Lisa A. Ruble · John H. McGrew *Editors*

COMPASS and Innovative Education for Students with Autism

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ISBN 978-3-031-31394-3 ISBN 978-3-031-31395-0 (eBook)
https://doi.org/10.1007/978-3-031-31395-0

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

To Nancy Dalrymple whose mentoring and teaching inspired many who have become leaders and advocates for autistic persons and families.

To all the countless autistic children and adults and their caregivers who have contributed to our understanding of COMPASS over the years—thank you for sharing your lives with us.

To all the teachers who cared and gave extra of themselves to perfect programs for their students—thank you for your time and expertise.

To the administrators who believed in the importance of research enough to allow us to be in their schools and work with their teachers, parents, and students.

To the countless colleagues who have added their knowledge and experience to help make COMPASS work successfully—thank you for laying the foundation for greater understanding and outcomes.

Preface

COMPASS—the Collaborative Model for Promoting Competence and Success of Persons with Autism Spectrum Disorder—is an innovation that bundles a clinical practice with an implementation strategy for helping individuals with autism achieve optimal outcomes. The model represents an accumulation of more than 100 years of combined experience of the authors in collaboration with parents, teachers, administrators, and other personnel. Developed and refined since 1996, COMPASS is an excellent vehicle to systematically develop, implement, and monitor programs for autistic children, youth, and adults and has withstood the test of time. It remains one of the few experimentally tested consultation approaches associated with reliably positive child and youth progress. COMPASS is based on educational research that shows sustainable changes in teacher behavior and student interaction occur when teachers are supported in their own instructional setting. The model described in this book was adapted originally from the work of August, Anderson, and Bloomquist and published in 1992 as the Minnesota Competence Enhancement Program. From 1978 until 1992, with both state and federal funding and under the leadership of one of the original authors, (Nancy Dalrymple) at the Indiana University (Bloomington) University Affiliated Program, the model was utilized within residential programs for children and youth with autism and subsequently as part of a state-wide training initiative. Over these years, the model was changed to include the concept of balancing risk factors with protective factors to address challenges and encourage competency, in response to extensive data gathered with support from NIH/NIMH funding. That concept was a key to the publication of "An Alternative View of Outcome" (Ruble & Dalrymple, 1996), which advocated for new and different ways to measure outcomes by focusing on the development of competence and quality of life as central outcomes and linking these to accommodations and social and family support networks. This work helped to reaffirm the evolving model's emphasis on collaboration and building support rather than emphasizing deficits.

Extensive field testing has continued from 1992 to the present time. In 1996, the model was used as the basis of the Autism Technical Assistance Manual for Kentucky Schools, which Lisa and Nancy authored. School systems throughout Kentucky had the opportunity to be trained with the manual, and the Kentucky

Western Education Cooperative took the lead in incorporating the model in extensive training of all their school systems over several years. This training was always specific to individual students with autism. The model was used for planning purposes, addressing specific behavioral problems, and helping with transitions. Then, in 1998, the model served as the consultation framework for TRIAD at Vanderbilt University in the state of Tennessee and was renamed the Collaborative Model for Promoting Competence and Success of Persons with Autism Spectrum Disorder (COMPASS). Since then, COMPASS has been evaluated empirically with several studies, resulting in improvements based on feedback, innovations, and new directions. We are excited to continue developing knowledge, addressing the quality service gap, and supporting the people who have the highest investment in autistic learners.

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Funding Agency

We thank our sponsor, National Institutes of Health, National Institute of Mental Health grant numbers R34MH073071, 1RC1MH089760, R34 MH104208, 1R34MH111783, for funding support. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Mental Health or the National Institutes of Health.

Acknowledgements

We wish to express our gratitude to the caregivers who work tirelessly to gather the supports for their children and their success and to school professionals who contributed their valuable time for helping us learn how to best train consultants in COMPASS.

We also want to thank JP Lebangood for editorial support and Dr. Teri Krakovich for helpful feedback on the book.

Introduction[1]

COMPASS is the first consultation model that bundles an intervention practice with an effective implementation strategy. Verified by randomized controlled experiments and by independent evaluators, COMPASS improves IEPs and outcomes of students with autism across the age span. Since 2012 when we published our first manual on COMPASS, our research has continued with new enhancements, increased applicability and feasibility, and demonstrated replications. We have also dug more deeply into the underlying factors that explain the success of COMPASS. To date, our team has published more than 70 publications and presentations in the United States and internationally on what we have learned.

Unique to COMPASS is shared and authentic decision-making from parents and caregivers. Obtaining information on family priorities and preferences and using this information for student-centered goal selection and decision-making articulates a key function of COMPASS—to provide a process that places caregivers in the driver's seat. Too many times caregivers attend IEP meetings where goals are decided in advance. Rather than decision-makers, this situation places caregivers as consenters. We turn this situation around with COMPASS so that those with the most interaction, engagement, and responsibility for the child or youth are not merely passengers going along for the ride, but the drivers navigating the path with a tested intervention. COMPASS provides the destination with caregivers and teachers working jointly on the path toward positive outcomes.

