Engaging Stakeholders to Improve Social Validity: Intervention Priorities for Students with Complex Communication Needs

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Augmentative and Alternative Communication

Published: February 2021

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We have no known conflict of interest to disclose.

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Abstract

Many factors impact intervention implementation in everyday practice, including the social validity of these interventions. As a way of addressing social validity, this study aimed to understand the perspectives of multiple stakeholders of school-aged children and adolescents who use aided and unaided augmentative and alternative communication (AAC) on their key intervention priorities for these children. Semi-structured interviews were conducted with 19 parents and professionals, which included special education teachers, paraprofessionals, and speech-language pathologists (SLPs). Qualitative content analysis focused on (a) identifying a framework of intervention priorities for children with complex communication needs and (b) understanding stakeholders' underlying values and attitudes that influenced perceptions about these priorities. Participants shared many intervention priorities and several core values. These intervention priorities included approaches focused on improving children's intrinsic abilities (i.e., skills-focused) and on improving children's extrinsic supports and opportunities (i.e., environment-focused). However, participants often portrayed diverging attitudes about different aspects of intervention, particularly self-efficacy (e.g., persistence in the face of challenges; confidence about inclusive education) and perceptions of students (e.g., keeping high expectations). These findings have important implications for practice and future research related to how attention to social validity can help bridge the research-to-practice gap.

Keywords: Augmentative and alternative communication; Goals, Qualitative methods; Social validity; Values and attitudes

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A significant gap persists between what has found to be effective for supporting children with complex communication needs and what occurs in everyday practice (Light & McNaughton, 2012; Olswang & Prelock, 2015; Olswang & Goldstein, 2017). This research-to-practice gap is particularly evident when looking at school-based services. Despite the growing body of literature on effective supports and instruction, school personnel express they need guidance related to working with students who use AAC (Andzik et al., 2019) and have been found to rely on practices unsupported by research, rather than those with a strong evidence-base (Brock et al., 2014; Cook & Odom, 2013). To address these challenges, researchers must not only identify efficacious interventions, but also ensure their translation to everyday practice.

Light and McNaughton (2012) identified translation as one of the upmost research needs for the AAC field, writing that implementation research was needed "so that the *possible* becomes the *probable*" (p. 34). The AAC field has experienced significant change in recent years, particularly related to the climate of evidence-based practice (Cook & Odom, 2013; Schlosser & Sigafoos, 2009). This growing emphasis on evidence-based practice is critical for improving outcomes; however, the accompanying risk is overlooking that it is not solely the efficacy of an intervention that leads to desired outcomes in practice. The priorities, attitudes, and values of stakeholders are also critical to consider because they impact intervention buy-in, adoption, and implementation (Fixsen et al., 2013; Olswang & Goldstein, 2017). In other words, intervention programs must tap into things that matter to key stakeholders if they are going to truly have the potential to be as successful in practice as they are in controlled research settings. Interventions that do not align with stakeholders' priorities are unlikely to be implemented with

fidelity and sustained over time, regardless of affirming data on their efficacy (Marchant et al., 2012; Schlosser, 1999). Therefore, it is important that research is focused on understanding stakeholders' intervention priorities, which are the areas in which stakeholders want to use instruction, supports, or other intervention efforts to help students make progress toward important goals. Key stakeholders of students with complex communication needs may include people such as parents, teachers, paraprofessionals, and speech-language pathologists (SLPs).

The importance of stakeholders' perspectives has been discussed for decades, particularly related to social validity. Social validity involves the extent to which interventions are perceived as acceptable and valuable by constituents—that is, the people to whom and for whom they are done, and their networks of stakeholders (Kazdin, 1977; Schlosser, 1999; Wolf, 1978). When Wolf proposed this term in 1978, he described social validity as being comprised of three components, related to the extent to which: (a) goals are socially important, (b) procedures are acceptable and feasible, and (c) outcomes are meaningful. This definition has been widely embraced, and social validity is considered a central component of high-quality intervention research (Ganz & Ayres, 2018; Horner et al., 2005), including AAC intervention research (Schlosser, 1999). As the AAC community actively pursues ways to narrow the research-to-practice gap, increasing attention to social validity will be critical. If educators, parents, or service providers view interventions as being impractical, unacceptable, or not important, they will be less likely to be implemented well in practice (Olswang & Prelock, 2015). Therefore, improving the social validity of researched interventions for students with complex communication needs could have a powerful and lasting impact on practice, and socially valid research should be a primary aim toward supporting effective implementation in practice.

Despite the critical importance of socially-relevant research, rigorous social validity

assessments that help narrow the research-to-practice gap have been far too rare, and they remain rare even in recent years (Schlosser, 1999; Snodgrass et al., 2018). For example, social validity is often approached as an add-on at the end of a study, but critics have stressed that social validity assessments should occur not just after an intervention, but also during it or before it (XXX; in review). One very important reason for investigating social validity before an intervention is that stakeholder buy-in seems to be closely tied with successful implementation of an intervention, including both whether stakeholders choose to adopt an intervention and the extent to which they implement it with fidelity over time (Olswang & Prelock, 2015). Therefore, research is needed that addresses stakeholder views about intervention priorities as the first question, rather than the last question. Through efforts to understand stakeholder priorities, researchers can then "program for social validity" (Fawcett, 1991, p. 238) by developing interventions that respond to what stakeholders emphasize as important and that address underlying attitudes that might facilitate or hinder implementation.

Additionally, traditional approaches to assessing social validity have been to utilize brief questionnaires with rating scales (Snodgrass et al., 2018). This approach has several advantages, including that questionnaires are simple to administer, take relatively little resources and time, and generate quantitative data—which is often considered a more objective, and therefore superior, way to measure subjective perspectives. Yet despite these benefits, there are disadvantages. Using rating scales for social validity research restricts the amount and type and amount of information provided, often limiting the utility of the assessment for informing further development or translation to practice (Leko, 2014; Nastasi & Schensul, 2005). Qualitative research questions and designs, on the other hand, have been less-utilized in social validity research but offer a set of unique strengths by facilitating in-depth understanding of complex

phenomenon, contextualizing meaning in a smaller group of participants, and centrally situating participants' voices (Brantlinger et al., 2005). Though qualitative research cannot yield causal conclusions about intervention efficacy, it can play an instrumental role in the development and translation of interventions that are not just efficacious, but also seen as feasible, acceptable, and important to key stakeholders (Leko, 2014; Nastasi & Schensul, 2005).

