General Education Teacher Perspectives on Succssfully Including Students with Autism

Focus on High-Poverty Schools

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Abstract

Inclusion of students with autism in general education classrooms is increasing. However, barriers to inclusion, such as limited teacher training and limited knowledge of autism, are often compounded in districts where large percentages of students live in poverty. This study examines general education teachers' perceptions, training needs, and use of evidence-based practices (EBPs) for students with autism in high-poverty schools. Using a mixed-methods explanatory sequential design, survey and focus group data identified the EBPs teachers used most frequently, EBPs they wanted to learn about, barriers to and facilitators of

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inclusion, and teacher training needs. Results guide practical, feasible suggestions for addressing barriers to inclusion, leveraging facilitators, and supporting teachers who are including students with autism in historically underserved communities. Implications for increasing teacher buy-in and improving ease of training in EBPs are discussed.

Introduction

Inclusion of students with autism in general education classrooms is becoming increasingly common (Morningstar et al., 2017). In 2019, the majority of school-age children with autism (65%) received their education in the general education classroom for at least 80% of their day (Office of Special Education and Rehabilitative Services, 2022). The term *inclusion* can represent a multiplicity of meanings and interpretations and is often mistaken for *mainstreaming*. For the purposes of this article, *inclusion* is defined as complete assimilation of a student with autism into all aspects of age-appropriate general education classrooms, regardless of the extent of their needs, where the general education classroom is the child's "home base" for the entirety of their day (Mesibov & Shea, 1996; Murphy, 1996). High-quality inclusive education can lead to positive improvements in academic, social, and adaptive behaviors for many students with autism (Barrett et al., 2020; Nahmias et al., 2014; Sainato et al., 2015; Wehmeyer et al., 2020). Inclusion is also associated with positive outcomes for classmates without disabilities, such as academic achievement, increases in positive perceptions and comfortability with disabilities, and development of new friendships with peers with disabilities (Szumski et al., 2017; Travers & Carter, 2021).

However, owing to a variety of factors, successful inclusion may be less likely in schools with high percentages of students living in poverty, creating disparities in access to inclusive education. The quality of both special education and general education is generally lower in high-poverty schools (Billingsley & Bettini, 2017; Sutcher et al., 2019). Additionally, states with larger populations of economically disadvantaged and racially diverse individuals have more restrictive educational placements (Kurth et al., 2016), meaning that students from lower socioeconomic backgrounds are less likely than other students to be educated in inclusive settings. These issues indicate a need to increase high-quality inclusive practices in schools with large percentages of students living in poverty.

Increased challenges exist related to lack of teacher training and experience in high-poverty schools. Teachers in these settings are, on average, less qualified and receive fewer opportunities for professional development and leadership support than teachers in more affluent schools (Bettini & Park, 2021; García & Weiss, 2019). This is concerning, because having high-quality, well-qualified teachers is associated with student academic achievement (Dudek et al., 2019; García & Weiss, 2019).

Teacher turnover is another significant issue serving as a barrier to inclusion. The higher the percentage of students with disabilities in a general education

classroom is, the higher are the odds of teacher attrition (Gilmour & Wehby, 2020). Research has shown that educating students with challenging behaviors, such as students with autism, without sufficient training and support contributes to teacher attrition (Jennett et al., 2003). Furthermore, teacher turnover is significantly higher in high-poverty schools (Carver-Thomas & Darling-Hammond, 2017; Simon & Johnson, 2015). One way to reduce turnover is to increase self-efficacy with teaching students with autism, which is related to job satisfaction for teachers serving this population (Love et al., 2019). A significant predictor of teacher self-efficacy for educating students with autism is having prior training specific to autism (Corona et al., 2017). Thus providing teachers with autism-specific training contributes to their self-efficacy, which in turn supports teacher retainment.

To ameliorate barriers to inclusion and best support teachers, it is important to identify and address the contextual factors influencing the uptake and sustainment of autism interventions in schools (Odom et al., 2020). For example, research has demonstrated that factors like teachers' knowledge, perceptions, training needs, and extent of support impact their implementation of autism interventions (Locke et al., 2016; Sulek et al., 2019b). One way to address these contextual factors is to identify the strategies general education teachers are already using that align with autism evidence-based practices (EBPs) to streamline training. This could facilitate teacher buy-in and reduce the burden that teachers report experiencing regarding being required to attend additional trainings, which they often have insufficient time and resources to attend (Suhrheinrich, Schetter et al., 2020).