Everyone agrees that informed teachers, service providers, and caregivers need support and access to research-based interventions that can be individualized for each student with autism. One means to this end are trained consultants, who can provide the "glue" to enable everyone to assemble and work as a team. However, these people are in short supply. Our original manual was developed to train consultants in assisting parents, teachers, and other service providers in working together to create positive, meaningful, effective, and personalized programs for children

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with autism. COMPASS provides the process by which a personalized approach to research-supported interventions can be used to improve the lives of students with autism. It requires consultants who are competent about autism and able to provide effective consultation to caregivers and teachers. The goal of our new manual is to describe our latest research findings, including new innovations, replications, and a validated training package on COMPASS that successfully transfers skills to autism consultants.

Validated in Three Randomized Controlled Studies

Since the first version of our book on the model that described two randomized trials of COMPASS for young children, we have completed two additional trials on COMPASS. The first was a new randomized study with a comparison group using an adaptation of COMPASS for high school students (see Chap. 5). The second was a pre-post study of child outcomes when COMPASS was implemented by school consultants who completed our training package (see Chap. 2). Our findings have replicated our first study on the strong effects of COMPASS on child outcomes.

Validated Training Package

Our last pre-posttest study that tested the success of a training package on COMPASS for community/school autism trainers and consultants was critical because COMPASS can be viewed as a complex intervention. COMPASS is a multi-level intervention, meaning that a consultant supports changes in teacher behavior that then impact improvements in student learning. Therefore, evidence was needed that non-researchers could successfully implement COMPASS. Research on the effects of our training package confirms that consultants naïve to COMPASS can implement it well after training (see Chap. 2). Further evidence of ability to teach school consultants to implement COMPASS with fidelity using the training package comes from a replication study of COMPASS conducted by an independent team in Australia with similar and positive child outcomes (see Chap. 4).

Integrates Assessment, Intervention Planning, Goal Setting, and Progress Monitoring

COMPASS is an integrated assessment and intervention package that is bundled with an implementation strategy (coaching) and comes from a holistic assessment of the child or youth that helps teachers and caregivers develop measurable learning

objectives and evidence-based teaching plans. We refer to teachers in the broadest sense and include any service provider responsible for teaching skills. Consistent with response to intervention, COMPASS is based on systematic use of progress monitoring and data-based decision making. It is a tier-three intervention support that is targeted at the individual student. Curriculum-based measurement as articulated in the IEP is used to monitor progress using goal attainment scaling. Ongoing data-based decision-making occurs by way of coaching sessions after the initial COMPASS consultation.

COMPASS While Unique Is Generalizable to All Settings Across the Age Span

COMPASS is unique from other consultation frameworks. *COMPASS has a focus on competency development and understanding of persons in context, that is not just schools, but also private clinics, outpatient service agencies, mental health clinics, and adult service agencies.* It underscores the fact that competencies and behaviors need to be placed in the current living experience of the individual, across school, home, and community settings. It aims for measurable goals with personalized outcomes, and it reflects an understanding that competencies look different across the lifespan. It is a highly individualized approach, with an emphasis on service provider and caregiver input and support. We believe the model is generalizable to other community-based service providers such as those provided through Medicaid waiver services including group home agencies and adult day providers. COMPASS is neurodiversity affirming - it has relevance for young adults in college and the workplace as a means to promote self-determination and self-advocacy.

Competency Development

Competency development is based on the balance between strengths and weaknesses and when included and supported in interventions, results in key quality of life outcomes. It is based on partnerships and emphasizes identifying and building family, community, and environmental supports to promote positive outcomes. Too often standard program plans are designed to address weaknesses (isolated deficits that result from autism), rather than the whole person. Assessing the needs of the individual—along with stressors, challenges, and resources, including strengths and interests—is essential when taking into account the entire person. It is vital to focus on increasing protective factors while understanding vulnerabilities and ecological stressors.

Measurable Goals and Outcomes

By focusing on the process for identifying pivotal skills necessary for enhanced quality of life, measurable goals and outcomes are vital. COMPASS provides answers to such questions as:

What will be different if we are successful?
How will we know it and measure it?

Details about how to teach the goal and objective are generated from a shared understanding of the balance between risk and protective factors. The factors that create the balance are the ingredients necessary for achieving competence and are unique for each individual. As a framework, this model also helps train staff to understand and support the person more effectively and extends the person-centered planning approach to a research-supported intervention with documented effectiveness.

Evolving Understanding of Competence and Reassessment

Another focus of the model is the creation of a shared understanding that competence looks different across the lifespan of the individual. Challenges are constantly requiring new sets of skills to build competence—for the person with autism as well as their families and caregivers. Autistic people must have support from individuals who understand them, their personal and environmental challenges, and their personal resources in order to know how and what environmental resources will enhance learning. Too often autistic persons are viewed as the problem because those who are trying to teach and support them do not understand their uniqueness or how their competencies may change over time, just as the environmental supports and challenges change over time for all of us.

