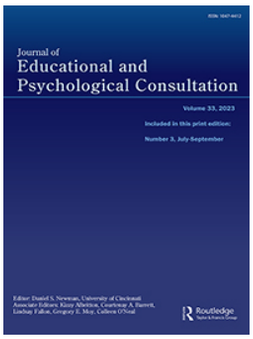

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Drawing on Key Partner Perspectives of an Autism-Focused Professional Development Program: A Conceptual Framework for Coaching

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ABSTRACT

Most teachers report wanting more training and support to teach autistic students. Individual, autism-focused coaching is a promising approach for improving teacher self-efficacy and autistic student outcomes. Given the high workload demands of coaching, it must be feasible and acceptable. This study considers coaches', teachers', and autistic peoples' perspectives to identify key components integral to autism-focused coaching as well as strategies that enhance the feasibility and acceptability of each component. Interviews with seven K-2nd grade teachers, ten autistic adolescents and adults, and a focus group with six coaches were qualitatively examined using an inductive approach and incorporated grounded theory practices to develop an autism-focused coaching framework. This framework consists of four contextual elements that were identified as crucial to coaching within an autism-specific context, including the use of a neurodiversity-affirming lens and coaches' strong autism knowledge. This framework also comprises eight sequential coaching components informed by principles of adult learning theory (e.g. observation, feedback, self-reflection) that are generalizable to supporting teachers' work with autistic and neurodivergent students. These findings offer guidance to coaches and program developers regarding key components to implement when working with teachers supporting autistic students. We highlight specific recommendations within each component to maximize the feasibility and social validity of autism-specific coaching.

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Introduction

With the increasing prevalence of identified autism (Maenner et al., 2023), teachers must be prepared to support autistic[1] students in their classroom. Yet, the vast majority of teachers report feeling unprepared to teach autistic

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[1]We use identity-first language to reflect the preferences of many members of the autistic community (e.g., Kenny et al., 2016; see Bottema-Beutel et al., 2021 for an overview).

students (All Party Parliamentary Group on Autism APPGA, 2017; Eisenhower et al., 2016). Although levels of autism preparedness, training, and applied field experiences differ across special education and general education settings, the majority of teachers in both settings report having no professional training in meeting the needs of autistic students (Feldman et al., 2022; Haspel & Lauderdale-Littin, 2020). This is concerning given that teacher skills and abilities have been identified as an essential factor impacting students' academic achievement (Tefera et al., 2014). Further, 60% of school-age autistic youth expressed that having a teacher who understands their autism is the main factor that would make school a significantly better experience for them (All Party Parliamentary Group on Autism APPGA, 2017). Therefore, it is imperative that teachers receive support to feel equipped to educate autistic students in their classrooms.

Coaching can be an effective approach to address this need as it has been shown to improve the self-efficacy of teachers working with autistic students (Love et al., 2020) and can promote positive outcomes for autistic students (Ruble et al., 2013). The goals and practices of coaching are closely aligned with school-based consultation, with both involving a data-driven approach to support teachers through a problem-solving process that addresses a particular classroom or student issue (Kraft et al., 2018; Sanetti & Collier-Meek, 2019; Schultz et al., 2015). Coaching, like school-based consultation, has been defined differently by researchers and practitioners with varied theoretical orientations and training backgrounds (Erchul, 2023; Kraft et al., 2018). The subtle differences across frameworks may be that coaching can be conceptualized as a professional development (PD) activity, whereas consultation can often be focused on addressing and preventing specific issues (see Erchul, 2023 for a full discussion).

Research has identified key ingredients integral to coaching. For instance, effective coaching includes the following five features: one-on-one (individualized) frequent (intensive) meetings occurring across an extended period (sustained) that emphasize building teachers' specific skills (focused) to be used within the classroom setting (context specific; Kraft et al., 2018). Various coaching strategies can be used to support skill-building. A literature review of 49 articles identified performance feedback and practice opportunities as two of the most commonly used coaching strategies (Artman-Meeker et al., 2015). These strategies have been shown to be effective implementation supports for improving teachers' fidelity within coaching and consultation (Sanetti & Collier-Meek, 2019). A recent systematic review of 33 articles identified other variables that may impact the efficacy of coaching, including teacher engagement and the coach-teacher alliance (Yang et al., 2022). Yang et al. (2022) highlighted the diverse range of topics coaching may address, with over half of the reviewed articles focusing on supporting student language and literacy, followed by student-teacher interactions and social-emotional

development. It should be noted that only a very small subset of studies included within these reviews were focused on supporting teachers to work with autistic students (6% from Yang et al., 2022 and 18% from; Artman-Meeker et al., 2015).

Many current autism-focused coaching programs have adapted existing consultation and coaching frameworks that were not specifically designed for use as a school-based autism-focused coaching program (Suhrheinrich, 2011; Tupou et al., 2020). By using a one-size fits all approach, these programs overlook the unique issues that autism presents in the classroom setting. When autism-specific coaching and consultation models have been reported in the literature, the results have heavily focused on student outcomes (Azad et al., 2018; Strain & Bovey, 2011). Very few studies have directly examined the feasibility and acceptability of coaching within the context of instruction with autistic students.

To our knowledge, only one study to date has qualitatively evaluated perspectives from key partners within an autism-focused coaching program (Ruble et al., 2019). Within this study, several focus groups were held with various partners, including teachers, autistic individuals, and their families, who shared their beliefs and ideas about transition planning for autistic youth. The findings from these interviews informed modifications to adapt an existing autism-focused program – the Collaborative Model for Promoting Competence and Success (COMPASS; Ruble et al., 2012) – for use with transition-age autistic youth. In particular, qualitative findings revealed several important key themes including the need for more information related to transition-planning, processes that facilitate transition-planning, strategies to overcome systemic barriers, and for COMPASS trainers to possess a strong knowledge of autism. The findings from this study, which offer guidance specific to the COMPASS program, highlight the need for more research on existing coaching models that directly addresses feasibility.

Current study

With nearly four decades worth of research documenting its effectiveness (Kraft et al., 2018), coaching is a promising tool to support teachers working with autistic students. However, coaches and program developers cannot continue to rely on existing frameworks of coaching, which do not consider nor address key issues related to autism within the classroom context. Given the high workload requirements of coaching (Barrett & Pas, 2020), designing feasible, acceptable, and socially valid autism-focused coaching programs that encourage user uptake (Lindsley, 1992), promote implementation fidelity (Klingner et al., 2013), and center first-person autistic perspectives (Pukki et al., 2022) is needed. As a result, this study considers coach, teacher, and autistic peoples' perspectives to answer the following research questions:

(1) What key components are integral to autism-focused coaching?
(2) How can coaches implement each component feasibly and acceptably?