EBPs, backed by extensive, rigorous research, are intervention practices that provide positive outcomes to children and youths with autism (Hume et al., 2021). Implementing EBPs for autism in inclusive classrooms is effective for supporting student outcomes and is consistent with indicators of a high-quality inclusion. For example, EBPs for autism (e.g., visual supports, naturalistic instruction, peer-mediated instruction, self-management) were a foundational component of a high-quality inclusive kindergarten model associated with significant improvements in nonverbal IQ, language scores, and academic achievement for students with autism (Sainato et al., 2015). Additionally, the Inclusive Classroom Profile, a validated measure used to assess the quality of inclusive settings for children with developmental disabilities (Soukakou, 2012), contains multiple EBPs for autism, such as strategies for communication, supports for transitions, and adult facilitation of social interactions with peers (Hume et al., 2021; Soukakou et al., 2014). This is evidence that many EBPs for autism are important components of high-quality inclusive settings.

Many general education teachers report knowing about or using autism EBPs (Morin et al., 2020; Oliver-Kerrigan et al., 2021). This is encouraging, as more knowledge of an EBP is associated with a higher likelihood of using it (Sulek et al., 2019b), and use of EBPs is associated with positive student outcomes and quality inclusive programming (Sam et al., 2020b). However, general and special educa-

tion teachers continue to report receiving insufficient professional development related to autism (Basckin et al., 2021; Corkum et al., 2014; Lindsay et al., 2013). Many teachers are unfamiliar with EBPs for autism, use practices that are not empirically supported, and hold misconceptions about autism (Brock et al., 2014; Sanz-Cervera et al., 2017; Sulek et al., 2019a). Even if a teacher reports using an EBP, there are likely contextual factors (e.g., perceptions, training needs, access to resources) impacting their ability to use these EBPs effectively. These factors need to be sufficiently understood and addressed in the context of high-poverty schools for effective uptake and sustainment of autism interventions (Odom et al., 2020).

A paucity of research exists that focuses on EBPs and inclusion in high-poverty schools, and the current study addresses this gap in the literature. The current study supports high-quality inclusive practices by identifying general education teachers' knowledge, perceptions, training preferences, and experiences with including students with autism in high-poverty schools. Specifically, the purpose of the current study is to (a) identify the most highly used and positively perceived autism EBPs in high-poverty schools, (b) describe the perceived barriers to and facilitators of inclusion in high-poverty schools, and (c) identify and describe training preferences of teachers working in high-poverty schools.

Method

Participants

Inclusion criteria were (a) currently the lead teacher in a general education classroom; (b) had at least one student with autism in their classroom during the past year; and (c) teaching in a school where at least 50% of students receive free or reduced-price lunch, which is a common proxy for high-poverty schools (García & Weiss, 2019). Twenty-seven general education teachers participated. Participants taught kindergarten through eighth grade in 16 counties across California, with 81% teaching in public schools and 19% teaching in charter schools. This included counties in southern, central, and northern California, with Los Angeles County being the most populated county represented and Mendocino County being the least populated. According to definitions from California census data, 56% of participants worked in schools located in rural areas, and 44% were in urban areas (Economic Research Service, 2000). The average percentage of students receiving free or reduced-price lunch was 69.9% (SD = 14.1). Participants had an average of 12.8 years (SD = 8.9) of teaching experience. Fourteen participants had a bachelor's degree and 13 had a master's degree as their highest level of education. The sample was 92% White, 4% American Indian or Alaskan Native, and 4% Asian, Native Hawaiian, or other Pacific Islander. Ninety-three percent of the participants identified as female, and 7% identified as male. In regard to training specific to autism, 15% of the sample reported receiving no training; 56% had participated in an autism workshop and/or continuing education unit course; and 59% received

on-the-job training, which included previous employment as an instructional aid and consultation with colleagues, such as special education teachers, speech pathologists, or school psychologists. Eight teachers reported receiving both a workshop or course and on-the-job training.