Individualized Approach

> That was actually very helpful to me, because I don't really take the time to analyze each one of my students that much. I really don't, there isn't enough time… but to really look helped me to see what really affected Ethan, especially in the classroom.
>
> I realized that there can be so much more to planning an IEP than what we have done in the past. What we accomplished through this process was so much better than what we would have had if we had not gone through this.
>
> I have realized that some skills need to be broken down so you can truly get to the root of a problem. I have found that working on very specific skills have made a tremendous impact on the "social life" of my student. I loved how his parents and I collaborated together and came to an agreement on items that he needed at school as well as at home.

These statements were made by teachers who participated in COMPASS. *A lack of time and a focus on numerous classroom and student priorities often act as environmental risk factors for generating personalized teaching objectives and strategies. That is, the very system that is tasked with helping the person with autism may unintentionally become part of the problem, placing barriers in the way of learning*. COMPASS sets the stage and provides the foundation for ensuring that an individualized approach to program development is taken.

We have found it is vital to develop program plans that identify teaching strategies designed to address the individualized learning needs of each student with autism. Training approaches such as teacher workshops, in-services, and other types of professional development are important for learning about research-supported practices, but they are also insufficient. The ability to take information from the context of a workshop and apply it effectively to an individual student is often limited requiring implementation support (coaching). Because there is not a single treatment approach that works for all students with autism, individualized assessment and decision-making are still necessary for appropriate program planning. A clear strength of consulting is its ability to help to individualize the educational program and provide the implementation support that is needed.

As more autistic students are identified and included in schools and communities, the need for professionals and support personnel who are strongly grounded in knowledge and experience of autism is essential. Over the years, we have learned that the most important impact we can have in consulting with caregivers and teachers is empowerment. We need to teach what we know—to give it away. A team that is empowered is one that has accurate information to make decisions and evaluate measurable outcomes after we leave. Here are some direct quotes from teachers:

- I have high expectations for my kiddos, but in this case, he surprised me. I had underestimated his ability when it came to recognizing emotions as well as his ability to read words related to the activities we did with emotions apps and exercises. This experience has helped to ensure that he will be challenged more in the coming year.
- I enjoyed the coaching sessions and the opportunity to see the students perform tasks in their videos and reflect on their performance, as well as my teaching strategies.
- I learned more about setting up and directly teaching goals, monitoring progress and reflecting on teaching strategies and factors for success or lack thereof through watching videos taken during skill practices. Direct meta-cognition was taking place! It has carried over to my work with other students.
- I feel like it kept me on track charting his progress and moving him forward.
- I feel so much more successful as a teacher. Seeing his progress makes me proud to be a teacher.
- I feel that I have learned many strategies to try with my students. I have come to feel comfortable with some trial and error when it comes to dealing with the wide ranges of abilities and characteristics associated with teaching children with autism. I have also become more comfortable with keeping data, analyzing it, and using it to adjust instruction.
- I have been more deliberate in my teaching of specific goals. I have been encouraged to 'think out of the box' when looking for strategies.
- It made me more aware of the importance of parental involvement. This gave me confidence. There were great ideas on generating new strategies.

Consultation and Coaching: Two Different Roles, One Person

Consultation and coaching are terms often used interchangeably. But we emphasize coaching as the subsequent and necessary implementation strategy that helps put into practice the teaching plans developed during the initial COMPASS consultation. Coaching occurs with a focus on the context of the classroom and involves all aspects of knowledge and skill transfer to the teacher. Further, coaching is bidirectional; the coach is influenced by the teacher and by the child. If the teacher has implemented the teaching plan as written, but with poor fidelity, the coach and teacher together generate solutions to overcome barriers to implementation. *In other words, the coach and teacher are partners who are engaged in a shared activity with a common goal.* Consultation serves to set the goals and plan the strategies (intervention strategy), and coaching (implementation strategy) helps put the plans into practice. We have demonstrated that repeated coaching opportunities are necessary for better child outcomes (see Chap. 7). When teachers receive multiple opportunities for performance feedback and student progress monitoring, their teaching practices improve. Most importantly, when teaching quality improves, so does student engagement.

Supporting Parents, Caregivers, and Families

The primary environmental supports for individuals with autism are their caregivers and families. They are the lifelong advocates of the person. Teachers come and go in the lives of individuals with autism. Caregivers are the ones who are truly positioned to assist others in understanding the person and advocating for services and supports. For many autistic individuals, self-advocacy is a goal with increased self-determination into adulthood. But for others, caregivers may remain the primary advocate. COMPASS helps provide self-advocates and families the opportunity to be centrally involved in planning the educational program and a process from which information can be shared, updated, and transferred to all professionals involved in the life of the individual. Here are some direct quotes from families:

- It has helped me see more of what he's capable of and allows me to see his growth. It also helps me to learn different ways with helping him learn.
- I felt more connected to his IEP, having it reviewed at a different time then the mandatory time.
- Having extra eyes and supports in place makes me feel more confident in her education. I know that what one person may not see, another may. As a team we have been able to work to encourage her through the anxieties and challenges of her 3rd grade year.
- I feel I am able to better understand my child's educational goals at school and have gotten some useful information that I can use at home.
- His teachers have communicated more with me about how he is doing at school.
- I have learned several new methods for handling situations that may arise and new teaching methods to use at home.