Process of inquiry

Teachers, coaches, and autistic individuals were interviewed to address these research questions. The perspectives of these informants were used to propose a conceptual framework for maximizing the feasibility and acceptability of autism-focused coaching.

Participants

Participants included seven general education teachers, six coaches who worked with these teachers in an autism-focused PD program, and ten autistic adolescents and adults who were interviewed about K-12 school experiences and teacher training needs. Teacher and coach participants were located in Southern California and Massachusetts for this two-site study; autistic interviewees were located throughout the U.S. The coach, teacher, and autistic participants within this study represent samples of convenience.

Teachers

Eligible teachers were Kindergarten through second-grade general education teachers who had at least one autistic student, or student with suspected autism, in their classroom. All teachers had a Master's degree and teaching credentials; 29% had received past professional training in autism. Teachers had an average of 12.4 years of teaching experience (range: 3–27). Demographics are shown in Table 1. Teachers were in classrooms where an average of 1.7 students per classroom had Individualized Education Programs (IEPs) or 504 Plans (range: 1–3); most (57%) were in Massachusetts versus California (43%). While each teacher had exactly one autistic student in their class at the time of the study, most (71%) had also taught at least one autistic student in past years; teachers had taught, on average, 3.4 autistic students over the years, with a range of 1–8 autistic students instructed across their teaching career. Grades taught included kindergarten ($n = 3$), first grade ($n = 3$), and second grade ($n = 1$).

Coaches

Coaches were graduate students who were enrolled in either School Psychology, Clinical Psychology, or Special Education doctoral programs. All coaches earned a bachelor's degree, with most (57%) achieving a master's degree. Coaches in this two-site study were evenly split across Massachusetts and California. Coach demographic information is shown in Table 1. All coaches reported having prior school-based

Table 1. Participant demographics.

	Coach (*n*=6)	Teacher (*n*=7)	Autistic Indivduals (*n*=10)
Age			
Mean (SD)	27.3 (0.8)	36.0 (9.2)	20.6 (5.8)
Range	26–28	25–50	15–35
Gender			
Female	100% (*n* = 6)	100% (*n* = 7)	40% (*n* = 4)
Male	0% (*n* = 0)	0% (*n* = 0)	40% (*n* = 4)
Other	0% (*n* = 0)	0% (*n* = 0)	20% (*n* = 2)
Race/Ethnicity*	33% Asian-American 17% Black 17% Middle Eastern North African 17% multiracial (Native American and Latiné) 17% White	17% Asian-American 17% biracial (Latiné and White) 17% Latiné 43% White	10% Latiné 30% multiracial (including Latiné, Black, & White; Mexican & White; and Native American & White). 60% White

Note. Race/ethnicity was based on participant's open-ended responses regarding racial and ethnic self-identification, which were later aggregated into categories.

clinical experiences (e.g., school psychology trainee, school-based BCBA, special education teacher) and most (71%) reported previous experience as a coach and/or consultant. Data regarding the coaches' level of expertise about autism at the time were not collected.

Autistic adolescents and adults

Autistic participants were recruited to participate in interviews about their K-12 school experiences and their advice for teachers of autistic students. Autistic participants were purposefully recruited to obtain a representative sample who reflect various social identities and included current and former students. All autistic participants chose to verbally participate in the interviews. As shown in Table 1, autistic participants represented a range of gender and racial/ethnic identities. Most were residing in Massachusetts ($n = 6$) with two in California, one in Florida, and one in New Hampshire. Nine had a diagnosis of Autism Spectrum Disorder or a historically equivalent diagnosis (i.e., Asperger's) from a medical professional(s); one was self-diagnosed. In their own words, participants described their autism identities as autistic (20%), autism (30%), Asperger's (20%), autism spectrum (20%), and high-functioning autism (10%). Most participants (70%) were not employed and 40% were current high school students (versus 50% who were in part- or full-time college and one non-student). Nine out of 10 had an IEP during their K-12 schooling. Most had attended public schools, two had also attended private schools for part of their K-12 schooling.

Procedures

All procedures were approved by the lead university's Institutional Review Board; informed consent was obtained from all participants prior to interviews and focus groups. Data were collected from teachers and coaches taking part in the *Smooth Sailing* PD program, and from autistic participants who agreed to be interviewed in order to inform the development of this autism-focused PD program. Autistic participant interviews occurred in 2019–2020 during the development of the *Smooth Sailing* PD program; coach and teacher interviews occurred in 2020–2021 immediately following a small trial of the *Smooth Sailing* PD program.

Smooth sailing professional development program

Smooth Sailing is a four-week, 12-hour, virtually delivered PD program for kindergarten through 2nd grade general education teachers who have at least one autistic student in their class. The program is aimed at improving autistic children's school adjustment by promoting teachers' relationships with their autistic students, increasing teachers' autism knowledge and self-efficacy, and enhancing parent-teacher partnerships. General educators – who on average report experiencing strained relationships with autistic students (Blacher et al., 2014) – were intentionally targeted for this PD program. However, the *Smooth Sailing* PD program may also be applicable to special educators who report needing more autism-focused training, though adaptations would be required. Specifically, an adapted *Smooth Sailing* PD program would be tailored to the special education classroom context and recognize and build upon existing skills special educators may already implement in their daily work with autistic students.

The program has three simultaneous components. First, *online learning modules* (two 30–60-minute modules per week across four weeks) deliver interactive and didactic content. Topics include: autism characteristics as they may present in the classroom, parent-teacher communication strategies, guidance around behavioral challenges and the difficulties underlying them, and strategies for building close, low-conflict relationships with autistic students. Modules contain written self-reflection activities to encourage teachers to apply the material to their own students.

Second, teachers were asked to engage with *in vivo practice activities* of two types: (1) regularly occurring, brief, student-teacher interactions (known as *Time2Connect* sessions) to enhance student-teacher relationships, and (2) a conversation with caregiver(s) of autistic students (known as a *Teacher-As-Interviewer* meeting) to strengthen parent-teacher collaboration. These in vivo practice activities reflect relationship-building strategies that were introduced through the online modules and were practiced and discussed during coaching sessions.