In the AAC field, a growing body of literature has addressed the perspectives of different stakeholders. Although there are only a few examples of studies that have focused on using the first-hand perspectives of individuals who use AAC in social validity research (e.g., Bornman & Bryen, 2013), several studies have focused on the perspectives of other stakeholders, such as educators or parents. In a systematic meta-synthesis of qualitative research, Chung and Stoner (2016) identified 10 studies focused on the perspectives of parents and other educational team members who supported school-aged students who used AAC. Each of these studies elucidated stakeholders' views on factors that influence school-based services, including factors related to student and family characteristics, professional characteristics, device characteristics, supports, and team collaboration (Chung & Stoner, 2016). However, none focused on building in-depth understanding about stakeholders' intervention priorities. This research is needed because it could provide insight into stakeholder buy-in or readiness for different interventions. Furthermore, at present, little is known about the underlying values and attitudes that shape why stakeholders prioritize specific goals or outcomes over or alongside others. These are important to explore because intervention implementation is likely impacted by different values-based or attitudinal facilitators and barriers (Singer et al., 2017).

This study is situated in a larger project focused on the perspectives of stakeholders of students with complex communication needs on issues related to the notion of social validity.

This was the first study in the project, and the purpose was to explore the perspectives of parents, special education teachers, paraprofessionals, and school-based SLPs on their intervention priorities, as well as their underlying values and attitudes that influence these priorities. Therefore, of the three main components of social validity (i.e., goals, procedures, outcomes), the focus of this investigation was on gaining rich, contextualized understanding about stakeholders' views on *important goals,* with the premise that the development and implementation of socially valid interventions requires in-depth understanding about: (a) the goal areas that are important to different stakeholders and (b) why they are seen as important, or not important. The following research questions were addressed: What intervention priorities do different stakeholders value as being important for students with complex communication needs? What values and attitudes influence why these goals are prioritized by stakeholders? We were particularly interested in stakeholders' views about social-related areas (e.g., social communication, social relationships, social engagement and play; social inclusion); however, we wanted to explore these views within a broader context that included learning about other potential intervention priorities.

Method

Participants

Participants were 19 professionals or parents of children with complex communication needs. Recruitment occurred by distributing electronic and print flyers through social media pages and community resources. Flyers included information about the study and a link to complete an online screening questionnaire, which was used to describe the purpose of the study and determine whether potential participants met the inclusion criteria. To be included, a parent needed to have a child with complex communication needs in Kindergarten through 12th grade, or who was 18-21 years of age and received school-based transition services. Professionals were

required to (a) be a special education teacher, a paraprofessional, or a school-based SLP and (b) have worked with a student who had complex communication needs within the same school year as the start of the study. For inclusion in this study, a student with complex communication needs was described as a child who used any form of aided or unaided AAC as a primary communication mode (e.g., gestures or body movements, eye gaze, facial expressions, manual signs, picture symbols, speech-generating device [SGD]). To select participants, purposeful sampling was used to stratify across roles (i.e., parents, special education teachers, paraprofessionals, SLPs) and age-levels (i.e., elementary- and secondary-aged children). Out of 30 potential participants who completed the screening questionnaire, 19 were selected; the remaining 11 were primarily also elementary-level special education teachers and were not selected to have more equal representation in the sample across roles and age levels of students with complex communication needs. All participants provided informed consent.

This study was conducted in the United States, and participants resided across four states in the Midwest region. Table 1 displays information about participants and their students or children with complex communication needs. Notably, one of the SLPs (pseudonym Lisa) was acting as an AAC specialist for her district. All participants were female, and the majority (89.5%) were White (One paraprofessional was Hispanic and one mother was African-American). Two mothers had a bachelor's degree, one had completed some college-level study but not finished a degree, and one had a graduate degree. Among the professionals, years of experience varied; teachers reported an average of 5 years of experience working with students with complex communication needs (range: 1-19 years), paraprofessionals reported an average of 3 years (range: 1-5 years), and SLPs reported an average of 16 years (range: 3-31 years).

Insert Table 1 about here

Research Design

A qualitative design involving semi-structured interviews and content analysis (Patton, 2015) was used to address the research questions. This design was selected because it would produce in-depth, contextualized understanding about stakeholders' intervention priorities and their underlying values and attitudes. A faculty member and a doctoral-level student comprised the primary research team. Both had multiple years of experience working with students with complex communication needs, in former roles as special education teachers and current roles as researchers. Related to positionality, both the first and second author approached this work with the mindset that understanding the intervention priorities, values, and attitudes of stakeholders could help shape the trajectories of their own work and that of other researchers in the field. Institutional Review Board (IRB) approval was obtained prior to recruitment and data collection.

Materials

Both researchers worked collaboratively to develop semi-structured interview guides for parents and professionals based on the framework of social validity as consisting of intervention goals, procedures, and outcomes. Therefore, interview questions were divided into three main sections to align with these components: (a) goals or priorities for intervention, (b) experiences implementing interventions, and (c) desired outcomes (see Table 2). As part of the interview, participants were provided a handout listing possible areas for intervention goals across several socially-focused categories (e.g., communication, inclusion; see Supplementary Materials). The handout was developed by reviewing literature on social and communication-related interventions, and the purpose was to provide illustrative examples (Patton, 2015) about intervention priorities in these areas to explore how participants viewed these social-related goal areas in relation to other potential areas for goals. Prior to data collection, the interview guides

and the handout were piloted with several parents and professionals; minor wording changes were made to interview questions based on their feedback.

Insert Table 2 about here

Procedures

Individual, in-depth interviews were conducted with each participant by one of the researchers, who each used the semi-structured interview guide and adopted a conversational approach that involved follow-up probes to encourage participants to expand on their responses. To facilitate participation from a broader geographic region, interviews were conducted either in-person or through a web-based videoconferencing platform (i.e., interviews were conducted in person for participants who resided within 45 min of the researchers and through videoconferencing for the others). All interviews were audio-recorded and lasted 1-2 hr (*M*= 86 min). Interviewers took strategic notes during the interview to help formulate follow-up questions and move the interview along. To facilitate collaboration and reflection during data collection, interviewers completed written reflections immediately after each interview and discussed these reflections together (Patton, 2015).