Design

This study used a mixed-methods explanatory sequential design in which qualitative data collection and analysis followed quantitative survey data collection to expand survey results and better contextualize findings (Schoonenboom & Johnson, 2017). This study is based in grounded theory in that it examines a social process (i.e., inclusion) in the context of high-poverty schools and provides explanatory theories of patterns in the conditions of this social process (Starks & Trinidad, 2007).

Data Collection and Measures

Demographics Survey: Participants completed a demographic survey about their school and district, ethnicity, race, gender, years of teaching experience, level of education, and type(s) of formal training related to autism.

Educators' Knowledge and Value of Research-Based Practices for Students With Autism Survey: The original survey from Williams and colleagues (2011) assessed educators' knowledge of EBPs to support students with autism and the extent to which educators valued receiving more information about each practice. The study team adapted this survey in the following ways: We (a) modified the wording of questions to describe each of the 25 EBPs for supporting individuals with autism (Wong et al., 2015) and (b) added universal design for learning (UDL), positive behavior interventions and support, and multitiered systems of support, common educational frameworks that can support student outcomes (Stahmer et al., 2020). The survey listed each practice with a brief description. Participants indicated on a 4-point Likert scale ranging from 1 (*not yet knowledgeable*) to 4 (*highly knowledgeable*) for their familiarity with each practice and from 1 (*not valuable*) to 4 (*highly valuable*) regarding how valuable they felt it would be to receive information on how to use each practice.

Educator Autism Training Survey: The research team developed this three-item survey to assess teacher training experience. Teachers indicated their agreement with the following statements on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*): (a) I feel confident in my skills and ability to include students with autism in my classroom and (b) I wish there were more opportunities as a teacher to further my professional skills and knowledges to support students with autism. Teachers then selected their top three choices of training format from the following: professional development workshops provided by the school or district,

self-sought professional development workshops, self-study (e.g., books, articles), preservice teacher preparation, direct coaching, and collaborating with other teachers and staff (e.g., school psychologist, behavior analyst).

Focus Groups: Focus groups were used to obtain an in-depth understanding of determinants of inclusion specific to high-poverty schools (Nyumba et al., 2018). Two to four teachers participated in each focus group. Group facilitators used a preestablished interview guide and two hypothetical vignettes to lead discussions during focus groups. Using vignettes as a starting point for discussion is a well-established focus group format (Oliver-Kerrigan et al., 2021; Stahmer et al., 2012). The vignettes for this study were developed by the authors based on the structure and content of similar vignettes used for previous research (Stahmer et al., 2012). To ensure social validity, vignettes were reviewed by researchers and educators with extensive experience supporting students with autism in schools. The interview guide and the two vignettes used with each group are included in the appendix.

Procedure

The university institutional review board determined this study to be low-risk and exempt. Recruitment occurred via university email Listservs, Facebook, and other social media and through flyer distribution to schools and educators. Interested teachers received a link via email to determine eligibility. Eligible participants completed online consents and the surveys, then researchers contacted them to schedule focus group participation. Researchers scheduled four to five participants per group on a first-come, first-served basis. Participants received a copy of the fictional vignettes and questions via email prior to the meeting. Focus groups took place over Zoom, a free, secure, web-based meeting platform. All meetings were recorded and uploaded to a secure online server, then transcribed for coding. Two researchers with backgrounds in special education cofacilitated the groups following the interview guide. Participants received a gift card for survey and focus group completion.

Quantitative Data Analysis

For rank order questions about training type, we identified (a) the total number of respondents selecting each training type in their top three and (b) the training types selected most frequently as the first, second, and third choices. For Likert-scale survey questions, we calculated the mean response for each item and the percentage of respondents indicating "strongly agree/agree," "knowledgeable/highly knowledgeable," or "valuable/highly valuable."

Qualitative Data Analysis

We analyzed focus group data using a grounded theory approach (Harry et al.,

2005) and collaboratively developed a codebook based on previous research and current questions. Two researchers with master's and doctoral degrees in education independently conducted open coding to examine, conceptualize, and categorize data, then used axial coding to identify patterns and group-related data into categories. Researchers then used selective coding during collaborative discussions to review codes and themes and reach a consensus around any disagreements for a more comprehensive analysis (Saldaña, 2021). Thirty percent of transcripts were coded by a third observer to assess interobserver reliability (95.9%).