Third, the *coaching component* is designed to support the teacher's implementation of strategies for enhancing student-teacher relationships and parent-teacher collaboration in the context of autism. Coaches and teachers met for three, 60-minute, one-on-one coaching sessions via video-conferencing over the four-week period. Coaching sessions followed a semi-structured protocol, informed by best practices for adult learning (Artman-Meeker et al., 2015), and included the following: a review of the strategies covered in the online modules, in-session role-play or review of video recorded in-class practice of strategies accompanied by performance feedback from the coach, trouble-shooting difficulties using the skills, and setting goals for strategy implementation in the classroom. Coaches also provided written feedback on teachers' written self-reflections each week between sessions. To prepare for the coaching role, coaches completed a structured four-week training protocol prior to the onset of the study, which included weekly virtual meetings with supervisors (two principal investigators, two postdoctoral scholars), independent review of coaching session video examples, and small-group role-plays. Coach competency was assessed through a role-play with a supervisor, and coaches were required to demonstrate mastery and understanding of the program concepts, an ability to address the mock teacher's concern with program strategies, successful modeling of program strategies, and adherence to the protocol. Coaches who did not demonstrate these competencies were provided with additional opportunities for practice and feedback. At the start of the study, coaches received weekly supervision and supervisor feedback was offered based on a video recording of the first coaching session.

Recruitment and eligibility

Teachers. All teachers who participated in the 2020–2021 trial of the *Smooth Sailing* PD program ($n = 7$) were eligible for the interviews and all chose to take part. Teachers were recruited to enroll in a small trial of the *Smooth Sailing* PD program through program partnerships with school and district leaders, social media, word of mouth, and state-level PD clearinghouses. To be eligible for this *Smooth Sailing* PD program trial, and for these interviews, teachers must be teaching in K-2nd general education classrooms in California or Massachusetts and must have received parent consent for their autistic student or student with suspected autism to participate.

Coaches. All coaches served during the 2020–2021 trial of the *Smooth Sailing* PD program. Of the eight individuals who served as coaches during this trial, six were invited to take part in the focus group and all six took part; the remaining two coaches were post-doctoral fellows who were omitted from the focus groups due to their close involvement in the PD program development process.

Autistic adolescents and adults. Autistic participants were recruited through local autism advocacy groups, support organizations, social media, and word of mouth. Participants were eligible if they were 15 or older, based in the U.S., attended K-12 schooling in the U.S., and self-identified as being autistic. For those under 18, parents provided informed consent and autistic youth provided assent. For participants aged 18 and older, informed consent was obtained directly.

Measures

Coaches, teachers, and autistic participants completed demographic surveys. For teachers and coaches, these were completed electronically within one month of the interviews or focus group. For autistic participants, these were completed orally with the interviewer at the start of the interview. Surveys assessed gender, age, race, ethnicity, and group-specific questions (for example, teachers were asked about the years of teaching experience; coaches were asked about prior coaching experience; autistic interviewees were asked about their student status and autism-related identity or diagnosis).

Semi-structured interviews

Individual interviews with teachers. Teacher interviews, held one week after teachers' completion of the *Smooth Sailing* PD program, lasted 38.8 minutes on average (range: 26–58 minutes) and were held via video-conferencing. The interviewer was a special education doctoral student staff member who was not involved with the development or implementation of the coaching program. See Appendix A for a list of teacher interview questions. Interviews focused on teachers' preferences and opinions about coaching practices, perceptions of the role of the coach, and factors affecting the feasibility and acceptability of coaching elements.

Focus group interview with coaches. The focus group with six coaches was held via video-conferencing one week after the completion of the 2020–2021 *Smooth Sailing* PD Program trial. The focus group, which was 80 minutes long, was facilitated by the same doctoral student staff member who conducted the teacher interviews. Questions focused on the perceived role of the coach and related expectations as well as factors affecting the feasibility and acceptability of coaching aspects.

Individual interviews with autistic adolescents and adults. Interviews were conducted by a doctoral student in clinical psychology. Interviews were held either in person at the participant's home or preferred location ($n = 3$), at the authors' research office ($n = 2$), or via video-conferencing ($n = 5$) depending on participant preference. On average, interviews were 79 minutes long

(range: 65–100); two participants under age 18 opted to have a caregiver present during the interview, whose comments were not coded. Interviews focused on understanding participants' own school experiences, their advice for teachers of autistic students, and their perceptions of the training, attitudes, beliefs, and practices needed by teachers in order to effectively support autistic students.

Researcher positionality

The teacher interviews and coach focus group were conducted by a doctoral student in education with teaching and autism intervention experience. Interviews with autistic participants were conducted by a clinical psychology doctoral student who had therapy experience with autistic adolescents and adults. Data were analyzed by the first and second authors: a Middle Eastern North African woman and a White European American woman who were a postdoctoral fellow and a faculty member, respectively. Both had experience as clinicians in school settings. None of the team members identified as autistic, a fact that unfortunately maintains the pattern of non-autistic scholars conducting research with and about autistic people. This persistent problem occurs in the context of a discipline where we have underemphasized the importance of positionality among researchers (Pukki et al., 2022; Sheldon, 2017).

Data analysis

All focus group and interview sessions were recorded, professionally transcribed by a HIPAA-compliant service, and de-identified. Our analysis reflected a constructivist, grounded theory approach, in which individuals' experiences are considered in light of their positionalities, identities (including disability), and social context (Charmaz, 2014; Levitt, 2021). Coding entailed identifying meaningful excerpts from the data and grouping these excerpts into labeled categories; coding focused on excerpts that related to the feasibility, acceptability, benefits, or goals of coaching.

Throughout each of the below three stages of coding, the coders engaged in practices to ensure trustworthiness, including reflexive journaling, weekly coding discussion, memoing (independently reviewing the codes and corresponding excerpts), and peer debriefing with the larger research team. Reflexive journaling enabled coders to identify evolving interpretations and critically evaluate how our positionalities might shape interpretations (Ortlipp, 2008). These activities led to newly identified and reframed categories, identified patterns and connections across codes, and informed the resulting conceptual framework. Two coders reviewed and coded all transcripts in multiple phases.

Coach focus group interviews

First, the coders reviewed the coaches' *focus group transcript*, identifying potential codes inductively by allowing the themes to emerge from participants' responses rather than fitting these into predetermined categories. Codes were examined in relation to one another, consistent with a constant comparative approach (Charmaz, 2014; Kolb, 2012), informing decisions to combine or separate emerging codes. The two coders developed a codebook with labels, definitions, and examples. Each coder independently coded the full focus group transcript using this codebook; points of disagreements were then resolved through discussion to reach a mutual coding decision. The codebook was iteratively modified to include new codes, edit definitions, and add examples.

Teacher individual interviews

Second, *teacher interviews* were coded using the same codebook as a starting point while also inductively remaining open to new themes that emerged. As such, 15 additional codes specific to teachers' experiences were identified and incorporated through this process. Each teacher interview transcript was coded independently by both coders; points of disagreements were resolved through discussion. Saturation was reached with the fifth teacher interview; the last two interviews provided additional excerpts for existing codes but did not add any new codes to the code book.