- It has helped me to be able to focus on one task at a time instead of more at once.
- It has shown me how to teach my son.
- I have learned how to help my son with turn taking and answering "want" questions.

Who Should Use This Manual

This manual is designed to be used by autism specialists, early intervention and school consultants, community-based consultants, teachers, and school personnel who work with teachers or other service providers of preschool, elementary, middle, and high school age students with autism. Other professionals, including clinicians or behavior specialists in clinics or in other non-school based settings and other community service providers when planning services as well as families, will find the manual useful. The COMPASS forms (COMPASS Profile) are helpful in sharing information about the person with others—during the start of a new program, transition to a new teacher, or introduction to a new teacher. Although the framework applies to persons with autism across the age span, the specific protocol and forms in this manual are specialized to high school, transition age youth, and adults. Information on young children was the focus of our first book. It is assumed that an effective consultant must possess both the content knowledge of autism and the process knowledge and skills to apply interventions specialized for individuals with autism in collaboration with a team. It also requires training and experience in consultation and coaching. To use the manual effectively, it is assumed that certain consultation competencies and skills are in place (see Chap. 2).

How to Use This Manual

The primary aim of this manual is to describe our latest innovations with COMPASS. This manual does not replace our original book. It is crucial that the consultant adequately understands each step in the COMPASS model before moving on as described in the original manual. This may mean the consultant will need to stop and acquire key competencies before proceeding to the next step or chapter.

Identify First and Person First Language

In this manual we will switch between person first and identity first language due to the different preferences of self-advocates and families.

Overview of This Manual

The book is separated by three related sections. The first section covers implementation science for adaptation, dissemination, and organizational aspects. The second section discusses replications, adaptations, and new findings with COMPASS. The final section uncovers new directions for COMPASS within the goals of implementation science, enhanced applicability and accessibility, and improved school outcomes.

Chapter 1 provides an overview of the Evidence-Based Practice in Psychology (EBPP) framework and its relevance for COMPASS and consequences when there is sole focus on the evidence-based practice while ignoring child, family, and teacher factors

Chapter 2 explains our training package and what was learned with community autism specialists/consultants, including how much feedback was necessary for adequate implementation of COMPASS and what areas were challenging for consultants. We also review important implications for preservice and professional development.

Chapter 3 extends our previous work on young children and IEP quality to transition age youth. The chapter outlines a method for evaluating the quality of transition IEPs, the areas of strength observed in IEPs, and the areas in need of improvement.

Chapter 4 presents findings from an independent replication of COMPASS conducted with a team of educational researchers and school providers in Australia. The specific aspects that teachers and caregivers reported as unique and helpful are reviewed, as well as the activities that they would like to sustain. A case study of the implementation of COMPASS is also provided.

Chapter 5 summarizes the results of a randomized trial of COMPASS adapted for transition youth. The chapter includes full descriptions of the modifications made based on COMPASS for young children followed by a detailed case study.

Chapter 6 provides an extension of COMPASS as a behavior management/training support intervention called COMPASS for Hope or C-HOPE for caregivers of children between the ages of 3 and 12 with autism. C-HOPE was originally developed as an outpatient program in a medical setting. The chapter concludes with a case study example.

Chapter 7 presents results from a pre-post extension of COMPASS when coaching was provided using different doses or number of coaching sessions and approaches (face-to-face/videoconferencing coaching or electronic feedback with no coaching) and what impact these had on fidelity of implementation and student outcomes.

Chapter 8 presents a new extension of COMPASS for middle school students with autism and mental health needs. In this innovation, COMPASS is expanded to include a parent psychoeducational intervention for more holistic support.

Chapter 9 addresses a need for interventions to improve postsecondary outcomes of autistic students. COMPASS across settings (CAST) is described as a

comprehensive intervention that includes the same coaching support for caregivers, the autistic student, and the pre-employment specialist that is provided to teachers.

Chapter 10 introduces a novel concept of COMPASS to increase its reach in public schools that are underserved—most notably rural schools. In this chapter, we discuss an innovation of training teachers to implement COMPASS, rather than consultants, with peer coaching support. This approach addresses the shortage or lack of consultants in rural or low-income areas.

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Part I
Implementation Science for Adaptation and Dissemination

Chapter 1
Innovations in Evidence-Based Practices, Evidence-Based Principles, and Common Elements with COMPASS

John H. McGrew and Lisa A. Ruble

Overview This chapter distinguishes treatment planning using evidence-based practices (EBP) from COMPASS planning based on an evidence-based practice in psychology (EBPP) framework.

COMPASS is a second-generation process for achieving high-quality goals and selecting effective interventions built on the evidence-based practice in psychology framework (EBPP; McGrew et al., 2016). This framework rejects the notion of "one-size-fits-all" evidence-based practices (EBPs), instead embracing the final report of the American Psychological Association (APA) which created the evidence-based practices in Psychology as the standard/approved approach. EBPP suggests that intervention selection is the result of a tripartite solution set that, when applied to the educational field, requires decision-makers to consider (a) the teacher/classroom, (b) the family/student, and (c) the EBP with shared decision-making and co-creation of goals and strategies to meet the goals. We provide a review of the framework and rationale for its need.