Results

Knowledge and Perceived Value of EBPs

All 27 participants completed every question on the survey. Survey data (see Table 1) indicate that teachers were most knowledgeable about positive behavior supports (M = 2.19, SD = 0.83), modeling (M = 1.93, SD = 0.92), and reinforcement (M = 1.93, SD = 0.78) and least knowledgeable about pivotal response teaching (PRT; M = 0.41, SD = 0.69), discrete trial training (DTT; M = 0.48, SD = 0.80), and video modeling (M = 0.78, SD = 0.89). Teachers reported that the most valuable practices to learn about were UDL (M = 2.59, SD = 0.50), social skills training (M = 2.48, SD = 0.85), and PRT (M = 2.44, SD = 0.70). Least valuable were video modeling (M = 1.89, SD = 1.01), the Picture Exchange Communication System (M = 1.93, SD = 0.83), exercise (M = 1.93, SD = 1.00), and DTT (M = 1.93, SD = 0.96).

Preferred EBPs

The following results from focus groups expand and enhance the survey results on preferred EBPs by elaborating on frequently used strategies that may not have been in the top three from the survey. During focus group discussions, the EBPs teachers most frequently referred to using were (a) visual supports, (b) reinforcement, and (c) peer-based intervention (see Table 2).

Although not in the top three on the survey, visual supports were often used and highly valued and the most discussed in the focus groups. Teachers reported using visual supports to help students with transitions, social communication, daily activities, and so on and reported them to be effective and valuable. Visual supports included graphic organizers, timers, clocks that visually represent time remaining, schedules, and picture cards. One teacher reported, "I would try to give him a lot of heads up on what we're doing, like a visual schedule, I think might be helpful, and maybe even a first-and-then chart if he's really having trouble with transitions." For reinforcement, teachers described providing preferred items and activities after a student successfully completed academic, social, and other tasks, such as stickers, candies, and time with a preferred item or activity. Many teach-

Table 1

Survey Results of Teacher Knowledge and Perceived Value of Practices

		Knowledge		*Perceived Value*	
Intervention Practice	*Category*	*M*	*SD*	*M*	*SD*
Antecedent-based interventions	EBP	1.26	0.90	2.37	0.69
Cognitive behavioral interventions	EBP	0.89	0.97	2.41	0.84
Differential reinforcement of alternative, incompatible, or other behavior	EBP	1.63	0.93	2.30	0.61
Discrete trial teaching	EBP	0.48	0.80	1.93	0.96
Exercise	EBP	1.74	0.71	1.93	1.00
Extinction	EBP	1.48	0.89	2.00	0.73
Functional behavior assessment	EBP	1.15	1.03	2.19	0.88
Functional communication training	EBP	0.81	0.88	2.37	0.74
Modeling	EBP	1.93	0.92	2.00	0.78
Naturalistic intervention	EBP	1.41	0.97	2.37	0.69
Parent-implemented intervention	EBP	0.93	1.00	2.11	0.93
Peer-based intervention	EBP	1.33	0.92	2.15	0.86
Picture exchange communication system	EBP	1.22	0.93	1.93	0.83
Pivotal response teaching	EBP	0.41	0.69	2.44	0.70
Prompting	EBP	1.67	0.78	2.11	0.89
Reinforcement	EBP	1.93	0.78	2.26	0.86
Response interruption/redirection	EBP	1.67	0.92	2.22	0.85
Scripting	EBP	1.26	0.98	2.00	0.78
Self-management	EBP	1.37	0.84	2.37	0.74
Social narratives	EBP	1.35	0.94	2.22	0.85
Social skills training	EBP	1.26	0.90	2.48	0.85
Structured play groups	EBP	1.11	0.89	2.15	0.95
Task analysis	EBP	1.48	1.05	2.22	0.75
Technology aid instruction and intervention	EBP	1.19	0.88	2.26	0.98
Time delay	EBP	1.26	1.06	1.96	0.94
Video modeling	EBP	0.78	0.89	1.89	1.01
Visual supports	EBP	1.78	0.89	2.37	0.74
Universal design for learning	OTH	0.96	0.82	2.59	0.50
Multitiered systems of support	OTH	1.52	0.98	2.26	0.90
Positive behavior interventions and supports	OTH	2.19	0.83	2.26	0.94

Note: EDP = evidence-based practice for autism.
OTH = other practice.