Autistic individual interviews

Thirdly, *autistic participant interviews* were reviewed. Unlike the coach and teacher data coding, which focused on *both* the specific elements of coaching sessions *and* the contextual factors needed to support teachers' training, coding of these interviews focused on the contextual factors needed to effectively support teachers working with autistic students. These included the training needs, attitudes, beliefs, and practices teachers needed in order to support their autistic students. Based on a prior coding of these interviews, 130 excerpts had previously been coded as offering "advice for teachers," a category in which participants identified strategies, attitudes, beliefs, or training that teachers needed in order to support autistic students effectively. These excerpts were further coded inductively for evidence of contextual elements that might facilitate teachers' readiness to teach autistic students. Points of disagreement between the two coders were resolved through discussion; saturation was reached with the final of the 10 interviews not yielding additional codes.

Fourth, the coders engaged in axial coding in order to organize these themes into a meaningful framework. To do so, they reviewed all codes, combining lower-level codes into higher-level categories to account for similarities; other

categories were separated or rearranged to create a meaningful structure for understanding effective, autism-focused coaching for teachers (Charmaz, 2014; Levitt, 2021).

Findings

Results from the coaches' focus group and the interviews with teachers and autistic individuals were organized into the guiding conceptual framework shown in Figure 1, which informs our understanding of the key components and qualities of an autism-focused coaching program.

Contextual elements

Analysis revealed themes reflecting the following four contextual elements as important in coaching and training teachers of autistic students: (a) employing a neurodiversity-affirming lens, (b) priorities that reflect lived experiences of autistic people, (c) autism knowledge, and (d) positive coach-teacher alliance. Subthemes highlight strategies that were identified by teacher, coach, and autistic participants to enhance the feasibility and acceptability of each of these contextual elements in coaching.

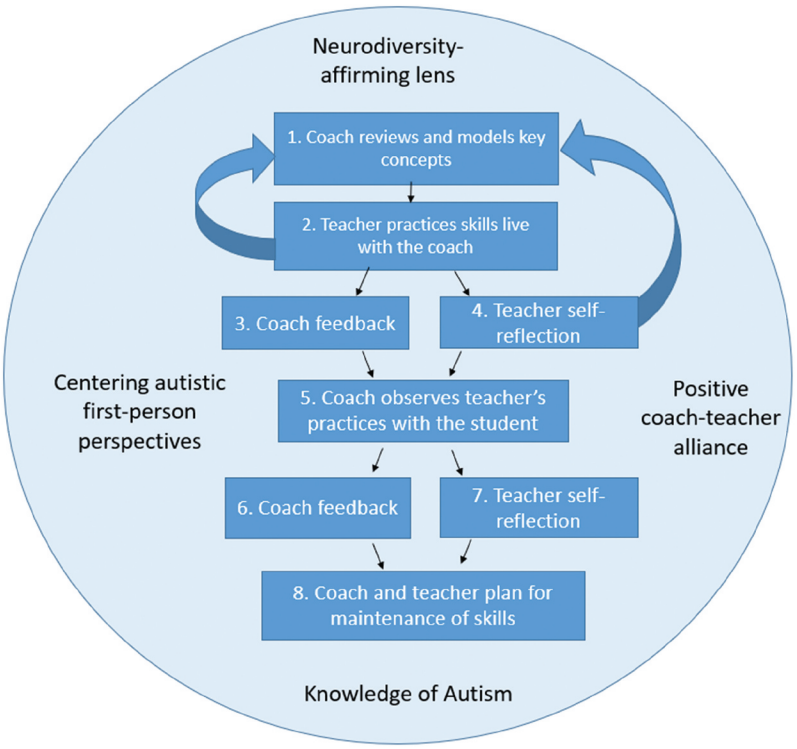

Figure 1. Autism-focused coaching framework.

Contextual element #1: Neurodiversity-Affirming Lens

The importance of employing a neurodiversity affirming lens as a key theme came most strongly from our autistic participants, who described teacher appreciation for their own individuality as an important factor leading to positive student outcomes. For example, one autistic participant described the following advice to teachers:

> We might be weird and quirky but if you let us be who we are, it will be better in the long term and you will get more out of it . . . Instead of having us hide and having us be someone else, it just makes it harder for us to learn.

Consistent with a definition of neurodiversity as the idea that the variety and range of traits across the human experience can be viewed as assets in some contexts and liabilities in others (Kapp, 2020), autistic participants expressed the need for teachers to embrace a similar understanding. They indicated a need for teachers to understand that autism is a "different process of thinking," not a better or worse one, to recognize that autistic individuals "all have different strengths and weaknesses," and to "teach kids that some people need different things." They urged flexibility in accommodating the child rather than demanding change from the child, noting that "sometimes you might have to switch the way you are teaching." Implementing a neurodiversity-oriented lens within the coaching relationship includes ensuring that all aspects of coaching (e.g., individualizing program skills to the student's needs, problem-solving to address student behaviors, etc.) and PD activities are affirming of neurodivergent and autistic experiences, rather than deficit-oriented, and involve inclusive practices that enhance the autistic student's learning preferences.

Contextual subtheme 1a: coach and teacher reframe their thinking about autistic student behaviors. Autistic participants encouraged adults working with autistic students to reconsider the ways they understand student behavior and to avoid ascribing negative motivations behind these behaviors. For example, one autistic participant reported:

> A lot of distracting behaviors, they don't intend to be distracting . . . it does not mean that every child who is behaving annoyingly is trying to be terrible. . . . It's because they don't know how to more skillfully express the fact that they're bored or frustrated or hungry or lonely.

Likewise, another participant notes that "[teachers need to understand that] if they're talking to other students [and distracting them], that might be how they try and show affection." As autism-focused coaching sessions will typically spend some time discussing autistic students' behaviors, coaches and teachers must be prepared to engage in these conversations devoid of negative beliefs about the cause of the behavior.

Contextual subtheme 1b: coach and teacher acknowledging systemic barriers. Autistic participants emphasized the importance for teachers and coaches to acknowledge differences in learning styles and to consider and confront any existing barriers present within the classroom environment that might impact the teacher's ability to instruct and support neurodiverse students. As one autistic participant put it, "it's the fact that the system wasn't made for us" with another autistic participant suggesting "sometimes you might have to switch the way you are teaching because we might not be able to pick it up the way you are teaching." Likewise, another autistic interviewee noted that teachers need to recognize that "we put so much of this spotlight on a very specific type of success in a very specific type of way to achieve it."