We have observed over and over that autism trainers focus on professional development of best practice interventions that are commonly restricted to discussion of EBPs. While helpful and necessary, unfortunately this approach is not enough. Knowledge and ability to deliver EBPs is insufficient preparation to provide

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_1

effective special education. It does not necessarily provide the educational background to assess and identify the multifaceted problems and resources available, the creation of personalized teaching plans that incorporate these issues, and the accurate application of the steps included in an EBPP compatible intervention like COMPASS to produce a similar EBPP intervention. We say unfortunately, because it would be a much easier and straightforward task to teach EBPs alone. However, a narrow focus on the EBP misses the critical shared decision-making for ensuring the right (best) goal is chosen for the student and that the strategies to teach the student are clear, measurable, and personalized. *When personalizing intervention plans to students, it is necessary to adapt EBPs to the child's strengths, preferences, and challenges.* We described in our paper "Matching Autism Interventions to Goals with Planned Adaptations Using COMPASS" (Ruble et al., 2022) that at least five different EBPs are used on average in COMPASS intervention plans. And each of the EBPs requires adaptation to the child and their context. We believe that this careful approach for selecting and adapting EBPs in COMPASS helps explain the positive outcomes. This chapter defines and outlines the relationship between EBPs, evidence-based principles, and common elements and offers a measurement tool for assessment of common elements that support best practice intervention plans.

Overview of Evidence-Based Practice in Psychology

Evidence-based practice is the current accepted standard for clinical and intervention practice across a variety of fields (e.g., medicine, nursing, dentistry, psychology) and treated conditions (Baker et al., 2008; Chambless & Ollendick, 2001; Nathan & Gorman, 2007), including autism (Mesibov & Shea, 2011; Reichow et al., 2011). Evidence-based practice is defined as an intervention for which there is strong research demonstrating effectiveness in improving client outcomes (Chambless & Ollendick, 2001). Within autism, for example, reviews are available that identify interventions that have been tested empirically and that meet at least one of the evidentiary standards for an EBP (e.g., at least two randomized controlled trials (RCTs)), although the evidence is still relatively weak for many interventions, concentrated in interventions for a limited portion of those with autism (higher functioning children and adolescents) (National Autism Center, 2009; Wong et al., 2015; Steinbrenner et al., 2020), and implemented by researchers rather than community practitioners such as teachers.

Even though there is general acceptance of the need for and importance of EBPs, there also is resistance to the EBP movement (Bohart & Tallman, 2010; Chambless & Ollendick, 2001; McGrew et al., 2016; Miles & Loughlin, 2011; Tannenbaum, 2005). This resistance springs in part from concerns about the primacy of EBPs as the only model for clinical practice. Specific criticisms cover a range of methodological, conceptual, and practical grounds (e.g., unrepresentative client samples and settings, narrow definitions of effectiveness, over-reliance on RCT designs) (see Chambless & Ollendick, 2001; Westen et al., 2004 for reviews). Three particularly

salient critiques include (1) definitional confusion about what constitutes an EBP, (2) concerns about the overemphasis on clients with pure single diagnoses (autism only no alterations for comorbidities, such as ID or ADHD) with the result that many EBPs do not apply to clients typically seen in therapy, e.g., comorbid clients or those who present with subclinical symptoms, and (3) concerns that EBPs overemphasize differences between treatments and ignore equally strong evidence for factors common across treatments.

With respect to the first critique of what constitutes an EBP, one problem is that the criteria for defining EBPs differ across investigators (Mesibov & Shea, 2011; Nathan & Gorman, 2007; Roth & Fonagy, 2005; Tannenbaum, 2005; Thyer & Pignotti, 2011; Westen et al., 2004). According to the criteria from the original APA Division 12 task force on empirically validated treatments, a minimum of two RCTs from at least two separate research groups (Chambless & Hollon, 1998) are required; however, criteria for an EBP as outlined by Roth and Fonagy (2005) in their review for the British Health Services require a controlled replicated demonstration of effectiveness or a single high-quality RCT. Similarly, two recent reviews of autism interventions used very different criteria for EBP. The National Professional Development Center on ASD (Steinbrenner et al., 2020; Wong et al., 2015) listed three different criteria for an EBP (e.g., at least two high-quality experimental/quasi-experimental studies conducted by at least two research groups, at least five high-quality single-case design (SCD) studies conducted by at least three different research groups), whereas the National Standards Project (National Autism Center, 2009) classified treatments as evidence-based from reviewer ratings of three or higher on a Scientific Merit Rating Scale encompassing five weighted domains of methodological quality.