Table 2
Most-Used Evidence-Based Practices and Practices Perceived to Be Valuable to Learn

Most-used EBPs	*Examples from focus groups*	*Resource*
Visual supports	Visual schedule, timer (sand timer or digital clock) for transitions, picture icons for communication, graphic organizers, pictures of instructions	California Autism Professional Training and Information Network[a]
Reinforcement	Token economy system, preferred stickers, candies, time with a preferred item or activity	Autism Focused Intervention Resources and Modules[b]
Peer-based intervention	Peer modeling, prompting, and support for social interactions, transitions, academics, and so on	Autism Focused Intervention Resources and Modules[b]
Top-valued practices	*Definition*	*Resource*
Universal design for learning	Student-centered framework supporting diverse learners by providing various options for students to access content and demonstrate knowledge	Information on UDL from the Center for Applied Special Technology[c]
Social skills training	Group or individual instruction to teach learners appropriate ways to socialize through instruction, role-playing, and feedback	PEERS[d]
Pivotal response teaching	Naturalistic intervention focusing on pivotal area of motivation for collateral positive effects on social communication, behavior, and academic skills	Free resources on classroom pivotal response teaching[e]

Note: EBP = evidence-based practice for autism. UDL = universal design for learning. [a]CAPTAIN; http://captain.ca.gov/. [b]AFIRM; http://afirm.fpg.unc.edu/. [c]CAST; http://cast.org/. [d]http://semel.ucla.edu/peers. [e]CPRT; http://classroomprt.org/.

ers described reinforcement as easily implementable in the classroom and highly effective. Peer-based interventions were described as supporting transitions, social skills, and academics without needing to rely on an adult. Teachers described having a peer or small group of peers interact positively with the student with autism to provide modeling, prompting, and social interaction. Teachers discussed how helpful it was for the student with autism to have a peer "right there with them to . . . facilitate or prompt or get other kids to go and include them" and that peer support

"helps with building that friendship and community within the class." Survey results validate focus group responses regarding peer-based interventions and supports, as teachers ranked social skills groups as one of the most highly valued practices to learn to implement. Table 2 includes the most-used and top-valued EBPs, with examples provided by participating teachers as well as resources the research team identified as supporting the use of identified practices.

Teacher Training Needs and Preferred Format

Although 59% of participants agreed or strongly agreed with the survey statement that they felt confident teaching students with autism, 93% also agreed or strongly agreed that they desired more training specific to autism. On both quantitative and qualitative measures, teachers reported coaching to be their top choice of training. Teachers discussed needing someone to come into their classrooms and demonstrate how to use strategies "in the real world" and described how coaching helps to translate skills from paper to practice. The next most preferred types of training were consultation with colleagues and caregivers and professional development from the school or district. Teachers reported wanting more information and training specific to (a) facilitating social interactions, (b) preparing for individual goals and needs of students with autism, (c) curriculum modifications, and (d) responding to disruptive and/or escalating behavior.

Barriers to Inclusion

Focus groups discussed the top-reported barriers to inclusion as (a) challenges with social communication and disruptive behavior, (b) peer needs and responses, (c) limited professional development opportunities, and (d) school isolation (see Table 3). Teachers referred to student challenges with social communication and/or disruptive behavior related to changes in schedule, transitions, and so on. Teachers expressed concern about simultaneously meeting the needs of peers and the student with autism and about peers treating the student with autism negatively. Teachers agreed that professional development rarely, if ever, focused on students with disabilities or inclusion and was instead "whatever your district had decided you're going to have professional development on." Teachers were often on their own to figure out how to access training. They reported a lack of time to attend trainings and limited support with translating training material into classroom practices as barriers to inclusion. Multiple teachers reported isolation and lack of communication as barriers to consulting with other professionals about inclusion. Specifically, teachers stated that working in small, rural schools and/or geographically distant schools made it challenging to communicate and consult with others.