Contextual element #2: positive teacher-coach alliance

Teacher participants noted that a positive relationship with their coach enhanced their accountability to the program; when this alliance was present, they strived to participate fully and to get the most out of the session. One teacher participant reported, "I didn't want to show up to my coaching session and not remember what they had asked me to do." However, establishing this rapport required well-trained coaches, as one explained, "It was difficult to build rapport pretty quickly because we only had three [coaching] sessions." The following three subthemes are offered to help coaches overcome challenges to establishing a positive rapport with their teacher within a limited time frame.

Contextual subtheme 2a: coach is an active, attuned listener. Coaches reported taking extra effort to demonstrate their attention to and memory of their teacher's specific classroom situations. For example, one coach reported "referencing all the information" their teacher provided about their autistic student and their classroom situation "was really helpful to show my interest and my dedication." Another coach noted the importance of demonstrating active listening skills during "times where I felt like her answers to previous questions touched upon my upcoming questions. So, I'd [say], 'I know that you mentioned that there was this, this, and this. But is there anything else?'"

Contextual subtheme 2b: coach is transparent about coaching procedures. Coaching was perceived as more effective when coaches were transparent about their goals and the rationale behind the structure or content of coaching sessions. For instance, one coach reported having a candid discussion with the teacher in the very first coaching session, which highlighted the coaching process, including the coach's use of a semi-structured procedural script. This coach explained, "I felt like that helped a little bit with rapport because

it made it feel okay . . . that if I sounded a little bit robotic at times, it was okay." When coaches were transparent about the motives and agenda for coaching sessions, teachers were able to be more receptive and engaged.

Contextual subtheme 2c: collaborative partnership between coach and teacher. Coaches and teachers indicated they worked together as equal partners. One teacher stated "I never felt like she was the coach and I was the student in a way," and another coach noted being "able to troubleshoot together" with her teacher to resolve any issues that arose.

Contextual element #3: knowledge of autism

This theme was derived primarily from interviews with autistic participants and teachers. In particular, teachers reported preferring to work with a coach who was knowledgeable about autism. For instance, as one teacher stated, "[It helped] meeting with people [where] autism is their area of work, I feel much more comfortable getting advice from them."

Contextual subtheme 3a: build knowledge of autism. Autistic participants noted the importance of understanding autism to best serve autistic students. One autistic participant emphasized the need for teachers to "get some education about" autism, explaining that "if somebody is on the autism spectrum, it can be like they're speaking a completely different language, so [teachers need to] learn the language basically." Echoing the comments of many of the autistic interviewees, another pointed out that "[teachers need] just sort of more education about autism. Because I feel like if people were more knowledgeable about what it is, they might be more compassionate." This suggests that coaches and teachers who lack access to an autism-focused PD program will need to seek supplemental resources.

Contextual element #4: centering autistic first-person perspectives

This theme addresses the importance of implementing suggestions from autistic individuals into daily practice, including incorporating autistic perspectives about how best to support autistic students in the classroom. For example, one autistic participant called for teachers to "listen to me and actually do stuff to show that you are listening . . . [for example], if I suggest something, actually do it to show that you actually heard me."

Contextual subtheme 4a: take time to learn about the autistic student. Interviews with autistic participants indicated the need for coaches and teachers to recognize individual differences among autistic students. As one autistic participant put it, "just because you know somebody has a general diagnosis, doesn't mean that you know exactly what it means for them."

Another noted that this centering of their own perspectives can lead to supporting them more effectively:

> If they're struggling, ask them, "Is there a way that would be easier for you to do this?" Because oftentimes, the autistic kid will know how to make it easier. Oftentimes, we're smart enough to be able to figure out what accommodation we need.

Another autistic participant encouraged adults working with autistic students to "build up a connection" with the student by "trying to find that shared interest . . . And being willing to listen to it." Thus, to best support the autistic student a teacher is working with, both the coach and teacher must fully understand that student's unique profile of interests, strengths, and areas of struggle. Coaches can also support their teachers to ask, listen to, observe, and learn from their autistic students when trouble-shooting about classroom challenges or determining how to support them.

Coaching components

Teacher and coach interviews revealed themes reflecting the following eight sequential coaching components (see Figure 1) as important in coaching and training teachers of autistic students: (1) review and model the program strategies, (2) teacher's in-session practice of these strategies with the coach, (3) feedback from the coach, and (4) self-reflection by the teacher. Next, the teachers (5) practice with their autistic students in the classroom. Following practice, teachers (6) receive their coach's observation-based feedback and (7) self-assess their own performance. Finally, teachers and coaches engage in (8) future planning to ensure maintenance of program strategies. Subthemes identify practices that maximize the feasibility and acceptability of each coaching component.

Coaching component #1: coach reviews and models key concepts

Teacher participants noted this component provided them with an opportunity to better process and understand the program skills and concepts presented within the online modules. For example, one participant shared, " . . . my brain was like, 'I can't read and intake much more.' So just for me, I think the opportunity to talk through things was so effective and useful."

Coaching subtheme 1a: coach individualizes the program concepts and skills.

According to coach and teacher participants, Coaching Component #1 is strengthened when coaches help their teacher understand how the program concepts apply to their specific autistic student and unique classroom situation. For example, one teacher described how she used her time with the coach to apply concepts to autistic students of varying skill levels, asking questions such as: "What might [these skills] look like with a student who's scripting?"

One coach viewed tailoring the program content to their teachers' needs as a way to promote their teachers' "buy-in, interest, and motivation" in the program while another coach reported "with this individualization, [the teacher is] able to better serve students, and they feel more confident in being able to do so."

Coaching subtheme 1b: coach models the program skills for the teacher. The PD program of focus here in this paper (*Smooth Sailing*) included supplementary didactic materials that introduced the program concepts ahead of time and included video models. For coaching programs where supplemental didactic components are not included, modeling of program skills by the coach will be essential and particularly crucial. Teacher and coach participants viewed modeling as an important tool to help the teacher better understand what the skills would look like in practice. One coach noted:

> I think when we think about effective teaching strategies in general, the whole "I do, we do, you do" is an instructive teaching strategy. And I think that the coaching really provides the "we do" piece, which is really critical.

One teacher noted that by observing her coach model program skills within the coaching sessions, it made her "more aware of those things now, [thinking], 'Oh yeah, that's a validation.'"

Coaching component #2: teacher practices skills live with their coach

Nearly all coaches and teachers described the role-play activities embedded within this component as either "challenging," "intimidating," or "uncomfortable." Yet, role-plays were also identified by these very same participants as one of the most beneficial aspects of coaching, with one teacher noting, "it's funny I'm saying this because it makes me uncomfortable, but the role playing is definitely really helpful." In particular, teachers noted that even though their practice with the coach took them out of their "comfort zone," it prepared them to implement the program skills with autistic students and families. One teacher stated: "It forces me to practice instead of going into [the meeting with the autistic student and parent] just being like, 'Hey, let me just fly by the seat of my pants.'"