Data Analysis

Interview data were analyzed through a collaborative approach to qualitative content analysis (Patton, 2015), guided by the coding guidelines outlined by Saldaña (2013). Interviews were transcribed verbatim, checked for accuracy, and deidentified with pesudonyms. Working collaboratively, both researchers conducted three coding cycles to progressively refine findings; each cycle involved critical discussion and analytic memoing (Patton, 2015; Saldaña, 2013). In the first open coding cycle, each researcher independently coded hard copies of full transcripts line-by-line, marking excerpts with one or more codes and constantly comparing each to

previously coded data (Patton, 2015). Participant responses related to intervention priorities were coded using descriptive coding (Saldaña, 2013), which involved categorizing excerpts into broad topics (e.g., communication, social skills). Each researcher also simultaneously conducted values coding (Saldaña, 2013). Based on existing guidelines (Saldaña, 2013), values were defined as core beliefs that participants expressed about what was good or important for students with complex communication needs. Attitudes were defined as participants' ways of thinking or feeling about intervention that were shaped by their values and experiences.

After independently coding a set of one or two transcripts, both researchers met to reach agreement on codes and update a codebook containing code names, descriptions, and memos. After each meeting, the first author imported transcripts and codes into a web-based application for further analysis (i.e., Dedoose Version 8.1.10). At this time, the researchers conducted intermediate-level member checks (Patton, 2015) by sharing one-page summaries with each participant. The summaries outlined bulleted notes about the intervention priorities and underlying values and attitudes that were most clearly evident to the researchers for that specific participant. Each participant responded in writing to two questions: (a) To what extent does this summary match your perspectives? (b) What would you add or change? All participants responded, indicating that the summary matched their perspectives. Only one participant also added an additional written anecdote, which was incorporated into the dataset for analysis.

Following member checking, the second coding cycle focused on reanalyzing data related to intervention priorities. The first coding cycle resulted in seven descriptive codes which were reanalyzed multiple times to consider relations across codes and identify more specific sub-categories. Both researchers then searched for disconfirming and confirming evidence (Patton, 2015) by revisiting all of the transcripts in full, making needed changes to code applications,

critically evaluating the interpretation, and memoing about the properties and dimensions of each category and sub-category. Then, the third coding cycle involved reanalyzing data related to values and attitudes by using in vivo coding (Saldaña, 2013) to emphasize the actual spoken words of the participants. Both researchers independently reviewed the first cycle codes and then met to reduce the list of codes and refine their descriptions. Finally, data visualization techniques were used to analyze patterns across each stakeholder role.

Multiple strategies supported the credibility and trustworthiness of the qualitative analysis (Brantlinger et al., 2005). An extensive process of iterative coding cycles was used to ensure richness and depth of analysis, refine understanding of emerging ideas, and search for confirming and disconfirming evidence. Other strategies strengthening the rigor of analysis included using a collaborative approach, conducting intermediate-level member checks, and developing an audit trail to document raw data and decisions across stages of analysis.

Results

Stakeholders' Intervention Priorities

A framework of seven categories of intervention priorities was identified: (a) Communication and Social Interaction; (b) Inclusion and Relationships; (c) General Education Access, Literacy, and Functional academics; (d) Play and Recreation; (e) Independent Living; (f) Social Skills; and (g) Social-Emotional and Behavioral Skills. Each intervention priority was highlighted as being important by multiple participants across stakeholder roles (see Figure 1). Though data visualization was used to search for differences in stakeholders priorities based on the school level of students, there was no clear evidence of such variation. Across these categories, participants discussed two different approaches for how to address intervention priorities, focusing on improving children's (a) intrinsic abilities (i.e., skills-focused approaches),

and (b) extrinsic supports and opportunities (i.e., environment-focused approaches). These are discussed further below, using pseudonyms for each participant who is quoted.

Insert Figure 1 about here

Communication and Social Interaction

The most emphasized priorities related to communication and social interaction, which consisted of five sub-categories: (a) reliable communication system, (b) reasons to communicate, (c) social interaction and communication partners, (d) language development, and (e) receptive communication. Many participants saw communication as being central to other goals, describing it as "the top priority" (Julia) and "the most important" (Diana). An AAC specialist (Lisa) talked about the need for children to have "authentic communication," adding "all kids have something to say." Along with other participants, Lisa emphasized generalized, spontaneous communication across "all of the people who are important to that child," as well as generalized communication across settings. For example, a middle school teacher (Tiffany) talked about what was important to her:

> Communicating across settings throughout the day, because he will use his speech-generating device in the classroom in a very structured activity or setting, or for an academic purpose, but then that's not generalizing over to social settings or the lunch room or a gen. ed. class that he attends. That would be my top priority I would think.

Participants discussed the need for skills-focused intervention to help children build a breadth of communication abilities, including: demonstrating communicative intent; utilizing multimodal communication systems (e.g., gestures, aided AAC, speech); using a variety of communicative functions to address "wants and needs" (Sage/Brianna) while also "moving beyond requests" (Savannah); building vocabulary skills; and initiating and responding with a

variety of communication partners. Participants also equally emphasized environment-focused intervention approaches, particularly to increase meaningful communication opportunities and to ensure that communication partners were supportive and responsive. Talking about children who were early pre-intentional communicators, one SLP (Christy) discussed environmental approaches to help students learn "the value of communication," saying, "I think the more people that respond to them, the more they see value in communicating." Another SLP (Savannah) echoed this priority for children learning to use SGDs.

> The biggest need is the time and training for the educational assistants, the teachers, the families… to help them gain understanding of how to use [the SGD] and gain the skills and know how to implement it and understand what they can do to support the communication. … All the stakeholders in the process need to be involved.