Table 3
Suggestions for Addressing Barriers to and Facilitators of Inclusion

	Suggestions
Top barriers to inclusion:	
Challenges with social communication/ disruptive behavior	Implement EBPs that support social communication and reduce challenging behavior, such as visual supports, reinforcement, and/or peer-based intervention
Peer needs and responses	Select and implement strategies effective for supporting a range of diverse learners, such as UDL and visual supports; educate peers on diversity, disability, and differences
Limited professional development opportunities	Provide ongoing, high-quality training, coaching, and mentorship based on teacher reported needs; offer accessible telehealth training; use research-based virtual training modules, such as AFIRM
Top facilitators of inclusion:	
Consultation and collaboration with colleagues	Establish professional learning communities and networks of educators and professionals (e.g., CAPTAIN[a])
Instructional aide	Train instructional aides to implement EBPs; use peer-based interventions and supports to reduce the need for adult support
Diverse range of student needs is the norm	Minimize teacher burden by emphasizing how EBPs can support other learners

Note: AFIRM = Autism Focused Intervention Resources and Modules. CAPTAIN = California Autism Professional Training and Information Network. EBP = evidence-based practice for autism. UDL = universal design for learning.
[a]http://captain.ca.gov/.

Facilitators of Inclusion

Teachers discussed top facilitators to leverage for inclusive practices (Table 3) as (a) consultation and collaboration with colleagues, (b) instructional aide support, and (c) a diverse range of peer needs. Teachers discussed the importance of receiving guidance and resources from other teachers and/or professionals. Another common theme was the importance of an instructional assistant for student and/or classroom-wide support. Teachers described how they already accommodated and individualized curriculum and supports for many other students, which facilitated inclusion of a student with autism. One teacher said, "I think a lot of these things are things that we probably already do for other students besides the students that are autistic"; another mentioned, "I'm adapting for a variety of students anyway,

every day, every year." These responses are consistent with the framework of UDL, whereby educators design class-wide curricula that include adaptations and accommodations for diverse learners.

Table 3 also includes research team–identified suggestions to address identified barriers and engage identified facilitators.

Discussion

Study findings can guide the content and delivery of training for general education teachers, including for students with autism in high-poverty school programs. Teachers reported feeling confident teaching students with autism; however, the vast majority still wanted more training. Addressing this is critical, as training contributes to greater teacher self-efficacy and can reduce and/or prevent burnout (Corona et al., 2017), which is particularly important for high-poverty schools, which have higher rates of burnout and teacher turnover (Bottiani et al., 2019; García & Weiss, 2019). The current study confirms teachers' desire for coaching in the form of ongoing, hands-on, in-service learning opportunities and mentorship, which is consistent with previous research on teachers who do not work in high-poverty schools (Corkum et al., 2014; Lindsay et al., 2013; Oliver-Kerrigan et al., 2021). This is encouraging, as research identifies coaching to be important for effective implementation and sustainment of EBPs for autism (Stahmer et al., 2015; Suhrheinrich, 2011; Azad et al., 2020).

Also consistent with previous research on high-poverty schools (García & Weiss, 2019), teachers reported receiving insufficient and unsatisfactory professional development opportunities. To minimize the burden on educators, it is important not only to provide *more* professional development but to provide high-quality learning opportunities founded in evidence-based principles (Stahmer et al., 2020). Darling-Hammond and colleagues (2017) identified characteristics of effective professional development: It (a) uses focused content; (b) incorporates active learning utilizing adult learning theory; (c) supports collaboration, typically in job-embedded contexts; (d) uses models and modeling of effective practice; (e) provides coaching and expert support; (f) offers opportunities for feedback and reflection; and (g) is of sustained duration. Research also recommends allowing teachers to attend professional development opportunities of their choice and partnering with experts and outside consultants to provide training (Azad et al., 2020).

Common themes regarding the training content that teachers want and need emerged during focus group discussions. Teachers reported UDL to be the highest-valued practice and most-requested training topic; however, most teachers also reported that they did not receive formal training in UDL. Addressing this discrepancy by training teachers to use UDL has positive implications for students with and without autism. UDL is associated with greater student engagement and improved social and academic outcomes for students with and without disabilities (Capp,

2017; Ok et al., 2017). Teaching teachers to implement UDL strategies could be beneficial for other students in the classroom who need additional support with behavioral, social, and/or academic skills, including those who are culturally and linguistically diverse (Stahmer et al., 2020) while also improving the quality of inclusion for autistic students. The authors suggest utilizing the resources provided by the Center for Applied Special Technology (see Table 2) to guide UDL training.