Coaching subtheme 2a: coaches and teachers need better preparation to fully engage with role-plays. The unstructured nature of role-plays was particularly challenging for both teachers and coaches. Coaches reported feeling uncertain about how to engage in role-plays effectively with their teacher. For instance, one coach stated "I'm not sure, like when it's the right time, should I stop now? ... Kind of knowing the rhythm there was a little challenging for me." This finding suggests coaches may likely benefit from a greater degree of structure in the role-play exercises provided in the

coaching session protocols, in order to most effectively conduct the role-plays with their teacher. Additionally, coaches noted that their teacher also found role-plays to be challenging: "[My teacher] kind of described that sometimes it was hard to think of something even though she knew she was trying her best." Both coaches and teachers concluded that offering teachers an agenda ahead of the session, which included the role-play scenarios, allowed teachers time to "prepare a response" when engaging in the role-play with their coach.

Coaching subtheme 2b: coach uses teacher performance to gauge whether another review of program concepts is needed. Coaches noted that they continually evaluated their teachers' performance during the role-plays to determine whether a review of the program concepts and skills needed to be repeated. For example:

> [My teacher] had some struggles with using some of the [program] skills, like on the spot . . . So I would have to remind her sometimes about using the two parts of labeled praise, so that it would stick with her.

Coaching component #3: coach feedback following practice with the coach

Coaches and teachers reported that coach feedback improved teachers' use of the program skills. One teacher noted that she found receiving a combination of both positive and constructive feedback really helpful: "Just to do it on the spot and then to get that immediate feedback of 'I really liked how you said X, Y or Z but you did include a suggestion. Make sure to leave that out next time.'" One coach reported that they used "positive feedback and constructive feedback to really enhance [their teacher's] skills and learning."

Coaching subtheme 3a: coach uses praise to mitigate teacher's discomfort implementing program skills. Coaches noted that they used positive feedback as a tool to empower their teacher when using the program skills. For instance, one coach stated:

> [My teacher] came across as pretty nervous and maybe didn't have a lot of confidence in her ability to use her skills from the program. The coaching sessions were a good time for me to provide her with a lot of positive reinforcement and positive feedback to work on building her confidence and increase her likelihood of using the skills.

Coaching component #4: teacher self-reflection following practice with the coach

Teachers reported it was helpful to reflect upon their performance of skills, including identifying their strengths and areas for improvement. For example, one teacher noted it was helpful "to think it through with [my coach]," and to consider "how I could change it."

Coaching subtheme 4a: coach helps teacher envision the use of program skills with their autistic student. Similar to Coaching Subtheme 1a, teachers and coaches noted they used self-reflection as an opportunity to consider how teachers could individualize the program skills to their own classroom setting with their autistic student. For example, one coach stated, "After we did the role-play, she started to think about how she could potentially use it in her classroom and if she had any challenges that she might foresee about using those skills in the classroom."

Coaching subtheme 4b: coach uses teachers' reflections to gauge whether another review of program concepts are needed. Similar to Coaching Subtheme 2b, coaches noted that they evaluated teachers' self-reflection to identify gaps in their teachers' knowledge of program concepts that need to be addressed. For example, one coach discussed how she identified the need to review program skills because "it's with the reflection exercises that we were able to dig deeper and understand like, 'Oh, that's why she doesn't use descriptive commenting, she didn't really get the point of it.'"

Coaching component #5: coach observes teacher's practice with the autistic student

This component involved the review of a video recording the teacher submitted that depicts their implementation of program skills with the autistic student. Although teachers expressed their discomfort with watching such a video recording, they recognized the usefulness of this coaching component (e.g., "Watching the video was helpful, too, even though I don't like seeing myself on them"). Teacher participants reported that this component helped them to master their use of skills, as one teacher used the following analogy to describe this coaching component: "We talk about at school, it's like a fire drill. If you keep practicing it, then it becomes automatic."

Coaching subtheme 5a: coach offers space for continued discussion of the skills. Teacher and coach participants found this coaching component to be further enhanced when the coach encouraged the teacher to ask follow-up questions. One coach noted that these conversations allowed the teacher to learn more about the skills when asking "follow-up questions about the particular scenarios."

Coaching component #6: coach feedback following practice with the student

Teachers, in particular, really appreciated this component because it helped them to clarify whether they were performing the program skills correctly. For example, one teacher reported the following, "I wasn't sure how I was with some of the videos. So it was nice hearing [my coach's] feedback and giving me tips and things to work on."

Coaching subtheme 6a: coach identifies teachers' successes. Several teachers noted that they appreciated when their coach identified specific moments when the teacher successfully implemented the program skills. For example, one teacher recounted the following situation:

> [My coach] was able to point out and show me parts of my video when I thought, "Oh, I failed" or "Oh, I didn't do it the right way," and she was able to say, "No, this is what I saw. You did address this" . . . [it was] a good feeling.

Coaching component #7: teacher self-reflection following practice with the student

Coaches noted that self-reflection following video review provided a unique opportunity for their teacher to become better attuned to their performance of the program skills. For example, one coach noted that this component "is where she started noticing, 'Oh, I didn't do any descriptive commenting,' . . . her noticing that and us troubleshooting it together to reflect why she didn't do it was helpful for her."

Coaching subtheme 7a: coach guides teacher to identify their own areas for growth. Coaches noted that rather than providing direct and explicit feedback to their teachers detailing areas for improvement, they instead guided their teacher to reflect upon their own struggles using the skills. For example, one coach reported that she used this recording to "show the teacher like, "Oh, what could you have done differently in this moment?'"

Coaching component #8: coach and teacher plan for maintenance of skills

Teachers and coaches offered strategies they engaged in to feasibly and acceptably implement these skills in the future.

Coaching subtheme 8a: coach and teacher anticipate future challenges. Teachers reported it was helpful to prepare for challenging future events. For instance, one teacher asked her coach "Okay, if I had this specific instance happen, how could I have handled that better?" Another teacher reported that she "came up with a strategy" with her coach to troubleshoot a specific situation "that if it were to happen in the future, this is what [the teacher] could do."