With respect to the second critique concerning the limited applicability of EBPs across the range of individuals with autism with comorbidities, critics note that psychological practice is not diagnosis-focused (the standard for EBPs) but individual-focused and is oversimplified by an approach that presumes a simple matching from diagnosis to a list of acceptable interventions for each diagnosis (APA Task Force, 2006; Miles & Loughlin, 2011; Thyer & Pignotti, 2011). That is, intervening with an individual client requires an ongoing decision-making process that must consider the interplay among three equally critical areas: EBPs, patient/client factors, and clinical expertise (APA Task Force, 2006). Unfortunately, most literature on EBPs in autism has focused on the first area, research evidence.

The last critique speaks to the tendency of the EBP approach to emphasize differences rather than similarities between empirically validated treatments. An alternative approach is to identify factors common across treatments that likely account for most of the variance (explanation) underlying treatment success (Bohart & Tallman, 2010; Lambert, 2013; Kazdin, 2008). That is, when EBPs are compared against viable alternate treatments or each other, rather than against placebo or "services as usual," typically no difference is found (Wampold, 2006). In contrast to these minimal comparative treatment effects, there is a vast literature on the large impact of therapist (e.g., therapist sense of well-being), client (e.g., IQ, level of functioning, self-efficacy), and relationship (e.g., therapeutic alliance) variables on

treatment outcome, beyond the specific effects of any particular treatment (see Bohart & Tallman, 2010; Lambert, 2013).

Based in part on these concerns about EBPs, the American Psychological Association convened a task force whose final report proposed the new term, evidence-based practice in psychology (EBPP: APA Task Force, 2006). The purpose of the task force was to craft an approach to practice that recognized and valued the rigorous empirical approach for identifying what works that characterizes EBPs, while also attending to the practical realities of everyday clinical practice with clients with multiple comorbidities and unique characteristics that may not align with the use of a particular single EBP. The result was EBPP (see Fig. 1.1), which is defined as the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences.

Similar issues plague practice and research in autism. Much remains unknown about the integration of science and practice and the effective delivery of evidence-based treatments for persons with autism in community settings (Office of Autism Research/Interagency Autism Coordinating Committee [OAR/IACC], 2012). Moreover, most of the available treatment research has been limited to examinations of the efficacy of a focused intervention on a specific outcome. There has been little to no attention on the practical issues facing clinicians or teachers when attempting to implement treatments in the real world, such as the influence of client, family, or therapist characteristics on clinical decision-making and treatment outcomes (Mesibov & Shea, 2011).

Fig. 1.1 EBPP Framework

The EBPP approach is now gaining acceptance. However, although the EBPP approach successfully addresses many of the concerns of clinicians while also integrating the lessons of science, its accurate application highlights several new areas of concern. Two critical areas of concern are the paucity of research on setting and client factors that can help inform an evidence-based decision and how best to make a good clinical decision (McGrew et al., 2016). This latter concern is made more challenging given the vast literature on the superiority of actuarial over clinical decision-making (e.g., Dawes et al., 1989; Grove et al., 2000). In this context, it is our belief that COMPASS provides a model for clinical decision-making within EBPP. Consultation is ideal for bridging the research-to-practice gap (Ruble et al., 2012; Sheridan & Kratochwill, 2007). That is, COMPASS, as a consultation model, explicitly ties EBPs to EBPP. COMPASS bundles a clinical practice with an implementation strategy that works. Specifically, COMPASS is a process-based framework that provides an approach for the clinical decision-making needed to integrate the information from all three overlapping domains of the EBPP model (see Fig. 1.1), while also systematically gathering the information within each domain—the setting/ecological factors, the family/child with ASD factors, and the teacher/clinician factors that need to be taken into account, all within a coaching framework for effective implementation.

Current Status of EBP and EBPP in Autism

Claims of autism treatment efficacy and purported cures arguably have caused more controversy compared to any other disorder because the large majority of treatment research has not been tested going through the ladders of evidence (see Chap. 2 for discussion of the ladders of evidence). Unlike medical disorders that have a recognized biological source, such as diabetes, where there is an identified underlying causal mechanism that can be objectively measured with medical tests, there is no such understanding of autism. The lack of a biological marker makes autism vulnerable to claims not supported by research (Offit, 2008). But even when we do have evidence that an intervention, biological or psychosocial, is helpful, it is necessary to identify why a particular approach works. When we understand the underlying mechanisms of change to explain why something works, then we can further our research to help identify those variables that affect change and more importantly, how we can enhance the effects and make them widely available. Additionally, change mechanisms may have an impact beyond a particular intervention, such as COMPASS, and underlie interventions generally. The identification of such cross-cutting principles can have implications for the larger therapy literature (e.g., therapist alliance). We will revisit the topic of change mechanisms or active ingredients in Chaps. 3, 5, and 7. Chapter 3 discusses the importance of COMPASS for improving individualized education program (IEP) quality, as a mechanism of change, and what impact this has on student outcomes. Chapter 5 reviews our research on COMPASS when adapted and applied to high school students transitioning from

school and the aspects of COMPASS that improved and were associated with IEP success. Chapter 7 discusses the importance of coaching, an implementation strategy that is based on research-supported practices of performance feedback and progress monitoring.