Teachers discussed the value of receiving training on PRT and social skills. To address these needs, educators could utilize the free available resources on classroom pivotal response teaching (CPRT) and the PRT module on Autism Focused Intervention Resources and Modules (AFIRM), an online resource of training modules and information on the EBPs for autism (Sam, 2015; see Tables 2 and 3). CPRT is a classroom-based adaptation of PRT developed collaboratively by researchers and teachers to meet the specific needs and demands that teachers face (Stahmer et al., 2012). Teachers in inclusive settings who have been trained to implement CPRT report high satisfaction, high feasibility, and high acceptability of the intervention in their classrooms (Suhrheinrich, Rieth et al., 2020). To address social skills, educators could refer to the curriculum for PEERS (see Table 2), an evidence-based social skills group for adolescents with autism (Laugeson et al., 2015). Utilizing the available resources on PEERS, such as research articles and training, informs teachers of what skills to focus on with their students and provides strategies to address those skills.

Many teachers in this study reported using EBPs for autism, perceived them to be effective, and desired more training on them. The use of visual supports and reinforcement and the lack of use of video modeling are consistent with previous research (Brock et al., 2014; Morin et al., 2020; Oliver-Kerrigan et al., 2021; Sulek et al., 2019a). The need for training on how to facilitate social skills is also consistent with prior research on teachers who do not work in high-poverty schools (Able et al., 2015). On the basis of our results and prior research, we recommend that coaching teachers use an EBP that specifically addresses social communication skills for students with autism. The student's educational team and caregiver(s) can select an EBP they deem appropriate for the student and feasible to implement. This could include visual supports, reinforcement, and/or peer-based intervention, as teachers had positive perceptions of these EBPs (Corkum et al., 2014; Wong et al., 2015).

Teachers indicated that preventing and responding to disruptive behavior was a topic area in which they needed more training, which is consistent with previous research on teachers who do not work in high-poverty schools (Lindsay et al., 2013). Teachers in high-poverty schools are more likely to spend time attending to misbehavior than providing positive feedback (Hirn et al., 2018), so specific training on addressing challenging behaviors could lead to positive outcomes and class-wide benefits. To streamline training and minimize teacher burden, trainers could select one EBP that is effective for both social communication and challenging behavior, such as visual supports and/or reinforcement, and coach teachers on how

to use that EBP to target each skill. Future research could examine teacher- and student-related outcomes of this training.

Teachers reported lack of time and financial resources as barriers to training, which is a consistent theme in the teacher training literature (Corkum et al., 2014; Suhrheinrich, Schetter et al., 2020), including within high-poverty schools, where teachers tend to have less time for receiving professional development compared to low-poverty schools (García & Weiss, 2019). This calls for a more efficient means of training teachers, such as remote coaching, which is an effective way to support EBP implementation and improve child outcomes (D'Agostino et al., 2020; Tomlinson et al., 2018). Remote or virtual coaching could extend training to historically underserved schools, such as those in geographically distant areas, which is significant, as more than half of participants in the current study worked in rural locations and multiple teachers stated that location and isolation were barriers to training. Accessible professional development opportunities could also include the use of AFIRM modules (Sam, 2015; see Tables 2 and 3). This free virtual resource has received positive evaluations from teachers and can be used for assessing knowledge of EBPs and teaching educators how to implement EBPs (Morin et al., 2020; Sam et al., 2020a). Future research could examine the effectiveness of utilizing remote or virtual coaching and/or AFIRM training on teacher implementation of EBPs and quality inclusive classroom practices.

In addition to addressing the barriers, it is important to work toward leveraging the facilitators of inclusion. Teachers reported that making accommodations for general education students in their classrooms often facilitated inclusion for students with autism because teachers became accustomed to modifying curriculum based on student needs. This emphasizes the importance of providing teachers with training on implementing UDL. This would equip teachers with the skills to develop and modify curriculum that supports all students and could help to reduce the achievement gap for diverse learners (Stahmer et al., 2020). Additionally, it might minimize the burden that teachers often report regarding the requirement to participate in multiple trainings and professional development tasks to illustrate how many of the EBPs for autism they are being trained to use are also effective for supporting other students.