Discussion

Many teachers feel underprepared to teach autistic students and autism-focused coaching is a promising tool for equipping teachers with tailored support in working with autistic students and helping them to thrive in the classroom. This study examined perspectives from coaches, teachers, and autistic individuals regarding an autism-focused teacher professional

development. Results offer a conceptual framework that identifies qualities for maximizing the feasibility and acceptability of autism-focused coaching. This framework consists of four contextual elements – or aspects of the coaching context – that maximize the benefits of autism-focused coaching. The framework also identifies eight sequential activities as part of autism-focused coaching and offers guidance for maximizing the feasibility and acceptability of these coaching activities. The goal of this framework is to guide teachers toward increased independence as they set their own goals and plan to move forward with using these skills within their classrooms.

Contextual elements of autism-focused coaching

Findings from autistic individual, coach, and teacher interviews revealed four contextual elements that participants identified as enhancing autism-focused coaching programs. Coaching programs were collectively perceived to be most effective when the coach and teacher: shared a *positive relationship* (Contextual Element #2), possessed a broad *knowledge of autism* (Contextual Element #3), employed a *neurodiversity-affirming lens* (Contextual Element #1) when discussing issues facing autistic student(s), and recognized and were guided by *first-person autistic perspectives* (Contextual Element #4). Three of these four contextual elements are autism-specific (Contextual Elements # 1, 3, and 4). These elements are crucial for teachers to develop because research has documented a lack of autism knowledge and/or access to autism-specific training among teachers (All Party Parliamentary Group on Autism APPGA, 2017; Williams et al., 2011). As such, these findings highlight the unique skill set coaches must possess when serving in this role to guide their teacher in the development and implementation of these skills.

Interestingly, two of the identified autism-specific contextual elements (i.e., neurodiversity-affirming lens and centering autistic first-person perspectives) arose solely from our interviews with autistic participants. Various reasons could explain why these themes were not referenced within the interviews with teacher and coach participants. As interview questions differed across the three participant groups, it is possible that teacher and coach participants may not have been sufficiently prompted to discuss these elements. It is also quite possible that the coaches and teachers (the majority of whom were non-autistic) overlooked the importance of this contextual element to the coaching program. This is consistent with patterns in the larger school-based autism literature where autistic students, autistic researchers, and autistic advocates are often the ones calling for better inclusion of autistic perspectives (All Party Parliamentary Group on Autism (APPGA, 2017; Goodall, 2018; Mueller, 2021); it is crucial that we listen to these calls and work to better center neurodiversity and first-person autistic priorities in our educational systems and teacher trainings (Hodge et al., 2019).

One of the contextual subthemes that derived solely from autistic participants was 4a (Take Time to Learn about the Autistic Student). This subtheme highlights suggestions from autistic participants that may not be feasible for teachers to accomplish with students across the spectrum. Specifically, teachers were encouraged to "ask" their autistic students to share their beliefs and perceptions about the instructional strategies that were most acceptable to the particular student. For autistic students who are unable to verbally communicate these ideas, strategies that capitalize on nonverbal interactions may be an appropriate substitute (e.g., noticing nonverbal cues autistic students may offer or implementing simple visual aides students can point to in order to communicate the acceptability of instructional strategies).

The second contextual subtheme overlooked by teacher and coach participants was 1b (Coach and Teacher Acknowledge Systemic Barriers). This is in line with the principles of Universal Design for Learning (UDL), a comprehensive framework to support neurodiverse learners in the classroom (Rose et al., 2002). This is supported by existing research that has found UDL to be an effective approach to improve the learning of all students (Capp, 2017). Though research on the efficacy of UDL with autistic populations is limited, recent qualitative studies with educators have identified UDL to be an acceptable practice (Carrington et al., 2020; Oliver-Kerrigan et al., 2021).

Although the fourth and final contextual element (positive coach-teacher alliance) was not autism-specific, both coaches and teachers reported that truly effective coaching depends on establishing a strong positive rapport where teachers and coaches work together collaboratively. This finding is consistent with previous research, which has identified a coach-teacher alliance to be an important predictor of various outcomes, including implementation fidelity of evidence-based interventions and teacher engagement (Johnson et al., 2016; Wehby et al., 2012). The findings from the current study is in line with the existing literature that has identified effective communication as an essential component to successful consultation (Erchul et al., 2014; Newman & Rosenfield, 2019). Specifically, coaches perceived active listening skills as a critical component to building their rapport with their teachers. Although coaches did not explicitly mention the importance of the additional skills they were trained to implement (e.g., assessing understanding, summarizing, and validation), it is likely this constellation of communication skills worked together to establish a positive teacher-coach alliance. Further, past research has rightly observed that coaching often reflects hierarchical relationships where the coach is positioned as an expert who imparts knowledge to the teachers (Kraft et al., 2018). However, the findings from this paper encourage a shift in this definition to view coaching as a partnership built upon mutual respect and a recognition that each party in the coaching relationship brings their own areas of expertise, consistent with school-based consultation

(Erchul, 2023). Within autism-focused coaching programs, the coach brings expertise in autism, neurodiversity, and inclusive practices while the teacher brings expertise on instructional design, the specific classroom environment, and an understanding of the autistic student's unique profile.

Coaching components of autism-focused coaching

Interviews with coaches and teachers who completed the *Smooth Sailing* coaching program revealed strategies and practices to promote the feasibility and acceptability of the eight sequential coaching components. These coaching components were identified as helpful to support teachers' adoption of specific strategies for interacting with autistic students and are generally aligned with school-based consultation and implementation support best practices (Newman & Rosenfield, 2019; Sanetti & Collier-Meek, 2019). As such, they reflect best practices of adult learning theory and could be valuable for supporting teachers to work with a range of students.

Teachers and coaches both viewed the coaching sessions as a unique opportunity to further discuss the program concepts and skills presented within the didactic materials. Further, coaching sessions offered teachers a space to consider how to apply program skills to their unique classroom setting and their specific autistic student. This process of reflection and adaptation for the unique student and classroom contexts has been identified as an important foundation for supporting teacher implementation (Sanetti & Collier-Meek, 2019). Relatedly, coaches and teachers perceived these coaching components to support skill-building and helped teachers become better attuned observers of their own use of the program skills (Pianta et al., 2014). The opportunity for modeling, practice, and feedback has been shown to increase teachers' fidelity (Collier-Meek et al., 2019). For instance, teachers noted their own self-assessment of their performance (Coaching Subtheme 7a).

Interestingly, the coaching components that made teachers feel the most uncomfortable (i.e., role-playing with their coach and watching a recording of their own practice with the student) were also the components that both coaches and teachers identified to be the most beneficial to mastering the program skills and preparing teachers to implement the skills in practice. The benefit of these types of support, alongside the challenge of their implementation, has been described in literature that suggests that these supports are provided responsively and as needed if initial training and support is insufficient (Sanetti & Collier-Meek, 2015). Future research might consider incorporating other types of low-intensity consultation strategies and implementation support, such as implementation planning or self-monitoring, within autism focused coaching (Sanetti & Collier-Meek, 2019).