Although autism treatments are abundant, very few have been tested using strong experimental design (Steinbrenner et al., 2020; Wong et al., 2015) or have been examined for potential mechanisms of action. *In fact, according to Steinbrenner, only 14% (139) of studies represented randomized control trials of interventions targeting autism!* The reliance on single-case study designs vs. group designs for testing autism interventions was perhaps more understandable when it was considered a rare disorder, but current estimates suggest prevalence rates equal to or higher than schizophrenia or bipolar disorder, which almost always utilize group designs.

Despite the need for more rigorous testing in autism research, researchers have reached consensus on key underlying elements important for effective learning common across different treatment models. To obtain this information, the National Research Council (Lord & McGee, 2001) convened experts in autism interventions to summarize the critical ingredients of effective programs. The committee identified six features that were common across all programs. In addition to these central features, the committee also identified areas of instruction that should be included in a program. These areas are listed in Figs. 1.2 and 1.3. Although dated, these best practice recommendations have withstood the test of time.

Fig. 1.2 Critical features in effective programs

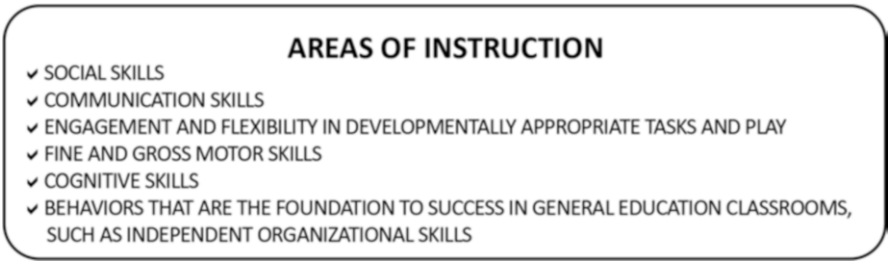

Fig. 1.3 Areas of instruction

While these features represent our best current "guesses" about what is critical for autism intervention, we incorporated these elements within COMPASS. Moreover, through an ongoing series of rigorous study, we continue to strive to identify empirically those factors that explain COMPASS intervention and implementation success.

The following chapters will dig more deeply into what has been learned about the dissemination (training) and the replication of COMPASS; the adaptation of COMPASS and a new measurement tool for transition IEP quality for high school students; COMPASS for Hope (C-HOPE) for addressing caregiver concerns with behavior; and outcomes of face-to-face, telecoaching, and electronic feedback of COMPASS coaching. We conclude the book with new directions for implementation science with COMPASS and suggestions for achieving better school-based outcomes. We describe COMPASS for middle school students with autism and mental health concerns; COMPASS Across Settings (CAST) for wrap-around educational services to improve transition outcomes; and applications of COMPASS using peer-to-peer teacher support in low resource and rural schools.

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Chapter 2
COMPASS Dissemination: The Development of a COMPASS Training Package for Community-Based ASD Consultants

Lindsey Ogle and Lisa A. Ruble

Overview This chapter provides an overview of the process of developing our training package for consultant trainees in COMPASS and outlines the current version of our training package, including forms for providing feedback to consultant trainee quality assessment.

Our work on COMPASS has spanned more than 20 years. During this time, we have accumulated a great deal of information with support from grant funding from NIMH that allowed us to study the effectiveness of COMPASS, develop an intervention manual that provide the details for delivering COMPASS (Ruble et al., 2012), and generate new approaches for measuring the impact of COMPASS on caregivers, teachers, and children and youth. We also applied the basic framework of COMPASS to new interventions such as C-HOPE (Chap. 6) with a focus on caregiver training and support for reducing child behavior and teaching new skills, and we have collaborated with colleagues from around the world—Australia, Italy, and Brazil on translations and replications of COMPASS. Of these activities, however, our most impactful work concerns dissemination. Unless we can show that we can disseminate COMPASS effectively and efficiently to community and school-based autism trainers and consultants, these past two decades of work will have little to no impact on the lives of families and children.

Following the Ladder of Evidence model (see Fig. 2.1; Leff et al., 2003), the development and eventual dissemination of an EBP such as COMPASS progresses through a series of six hierarchical steps. At the first step, developers discover a promising new approach for some clinical disorder or problem. At this stage, case studies, clinical experience, and program evaluation all help to provide the

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_2

The evidence ladder		Intervention science activity
1. Program of interest	←	Post recognition quality monitoring
2. Emerging	←	Disseminability studies
3. Conditionally effective	←	Multiple & multisite replication studies
4. Effective	←	Initial evaluation studies
5. Disseminable	←	Pilot studies: manuals, fidelity & outcome measures
6. Reliable intervention	←	Discovering & describing interesting Programs: basic research, clinical judgment

Fig. 2.1 Ladder of Evidence model. (Reprinted by permission from Springer Nature, Overview of Evidence Based Practices in Psychology and Implementation Science by Lisa A Ruble, John H. McGrew, ©2015)

developers with the initial set of ingredients and critical elements that comprise the first iteration of the intervention. The next step comprises the pilot studies, where the initial iteration is first formally tested as a complete package. During this step, manuals and fidelity scales begin to be developed. The third step includes the initial evaluation studies, usually with RCT designs, in which the intervention is first shown to be effective in a rigorous clinical trial. At this point, intervention is an emerging or promising practice. The fourth step examines further effectiveness studies that are larger and multi-site. The fifth (dissemination) and sixth stages (reliable intervention) comprise what is often referred to as implementation science. Once an EBP has been identified, there is still a need to ensure that it is disseminated and implemented accurately. This requires the development of training protocols and a suite of fidelity and outcome measures to guide and track faithful implementation of the intervention. Overall, the Ladder of Evidence model provides a good overview of our progress with COMPASS over these past 20 years as COMPASS has climbed each step of the ladder.