Inclusion and Relationships

Participants discussed other important priorities in the areas of (a) participation and inclusion at school, (b) participation and inclusion in the community, and (c) social relationships. Parents and professionals talked about a number of reasons why these were important, including because they impacted students' well-being, learning, and overall development. For example, Savannah (an SLP) discussed inclusion at school, saying, "If we expose these early communicators to other people who cannot communicate, we're just not going to get anywhere. … We'd have better outcomes if they were included from the beginning." Though participants discussed priorities related to inclusion and social relationships as being different than one another, they were also interconnected. Talking about her elementary-aged son, Sonya shared that building social relationships was "why we try to include him." She went on to say, "So that he's not just the buddy in the classroom. He's spoken to. He is acknowledged. And he's viewed

as a member of the classroom by his general education teacher and peers, not just his aide." Similarly, an SLP (Brandi) talked about wanting to find a way for a "shift" to take place with peers "from being the helper to being a friend." Other participants shared that some of their highest priorities were that students would be "included and participating to the maximum extent possible" (Savannah) or be "not just be in the setting" but "truly included" (Grace). Therefore, prioritizing inclusion meant not just that students were present, but that they were accepted, wanted, and seen as having something "to offer" (Lisa). One elementary special education teacher (Sage) talked about these ideas within the context of how peers interact:

> I'd hope that their peers would just approach them and be like, "Do you want to play?" and that it would be out of "I want to spend time with you" and not like "I know I need to ask you because that's what's expected." … [I had] one student who really did develop those friendships. … I knew that it was genuine because they wanted him to be there. They would go out of their way to seek out those interactions with him.

Participants primarily highlighted the need for environment-focused interventions to support these outcomes, including placement in general education settings. For example, a teacher (Summer) talked about the importance of time with peers, saying, "They can go out to recess together, but if they only see each other for those 15 min a day, what relationships can really be built just during that time?" She added, "If they saw each other [more]… that would give them a lot more opportunities to build those relationships." Parents and professionals also raised the need for interventions focused on supporting peers in understanding, accepting, and befriending their classmates with complex communication needs. Teachers, such as Brianna, shared that peers needed not just "exposure" to classmates with disabilities but also "intentional conversations" about inclusion, disability, and different ways to communicate.

Participants also emphasized the need for intervention efforts to equip teachers, paraprofessionals, and other school staff for meaningful inclusion. For example, one mother (Sonya), whose son spent most of the day in general education settings, shared, “I think our teachers need more education if we’re really aiming at true inclusion. Because there’s still this mentality that some kids are too disabled to be included.” Teachers often talked about paraprofessionals needing training and support in this area. A middle school teacher (Sarah) explained, “The [paraprofessional] can make or break what is happening in there. Either they’re really good and are on the same page as I am about including them, or there’s not a whole lot of meaningful inclusion going on.” Participants also discussed the need for educational teams to have more time and supports for collaboration so that inclusion could be effective, highlighting the importance that administrators were “understanding and aware” of these needs (Sage).

General Education Access, Literacy, and Functional Academics

There were differences across stakeholders in how much they perceived the importance of interventions focused on helping students make academic progress, including within the context of general education classrooms. Paraprofessionals seemed to favor goals they perceived as being more “functional” (Cindy/Paula) or “practical” (Diana) over academic-focused goals. For example, Belinda shared, “All the stuff about learning letters, it might come later on. But going to the bathroom… it’s like a basic skill, and that’s what we work on. So, I think him learning all those basic things would be so great.” In contrast, most parents, teachers, and SLPs discussed how they prioritized student’s access to the general education curriculum alongside other goal areas. An elementary teacher (Summer) explained, “I want them to achieve their highest level of academic performance as possible. I want readers, I want writers, I want students who are able to engage in all the academic components.” Participants referenced external factors

as influences to their views. For example, one SLP (Christy) described how her perspectives on literacy shifted after receiving more training. Prior to this training, she said "I didn't really see [literacy] as part of my job because I'm not a teacher." Later, she said she saw how literacy was her "job as an SLP" because language and literacy "interrelate so much." An elementary teacher (Summer) talked about different external pressures that impacted her priorities for her students:

> The state really demands focus more on the academic acquisition, and not necessarily focusing as much on the social realm. … I think sometimes the academic standards can be an obstacle into being more purposeful in implementing [social and communication interventions]. As public educators, we feel the push every day.

Participants emphasized both skills-focused and environment-focused approaches to address academics, often related to ensuring access to high expectations. For example, Christy explained:

> A lot of people just don't expect that our kids have the capabilities to read… and so some of those limitations that people set, are just so limiting. … When someone's having a baby, they get lots and lots and lots of books for the baby shower. And there's no expectation that well, the baby doesn't know how to read. … There's an expectation that [reading] will be part of their life. And so that needs to be for our kids. … They can read, they can learn those things if we kind of put those higher expectations on them.

Several teachers described the need for all educational team members, including paraprofessionals, to be comfortable with and provide the right accommodations and instruction to help students access and make progress in academic content. Susan, a parent who had a middle-school aged son, shared candidly about her experiences with some educators:

> They don't really think children who are nonverbal can learn. So, they don't really teach them. Evan's behind quite a bit, and I really don't know how much of that has to do with

> his disability, because he wasn't exposed to instruction. He just sat and did puzzles and coloring sheets all day, so no systematic, explicit instruction. … I realized they don't even know how to teach that. … I realized the teachers are not trained. I trusted them, but they didn't know any more than I knew.

Play and Recreation

Other priorities were in the area of play and recreation: (a) social play, (b) play skills, (c) recreation and leisure, and (d) interests and object engagement. Participants emphasized that these were important because they provided a platform for other desired outcomes, including relationships with peers. One paraprofessional (Diana) described, "playing a game or having someone push them on a swing at recess… that is something that the kids really, really need." Lisa, an AAC specialist, talked about why she thought play was important:

> I think that we somehow get the idea that we release the kids out into recess and think that they're going to know what to do, and I think that's a very poor idea. I'm not sure that we've fully grasped that [play] can be taught and that it's valuable to teach to make sure that all the other things happen.

Participants highlighted the need for instruction to teach many different skills across these sub-categories, for example: taking turns and sharing, playing games with rules, initiating and inviting peers to play, playing functionally with toys, playing imaginatively, and independently engaging in recreational activities. Equally important was the emphasis on environment-focused interventions, such as improving opportunities and supports to play successfully with peers. For example, several teachers and SLPs talked about the need to support peers' "instincts of how to play" with students with complex communication needs (Tiffany)," or "how they treat the students" (Brandi). Julia, a teacher of high school students with severe and multiple disabilities,

shared this was a priority because of peers "not knowing what to do and not knowing how to interact." She later explained, "which I understand, because I struggle with that too with my students: not knowing what is a functional way, or meaningful way to play with them." Also related to the environment, parents highlighted the need for opportunities and supports for leisure, such as Sonya who shared the following:

> After school, Anthony comes home, he takes a nap. Then he plays. Then he hangs out. Then he goes to swim at the [community recreational center]. This is his day, and it's what is important. If it's warm outside, we go outside. … This is therapy: spend some time with his family hanging out, and doing this kind of stuff.