Further, coaches were also sensitive to when their teachers were anxious or lacked confidence around their use of the skills. Prior research has posited that teacher's negative emotions including diminished self-efficacy can impact their instructional performance, student's achievement, and lead to burnout (Frenzel et al., 2016; Zee & Koomen, 2016). Other research has found that teachers tend to more consistently implement intervention strategies that they can do with high-quality (Sanetti et al., 2016). Thus, it is imperative that coaches promote their teacher's comfort and confidence when engaging in these activities. Coaches reported various strategies, many of which stemmed from the accompanying feedback and teacher self-reflections used to support their teachers through these challenging activities. These include: (1) praise, (2) offering teachers the chance to prepare by previewing a coaching session agenda, (3) highlighting teacher successes, and (4) guiding teachers to identify their own areas of growth. These strategies have utility for and can be embedded in general school-based consultation and coaching.

Limitations and future directions

Our findings incorporated the perceptions of our key partners who reflected a diverse range of racial and ethnic identities, an important strength to this research, supporting the generalizability of these findings to various cross-cultural interactions between teachers, coaches, and the autistic students they serve. However, a diversity of gender identity was not well represented, particularly with teachers and coach participants who all identified as female. Additionally, autistic participants recruited for this study were those who were comfortable participating in face-to-face verbal interviews. As a result, our findings may not reflect the experiences of autistic individuals who require support to communicate their perspectives and needs. Further, our positionality as non-autistic researchers and the developers of the *Smooth Sailing* professional development and coaching program influences our interpretation of the findings. Future research that includes participants reflecting a more diverse range of gender identities and research that is guided by autistic researchers or collaborators, rather than solely as participants, is warranted. In line with a Community Based Participatory Research approach (Nicolaidis et al., 2019), this research should be driven by the priorities of autistic collaborators and students themselves, in addition to teachers (Pukki et al., 2022). Additionally, the findings from this study do not include the perspectives of caregivers and legal guardians and future research should include these partners who take an active role in advocating on behalf of their autistic children. Further, member-checking was not able to be conducted within a reasonable time frame following the interviews. As such, future qualitative research on this topic that includes member-checking to inform the current framework is needed.

Conclusion

Extending research on the key ingredients of effective coaching programs (Artman-Meeker et al., 2015; Kraft et al., 2018), the current study's proposed framework incorporates perspectives from key partners (i.e., teacher, coaches, and the autistic community) into an autism-specific coaching model. This coaching framework highlights steps, strategies, and skills that coaches can carry forward to not only feasibly support teachers working with autistic students, but also to do so in a way that is in line with the perspective of key partners.

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Appendix A: Questions from Focus Group and Interviews

These interviews were longer; only questions pertinent to this paper (i.e., coaching, teacher readiness to support autistic students, and teacher supports needed) were included.

Interview Questions for Teachers

1. Did this program meet this need and/or your expectations? Why or why not?
2. Your assigned coach responded to your answers to self-reflections and exercises from the modules through written feedback. In your opinion, how did the written feedback contribute to your overall experience in the program?
3. How feasible was it for you to make time for the three coaching meetings?
4. How useful were the coaching sessions in supporting your work with the student and their parent? Why?
5. Aspects of the coaching sessions included role-plays, practice activities, and reflection questions. Was there any aspect that you liked the most? And why?
6. If there were no face-to-face (in-vivo) coaching element, would this have affected your engagement or learning in the program? Why or why not?
7. What do you think about having a peer, Smooth Sailing teacher graduate, or school psychologist as the coach rather than an outside coach? And what about the amount of coaching: would you like more coaching, less coaching, or is it about right? Can you tell me why?
8. Did this program help you feel like you would be more equipped to work with autistic students in the future? If so, how?
9. If you could change any one thing about the program, what would it be? Why?

Interview Questions for Coaches' Focus Group

1. What is the purpose of a coach within any PD program for teachers?
2. What experiences, outside of the training you underwent for the *Smooth Sailing* program, have influenced your readiness to serve as a coach in this project? And why?
3. Aspects of the training to prepare coaches to serve in this role included weekly meetings, modeling coaching sessions, role-playing with a peer, receiving supervision on your written feedback and recording coaching session. Of these various strategies, which did you find to be the most useful to prepare you for serving as a coach?
4. From your perspective as the coach, what did you find to be the most challenging aspect of the training procedures previously mentioned? Why?

    a. What solution did you use of recommend future coaches use to overcome this challenge?

5. Aspects of the coaching *sessions* included role-plays, practice activities, and reflection questions. Were there any aspects that you liked the most? And why?

    a. [Follow-up questions]: From your perspective as the coach, which aspects of the coaching session do you find most useful to provide support to your teacher?

    b. From your perspective as the coach, which aspects of the coaching session did you find to be the most challenging? Why?

    c. [Follow-up question]: What strategies did you use or recommend future coaches use to overcome these challenges?

6. What do you think the teacher found useful within coaching? Why?
7. What do you think the teacher found most challenging about coaching? Why?
8. Why do you believe the role as coach is an important component to include in a professional development program for teachers?

Interview Questions for Autistic Participants

1. Tell me about your teachers in elementary school. What do you remember about them?
2. Was there a teacher who had a positive impact on you? Tell me about them. Why were they so impactful for you? How did they interact with you?

   a. What would you say to that teacher if you saw them today? What would you want them to know about what was most impactful for you?

3. Every autistic person is different, and autism affects people's school experiences in different ways. How do you think your autism affected your experiences in school? How did your autism affect your interactions with teachers? With peers?
4. Were there times when elementary school was very difficult for you? Were there things that were really difficult about elementary school? What role did teachers play in these situations?
5. Were they any interactions with teachers that really did *not* go well? Or times when you wish your teacher had done something differently?
6. What advice do you have for teachers working with autistic students?
7. What do you wish your teachers had known when they were teaching you?
8. What would have helped make your school experience better?
9. If an elementary school teacher were to ask you: what do I need to know about autism? What would you tell them?
10. If a teacher asked you what they could do to make their student on the spectrum most comfortable in the classroom, what suggestions would you have?
11. Many teachers say they are unsure how to help students with autism have more positive interactions with their peers. What role did your teachers play in helping you interact with or develop friendships with your peers? What was helpless or unhelpful? What do you wish your teachers had done to help you get along well with your peers and make connections with them?
12. Do you feel like there are positives or strengths you have because of autism? What are they? How did your teachers recognize or integrate these? How do you *wish* teachers had integrated those into your experiences in the classroom or school?