknesses outside of communication to determine predictive factors for their opportunities and capacities for self-determination.

Implications for Practice

This study had an overall positive finding that special education teachers and BCBAs generally found all domains of self-determination to be important for children with complex communication needs. This offers important implications for practice because providers having positive views about self-determination is one critical step in creating school and clinic environments where self-determination skills are supported for all children, including with complex communication needs. Yet, the findings also indicate was that further support for special education teachers and BCBAs may be needed. When they were reporting on individual children, special education teachers and BCBAs rated the *opportunities* children had to engage in self-determination as being higher than their *capacities*, including related to their views of children's knowledge, abilities, and perceptions for self-determination. This finding, particularly when taken with the finding mentioned previously that student IEPs typically do not address self-determination (Burke et al., 2024), means that more should be done to support the implementation of

goals and instruction to support self-determination skill acquisition across grade levels. It will be important for the field to leverage practitioners' views that self-determination is important, but then to further build on this by providing training and resources for special education teachers and BCBAs to develop intervention goals and implement effective instruction to support children's self-determination. Incorporating self-determination skills into IEP goals may be one important first step to help ensure that children are provided with explicit instruction in this area because this would ensure children have specific and measurable goals developed, and that instruction and progress monitoring could be used to expand their knowledge, skills, and perceptions.

Additionally, the results of this study suggest that special education teachers and BCBAs should continue to expand their perceptions of the capacities for all individuals to become self-determined, even those with complex communication needs. Importantly, BCBAs were more likely than special education teachers to say that they did not know if all children should be self-determined, even though they affirmed that self-determination was important. Additional focus on self-determination and how it can be a focus for all children's programming may be especially helpful for BCBAs. Additionally, the finding about the role of children's use of robust language-based communication systems (i.e., speech, sign language, high-tech aided AAC) being associated with special education teachers having higher views of children's opportunities and capacities for self-determination is important. This finding helps highlight the need to provide all children with complex communication needs access to reliable communication systems, and

suggests the value of robust language-based systems when they are appropriate for children. Although pre-linguistic and low-tech AAC systems are valuable forms of communication, giving children greater access to the ability to use language for expression may be especially important to support children to be self-determining. These findings can therefore be utilized as a call to action for appropriate access to high-tech AAC systems and AAC-related services for children with complex communication needs, particularly since AAC access has been identified as a critical issue for improving outcomes for children with complex communication needs (Biggs & Hacker, 2021).

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