Participants also discussed whether it was a priority to address interests and object engagement. Cindy talked about this, saying: "It's not necessarily that they have a particularly interest in specific objects, but they do need an interest in something." Some participants did not see this area as important because they wanted to be "student-led" (Christy); however, others emphasized expanding students' interests while simultaneously "tapping into" their existing interests (Julia).

Independent Living

Participants also discussed their priorities in the areas of (a) daily living and community skills and (b) self-determination. Together, these goals were focused on students being able to live with "as much independence as possible" (Sage). These goals included providing instruction on daily and community living skills (e.g., personal care, food preparation, money management, navigation and mobility, household maintenance, health and safety). Participants also emphasized the need to focus on students' abilities, opportunities, and supports to act as a causal agent in their own lives by making decisions, pursuing things they enjoyed or wanted to do, and learning from mistakes. Though participants primarily emphasized skills-focused instruction,

several highlighted the importance of increasing others' expectations and the opportunities they provide students. For example, Sonya said a priority was "providing him with opportunities, providing some challenges… because otherwise we won't know what he's capable of doing."

Social Skills

This category involved priorities in the areas of (a) social engagement and (b) pragmatics. Social engagement, including joint attention, was viewed as being a critical platform for learning as "the way that we can teach and learn and build those relationships" (Summer). Related to pragmatics, participants talked about wanting to help children "fit in" (Grace/Diana), and one of the things they emphasized most was helping children generalize social skills and have "natural, versus artificial interactions" (Sage). Participants discussed the need for strategies to teach different skills, including taking turns in a "back-and-forth conversation" (Lauren), maintaining conversations and staying on topic, making eye contact, initiating interactions, using greetings, and understanding "social boundaries and personal space" (Sarah). Most participants emphasized skills-focused over environment-focused strategies, but not all. For example, one SLP (Savannah) discussed how she strategically involved peers: "The best part about this was that while we were practicing [social skills], they [the peers] were able to see how this student may not do it in the same way as they would expect, but he's still doing it." She explained, "Then, when they were out at recess or they were in the lunch room or they were at the gym, the carry-over was awesome because those peers were trained and knew how to respond better."

Social-Emotional and Behavioral Skills

Participants also discussed priorities related to helping students use functional communication instead of challenging behaviors, recognize their emotions, regulate behaviors through emotional coping strategies, and respond empathetically to others. For example, Susan, a

mother of a middle-school student with autism shared, “One of the biggest things is social-emotional for him… just kind of keep those behaviors at a minimum, regulate, and be able to communicate.” Many parents and professionals shared that instruction was critical because “behavior gets in the way of these other things,” such as learning or positive engagement, play, and relationships with peers (Sage); however, participants emphasized more than just skills-focused strategies. Several also talked about the need for environmental-focused approaches, such as ensuring all adults to had appropriate student expectations and provided positive behavior supports. Lisa talked about this from her vantage point of working with different schools: “We don’t have a good way to build the capacity that we need… for social-emotional teaching.” She went on to explain that some educators “weren’t trained, they don’t know it very well, they don’t understand it very well, and it scares them… yet in other schools, we are making huge, huge headways in teaching our students how to self-regulate.”

Values and Attitudes Influencing Intervention Priorities

Eight values became evident as participants discussed their intervention priorities: belonging, social functioning, family, self-determination and independence, happiness, success, human dignity, and health and safety. These values were largely shared across stakeholders (see Figure 1). For example, the values of social functioning (i.e., believing in the importance of students’ having the communicative and social competence to interact with others across environments) and belonging (i.e., wanting students with complex communication needs to be known and accepted; to have valued contributions; and to be supported and befriended within communities and groups) were portrayed by all of the participants. In addition, stakeholders portrayed 22 unique attitudes related to intervention when they discussed their priorities for students with complex communication needs. These different attitudes were clustered into five

main categories: (a) Selecting goals, (b) Core principles of intervention, (c) Teaming and collaboration, (d) Perceptions of students, and (e) Self-efficacy and collective efficacy. Attitudes across stakeholders were fairly diverse. As displayed in Figure 2, a majority of participants had similar attitudes in several categories; however, attitudes within the categories of self- and collaborative efficacy and perceptions of students were varied across participants.

Insert Figure 2 about here

Discussion

It is important that evidence-based interventions address what matters to key stakeholders if they are going to be successfully adopted and implemented in everyday practice. Furthermore, outcomes for students with complex communication needs are likely to be impacted by different attitudes and values of stakeholders, as these may facilitate or pose barriers to intervention implementation (Singer et al., 2017). Through in-depth interviews with 19 parents and professionals, this study (a) identified a framework of stakeholders' intervention priorities for students with complex communication needs and (b) explored the values and attitudes associated with these priorities. Motivation for this work came from beliefs that if AAC researchers understand stakeholder perspectives about what is really important, intervention development and translation can address stakeholders' priorities and underlying attitudes in order to successfully impact everyday practice. Additionally, insight from the findings in this one sample of participants could be used to understand how to improve collaborative decision making, planning, and intervention implementation in educational teams with diverse stakeholders.