Teachers frequently reported that consultation with colleagues facilitated successful inclusion. This is consistent with previous research in high-poverty schools showing that collaboration among colleagues contributes to increased student success, greater teacher retention, and lower levels of teacher stress and burnout (Bettini & Park, 2021; Bottiani et al., 2019; Darling-Hammond et al., 2017). This means that it may be particularly important to develop and sustain professional learning communities (PLCs) for educators working in these settings to access the collective knowledge of their colleagues. One example of a large-scale PLC is the California Autism Professional Training and Information Network (CAPTAIN), a statewide network of service providers and educators who work with individuals

with autism. Research supports the effectiveness of CAPTAIN in disseminating high-quality training and resources on autism to providers across California (Suhrheinrich et al., 2022). A PLC like this could be crucial for teachers in geographically distant schools with limited networks. PLCs address challenges with modifying the curriculum to accommodate student needs by giving teachers access to resources from colleagues. Future research should explore the use of PLCs to support teachers working in inclusive classrooms in high-poverty schools. This could include identifying and addressing barriers to establishing and sustaining PLCs in these settings.

Many teachers reported that having an instructional aide or paraprofessional to provide individual and classroom-wide support facilitated inclusion. Paraprofessionals delivering behavioral interventions to students in inclusive classroom settings can contribute to improved student outcomes (Walker et al., 2020), and this is also true in high-poverty schools (Alperin et al., 2020). However, research has also suggested that without proper training, paraprofessionals might engage in behaviors that inadvertently hinder student progress, such as hovering in close proximity to the student and/or overprompting (Feldman & Matos, 2013). Thus it is critical to provide training and support in the implementation strategies instructional aides need to support inclusion.

Limitations

This research has some inherent limitations. This was not a random sample, so it is likely that these teachers already had an interest in autism training and/or inclusion. The small sample size of 27 is another limitation, even though saturation was obtained across groups, and as such, data should be interpreted with caution. This sample was also predominantly White (95%), whereas the racial/ethnic distribution of California teachers at the time of the study was 61% White, 21% Hispanic, 6% Asian, and 4% African American (California Department of Education, 2019). This means that the current study is not representative of statewide data on teacher demographics and could be missing information on the experiences of key populations, such as the perspectives and training needs of educators who are culturally and/or linguistically diverse. Despite these limitations, this study offers meaningful insight into the perceptions, experiences, and needs of general education teachers and has implications for how to support inclusive education.

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Appendix

Vignette 1

David is a 5-year-old diagnosed with autism spectrum disorder who communicates his wants and needs through single-word utterances and pointing. His vocabulary consists of approximately 50 words, and he independently and spontaneously requests items and activities he wants. He repeats short verbal models and follows simple directions, such as "come here." David is very interested in dinosaurs

and can identify many dinosaur names when looking at dinosaur books. He also enjoys simple puzzles and coloring, especially when they involve dinosaurs. David has difficulty relating to others and infrequently makes eye contact with his peers and teachers. He rarely interacts with other children during play but will engage in parallel play beside peers. Transitions to new tasks or activities are difficult for David and often lead to disruptive behavior.

Vignette 2

Ben is an 8-year-old diagnosed with autism spectrum disorder. His verbal communication is detailed and varied. Ben often talks at length about topics of interest to him, such as his favorite video game, though he doesn't often initiate questions or comments to others. Ben has strong skills in mathematics and enjoys drawing detailed maps of his favorite cities. He sometimes exhibits frustration when he makes a mistake and when the schedule changes unexpectedly. Writing tasks are also challenging for Ben, and he often shouts out or tries to leave during these lessons.

Focus Group Interview Guide

1. What types of strategies or supports would you use for this student, or similar students, if they were in your classroom?

2. Would you need to adapt your current practices if this child were in your classroom? If so, how?

3. What barriers to including this child in your classroom would you anticipate?

4. What additional knowledge, training, or support would you need to include this child in your classroom? How would you obtain this knowledge, training, or support?