Intervention Priorities for Students with Complex Communication Needs

This study extends existing knowledge about stakeholders' views about intervention priorities in several important ways. Nearly all said that these intervention priorities were "all

important," "intertwined," and that communication was at the center. Looking at this framework of intervention priorities as a whole (Figure 1), participants discussed intervention priorities in areas that have substantial and growing bodies of intervention research, such as communication, functional academics, and independent living (Brown et al., 2020; Light & McNaughton, 2015). In addition, participants also prioritized intervention in such areas as general education access and literacy, which has been the focus of growing attention for students with complex communication needs (Browder & Spooner, 2014; Erickson & Koppenhaver, 2020), and play and friendships, which have received less intervention focus (Biggs & Snodgrass, 2020). Taken together, this framework of intervention priorities suggests the need for comprehensive, person-centered educational planning that includes opportunities, instruction, and supports across each of these critical areas. One difference that became evident was that unlike other stakeholders, paraprofessionals viewed *functional* and *academic* goals as being distinctly different, believing "functional" areas were more important than academic areas. However, it is becoming increasingly evident that general education access can (and arguably should) be functional by promoting quality of life outcomes, such as learning to read and write, increasing students' understanding of the world around them, and expanding employment opportunities (Browder & Spooner, 2014). Therefore, this difference in stakeholders' views will be important to address in future research and practice. If specific educational team members, such as paraprofessionals, do not view academics as being important, they may be unlikely to support implementation in these areas with fidelity and consistency.

This framework also reinforces the need for continued research to identify evidence-based interventions across each of these areas, to understand which interventions are most effective for different students within goal areas, and to explore the influence of different

environmental factors on intervention effectiveness. Aligned with an implementation science perspective and a focus on social validity (Olswang & Prelock, 2015), these efforts will likely be most successful if researchers engage closely with stakeholders and address practical needs and priorities throughout the research process. Socially valid AAC intervention research could not only include stakeholders as participants but as co-researchers and equal partners in setting the direction for and carrying out research (St John et al., 2018; Olswang & Goldstein, 2017), including individuals who use AAC themselves.

A second important finding was that stakeholders saw the importance of focusing on two distinct approaches to intervention: (a) improving children's intrinsic abilities and (b) enhancing opportunities and supports in their natural environments. These approaches should be viewed as being complementary, rather than competing. For example, rather than focusing only on remediating specific social or communication skills, educators can support interactions and relationships with peers by (a) providing social communication instruction to students learning to use AAC while simultaneously (b) facilitating shared activities with peers and (c) working with peers to equip them as effective communication partners (Biggs & Carter, 2017). Though skills-focused instruction was clearly important to these stakeholders, they also placed considerable importance on addressing different environmental factors, such as opportunities for inclusion, training for communication partners, support for peers, and other environmental supports.

Participants' views on the importance of both skills-focused and environment-focused intervention also echo broader shifts about conceptualizing disability and intervention by attending to extrinsic environmental and intrinsic factors. One particularly relevant framework is the International Classification of Functioning, Disability, and Health: Children and Youth Version (ICF-CY; World Health Organization, 2007), which recognizes the interaction of a

child's individual condition and environmental factors to overall functioning. The ICF-CY has already been applied as a promising guide for AAC service-delivery and research (Simeonsson et al., 2012; Light & McNaughton, 2015), with these other researchers also writing about the need to shift perspectives toward emphasizing participation in real-world settings and environmental factors that influence outcomes. However, this shift seems to have not yet taken place in a widespread way (Light & McNaughton, 2015). The views of participants in the present study provide further impetus for this shift to take place both in research and in practice.

Values and Attitudes

The findings strengthen understanding about the values and attitudes influencing intervention priorities in this sample of participants. There is relatively little that is surprising about the core values that were identified, or even that these values were largely shared across participants. These same values (i.e., belonging, social functioning, family, self-determination and independence, happiness, success, human dignity, and health and safety) were also evident when Light and McNaughton (2015) wrote that the goals of AAC intervention should be that children ". . have the opportunity to live happy and fulfilled lives where they are able to participate fully in education, employment, family, and community live; where they are safe and secure, and have access to needed services; where they are respected and valued for who they are; where they have the chance to develop friendships and intimate relationships; and where they have the opportunity to make meaningful contributions to society" (p. 87). Though these values may not be surprising, they are nonetheless important. Evidence-based AAC interventions will likely make the greatest difference in real-world outcomes when they are intricately connected to stakeholders' values (Singer et al., 2017).

Related to stakeholders' attitudes, participants expressed so many different attitudes that

it was difficult to reduce these into a manageable list. Furthermore, the 22 attitudes that were identified may actually be just a fraction of stakeholders' ways of thinking or feeling about intervention, particularly because analysis was limited to those attitudes that participants explicitly portrayed, not implicit attitudes that would have remained hidden. Based on the broader literature on implementation science and social validity, stakeholder attitudes may be among the most important of the many contextual factors that affect implementation success (Fixsen et al., 2005; Olswang & Prelock, 2015). Therefore, it is important that they are considered carefully. Though most of the attitudes were positive (e.g., "It has to be a collaborative effort," "Consistency, even when you want to throw in the towel," "She's so capable," "Build off their interests, always building off their strengths"), some attitudes encountered may be likely to hinder successful intervention. For example, within the attitude "I feel like my biggest struggle is the other people," many paraprofessionals felt disrespected in their roles, and some SLPs and teachers felt frustrated that working paraprofessionals was not going well; within the attitude "That would be the speech person," some parents and paraprofessionals viewed AAC intervention as being only the responsibility of the SLP, rather than seeing their own important roles; within "We'll give it a shot," some stakeholders felt they did not have the knowledge and skills to have a clear plan for intervention; and, within "I struggle with inclusion being meaningful and effective," some teachers and paraprofessionals did not know how to support inclusion, even though they wanted this for their students.

Because values were generally shared by participants, it seems that their attitudes were more shaped by challenges and/or successes in day-to-day work with students, rather than their values. Participants discussed a number of challenges, including receiving little training or support, experiencing team conflict, and witnessing limited student progress. Positively

impacting outcomes will likely require ongoing efforts to understand the complex landscape of stakeholder attitudes, to identify specific attitudinal facilitators and barriers to successful intervention, and to find ways to support implementation, both by meeting stakeholders where they are and by collaborating with them to conduct scientifically rigorous and practically relevant AAC research (Olswang & Goldstein, 2017).

Clinical Implications

There are a number of implications for practice. For family members and individuals with complex communication needs, the framework of intervention priorities may provide a useful tool to discuss important goals with professionals. Children and adolescents with complex communication needs and their family members should be encouraged to think about and share their priorities, values, and attitudes toward intervention with their service providers so that educational decision-making can be shared. Furthermore, educators and service providers often focus goals and educational planning for children who use AAC on remediating specific academic, motor, cognitive, or communication skills; however, it is important for professionals to equally attend to utilizing strategies that target students' opportunities and supports across their natural environments (Light & McNaughton, 2015; Simeonsson et al., 2012). Finally, the findings also highlight the reality that attitudes toward intervention may vary widely across parents and professionals who are part of the same team. Therefore, it is important that team members (e.g., special and general education teachers, parents, SLPs and other service providers, paraprofessionals) discuss and address how differences in their priorities and attitudes might impact intervention implementation, collaboration, and ultimately student outcomes.

Limitations and Future Directions

The findings of this research should be interpreted in light of several limitations. First, the

sample was not very diverse demographically; all participants were female and nearly all were White. Further, no data are available about the family socioeconomic status for parents who participated, or for students who were served by the professionals who participated. Future research is needed with other groups of stakeholders to understand the extent to which perspectives align or diverge on these issues, including across ethnic, linguistic, and socioeconomic backgrounds. Second, the present study included special educators, SLPs, paraprofessionals, and parents; however, other stakeholders are also important in making intervention decisions for students with complex communication needs. Future research should also include the perspectives of these other stakeholders, including general education teachers, educational administrators, fathers, and individuals with complex communication needs themselves. Third, all participants in this relatively small sample were from the Midwest region of the United States, and future research is needed to understand the extent to which participants from other regions or countries would share these perspectives. Fourth, although using videoconferencing was a strategy to facilate participation from participants across a broader greographic region there may have been differences in rapport and participants' responses based on whether interviews were conducted through videoconferencing or in-person.

In light of these limitations, this study raises a number of important implications for future research. There is an ongoing need to address issues related to social validity as AAC researchers seek to develop efficacious interventions and translate these interventions into everyday practice. The present study generated in-depth understanding of the intervention priorities, values, and attitudes in a small sample of participants, signaling the need to investigate these views at a larger scale. Although other research indicates stakeholder views are important (Fixsen et al., 2005; Olswang & Prelock, 2015), how these views actually influence decision-

making and intervention implementation for students with complex communication needs remains unknown. Future research should address specific questions related to different stakeholder attitudes, such as their associations with other educator-related variables (e.g., burnout, team cohesion) and their impact on student-related outcomes. In the present study, a noteworth finding was that stakeholder attitudes were so varied, particularly related to perceptions of students and self-efficacy and collaborative efficacy (see Figure 2). It is importat that researchers continue to investigate questions related to these attitudes in the future. Finally, given that a wide breadth of intervention priorities was raised as being important, there is a need for research focused on understanding the training and support that parents and professionals want and need across these different areas. For example, how confident are teachers, paraprofessionals, and SLPs in their abilities to implement different evidence-based interventions across these areas? Are there specific areas in which parents or professionals especially want additional training, support, or resources?

Conclusion

Despite the growth in research on effective interventions for children with complex communication needs, these students largely continue to experience poor educational, vocational, and quality of life outcomes. One of the most pressing challenges for the AAC field is to ensure that effective interventions are successfully implemented in everyday practice. Furthermore, there is an impetus that these interventions focus on areas that are truly important for children's real-world functioning, and that they address both children's abilities but also their environments. Addressing these challenges demands closer partnerships between researchers and key stakeholders to ensure scientifically rigorous and socially valid research (Olswang & Goldstein, 2017), and it will require effective collaboration across families, school teams, and

other service providers. By understanding the priorities, attitudes, and values of stakeholders, researchers and service providers can elucidate critical factors that facilitate or pose barriers to intervention implementation and, ultimately impacting the extent to which children receive they support they need to flourish in all aspects of their lives.

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Table 1

Summary of the Characteristics of Students with Complex Communication Needs by Participant

	Role	School level	#	Student(s) special education disability category[a]	Student(s) communication developmental level[b]	Time in general education settings at school			Student(s) communication modes[c]
						> 80%	40-79%	< 40%	
Grace	Parent	E		ID	Linguistic		X		Unaided, picture symbols, high-tech SGD
Sonya	Parent	E		ID	Pre-linguistic	X			Unaided, picture symbols, high-tech SGD
Pamela	Parent	S		ASD, ID	Pre-linguistic			X	Unaided, high-tech SGD, speech
Susan	Parent	S		ASD	Linguistic			X	Unaided, picture symbols, high-tech SGD, speech
Brianna	Teacher	E	4	ASD, DD, ID, MD	Both			X	Unaided, high-tech SGDs, speech
Sage	Teacher	E	5	ASD, DD, ID	Both			X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Summer	Teacher	E	14	ASD, DB, DD, ID, MD, OI, TBI	Both	X	X	X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Julia	Teacher	S	7	MD, TBI	Prelinguistic			X	Unaided, mid- and high-tech SGDs
Sarah	Teacher	S	1	MD	Prelinguistic			X	Unaided, picture symbols, high-tech SGD, speech
Tiffany	Teacher	S	3	ASD, MD	Both			X	Unaided, picture symbols, mid- and high-tech SGDs
Belinda	Para	E	3	ASD, MD	Prelinguistic			X	Unaided, picture symbols
Cindy	Para	E	3	ASD, ID	Both			X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Paula	Para	E	3	ASD, DD, ID, MD	Both	X		X	Unaided, picture symbols, high-tech SGDs
Diana	Para	S	4	ASD, DD, ID, MD	Both	X	X	X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Lauren	SLP	E	2	ASD, DD, ID	Both	X			Unaided, picture symbols, high-tech SGDs
Brandi	SLP	E, S	23	ASD, DD, ID, MD, TBI, VI	Both			X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Christy	SLP	E, S	30	ASD, DD, ID, MD, OI, TBI	Both		X	X	Unaided, picture symbols, mid- and high-tech SGDs, speech
Savannah	SLP	E, S	4	ASD, OHI	Both	X	X		Unaided, picture symbols, high-tech SGDs
Lisa	SLP/ AAC specialist	E, S	45	ASD, DD, ID, MD, OI, TBI	Both	X	X	X	Unaided, picture symbols, mid- and high-tech SGDs, speech

Note. # = Number of students with complex communication needs; E = Elementary; S = Secondary; Para = paraprofessional; SGD = speech-generating device

[a] Includes primary and secondary special education disability categories under the Individuals with Disabilities Education Improvement Act in the United States; ASD = Autism spectrum disorder; DB = Deaf-blindness; DD = Developmental delay; ID = Intellectual disability; MD = Multiple disabilities; OI = Orthopedic impairment; OHI = Other health impairment; TBI = Traumatic brain injury; VI = Visual impairment

[b] Participant's rating of their child or student(s) communication level as pre-linguistic (which included pre-intentional and intentional, pre-linguistic) or linguistic; "both" indicates that professionals worked with some students who were pre-linguistic and some who were linguistic communicators

[c] Mid-tech SGDs referred to devices that were battery operated and had speech output but simpler functions (e.g., static vocabulary displays or buttons or switches with recorded speech output) while high-tech SGDs referred to more complex dynamic display devices with synthesized speech output

Table 2

Interview Questions for Parents and Professionals

Rapport building

1. Can you briefly tell me about (your child/your educational role with students with complex communication needs)?

Intervention goals or priorities

2. What are your highest priority goals for your (child/students)? Why?
3. As you look at this handout, what stands out as particularly important for your (child/students)? Why?
4. Are there things on this list that do not seem important to you? Why?
5. What other intervention priorities do you have that are not currently on this list?

Experiences implementing interventions

6. How are (you/ you and your child's educational team at school) working to support (your child/students) in these different areas that are important to you?
7. How do you see your role in supporting your (child/students) in these areas? What do you see as the roles of others on the educational team?
8. What are you doing currently that you have found to be successful in supporting your (child/students) in these areas? How did you decide or learn to do these things?
9. What is difficult about supporting your (child/students) in these areas? That is, what challenges have you encountered?
10. How would you describe your knowledge, skills, and confidence (and of your child's education team) as it relates to supporting your (child/students) in these areas?
11. Are there resources or supports that would improve your knowledge, skills, or confidence (and of your child's educational team)?
12. What do you believe it would take for your (child/students) to be effectively supported in these areas?

Intervention outcomes

13. How would you know a meaningful difference was made for your (child/students) in these areas? That is, what might serve as markers or indicators that an intervention was effective in truly meaningful ways?

Closing

14. What else would you like us to know about supporting your (child/students) with complex communication needs?

Note. Participants across roles were asked similar questions, but the wording was adjusted for parents and professionals (see parentheses in the questions above). Interviewers used a conversational approach and also asked other follow-up questions that are not listed.

Figure 1.
Data visualization of intervention priorities and core values across stakeholder roles

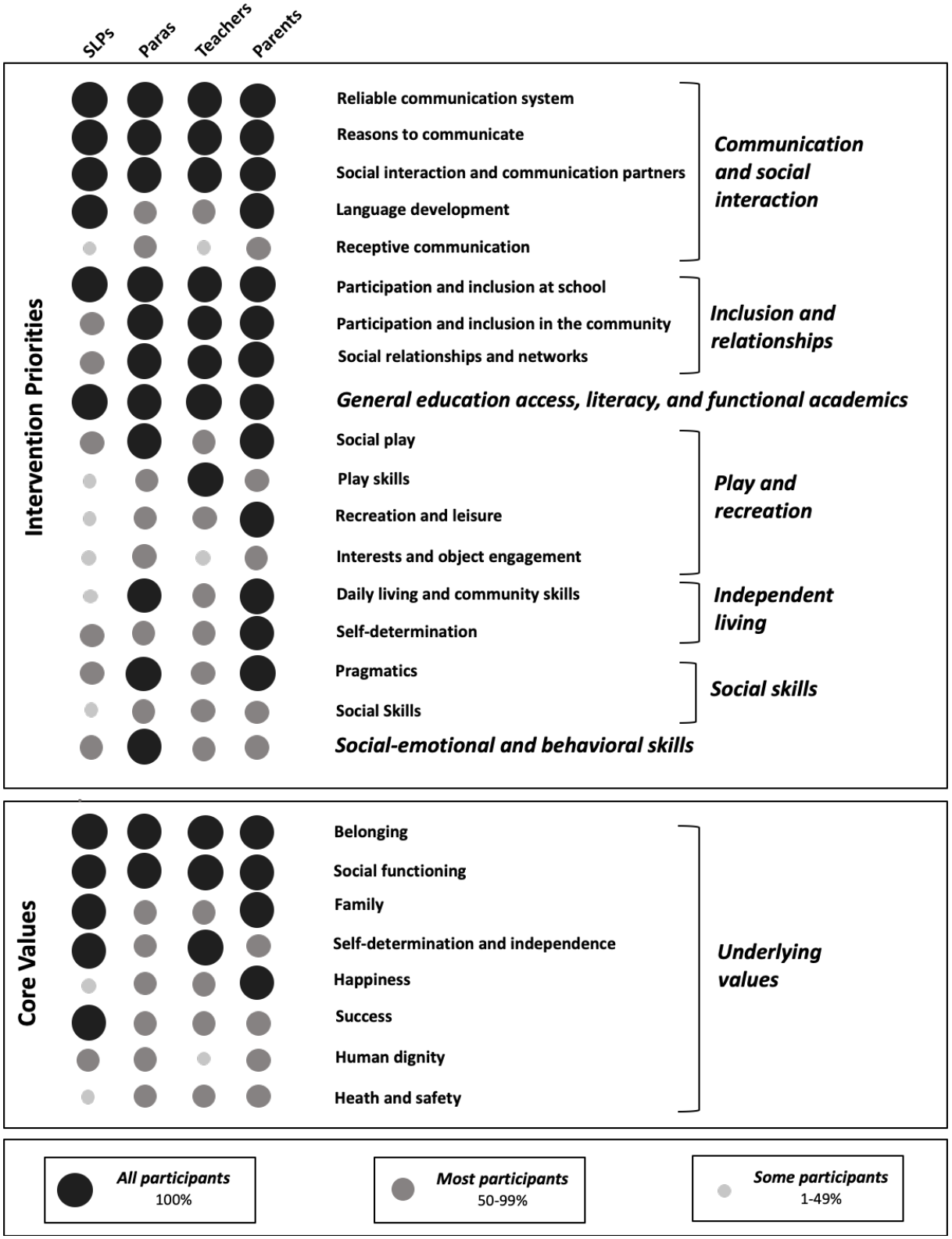

Figure 2.
Descriptions of attitudes and data visualization of these attitudes across stakeholder roles