As mentioned, the last two areas within the Ladder of Evidence concern implementation science—the dissemination, delivery, and use of COMPASS by community practitioners. Implementation science is a growing area of research in autism with the goal of reducing the time it takes to move EBPs into everyday practice and community settings. In fact, it takes about 17 years for only 14% of EBPs to be used in the community. In other word, just because an intervention has successfully met each of the steps (3–6) in the Ladder of Evidence does not mean that the new EBP will be adopted, used, sustained, or delivered well in the real world. Many factors impact whether a new EBP is selected for use in the community and achieves the desired impact as tested in more controlled settings. COMPASS has risen from the evidence ladder beginning as a program of interest, moving to emerging support with initial and now multiple studies, including a replication study from an

independent research team in Australia (Chap. 4). The studies to date show the success of COMPASS in three randomized controlled trials (RCTs; Ruble et al., 2010, 2013, 2018) for students with autism across preschool and high school ages. But all previous RCTs were implemented by the developers of COMPASS. In other words, while classroom teachers received the COMPASS consultation and were responsible for implementing the intervention plans, the researchers acted as the consultants.

To achieve the highest steps on the Ladder of Evidence, we turn to implementation science as a guide. Two frameworks informed our research program, and both build on the Ladder of Evidence and provide further explication of particular steps in the ladder. The first by Dunst and Trivette (see Fig. 2.2; 2012) expands on steps 1 and 2 of the Ladder of Evidence. In this framework they make a helpful differentiation between implementation strategies (coaching) and the intervention strategy (COMPASS goal setting and intervention planning). As originally envisioned by Dunst and Trivette, implementation strategies represent those practices used to support the accurate implementation of an EBP (e.g., training, fidelity monitoring, outcomes monitoring, etc.). That is, the implementer (in our case consultant) does not intervene directly with the intended clients or students but refers to those strategies that support the intervention implementation, and thus any impact on client or student outcomes is indirect.

This is a very helpful framework for understanding a consultation model, such as COMPASS. In this framework, the implementation practice refers to the methods used by consultants, coaches, and trainers to teach the intervention practice or EBP to the teacher, clinician, parent, or service provider that will result in improved child or client outcomes. That is, the implementation practice is what the consultant does with the teacher and the intervention practice is what the teacher does with the child. In our work, in other words, the link between COMPASS (what the consultant does with the teacher) and child outcomes is the intervention practice (what the teacher does as a result of COMPASS with the student).

Each of the three areas in Fig. 2.2 represent interdependent activities that are both distinct and linked to each other. In other words, the quality of the implementation practice (COMPASS consultant fidelity) should be associated with the quality of the intervention practice (teacher fidelity such as adherence to the intervention plans), which subsequently is associated with the effectiveness of the practice

Fig. 2.2 Dunst and Trivette model. (Reprinted by permission from Springer Nature, Overview of Evidence Based Practices in Psychology and Implementation Science by Lisa A Ruble, John H. McGrew, ©2015)

outcomes (child goal attainment). We have evidence of this relationship. In a study by Wong et al. (2018), the impact of COMPASS on child outcomes was explained by teacher behavior (teacher engagement during instruction with the student) and student behavior (student engagement with the teacher during teaching). Thus, as hypothesized, COMPASS impacts child outcomes indirectly, through improved teaching quality and child engagement.

The second framework is our integrated model and includes both the features of EBPP (Chap. 1) and the Dunst and Trivette (2012) framework, while also aligning with steps 2 through 6 of the Ladder of Evidence (see Fig. 2.3). The EBPP factors are represented by the internal and external factors described under consultant, teacher, and child behavior. The Dunst and Trivette framework is represented by the hashed lines of the quality elements associated with the implementation and intervention practice variables. As shown, there are three primary players (represented by the three central blocks) that impact COMPASS outcomes—the consultant, the teacher, and the student with autism. The outputs of each central block are the specific behaviors of the consultant (e.g., process skills), the teacher (e.g., adherence to teaching plans), and the student with autism (e.g., goal achievement).

Factors that can impact the outputs or behaviors of each actor are modeled as internal and external factors. These factors serve either to support or hinder the individual in performing their specific tasks within COMPASS. Moreover, external and internal factors can refer either to general factors or those specific to COMPASS. For example, for the consultant, external factors include training in consultation practices generally, training in COMPASS specifically, and support from other

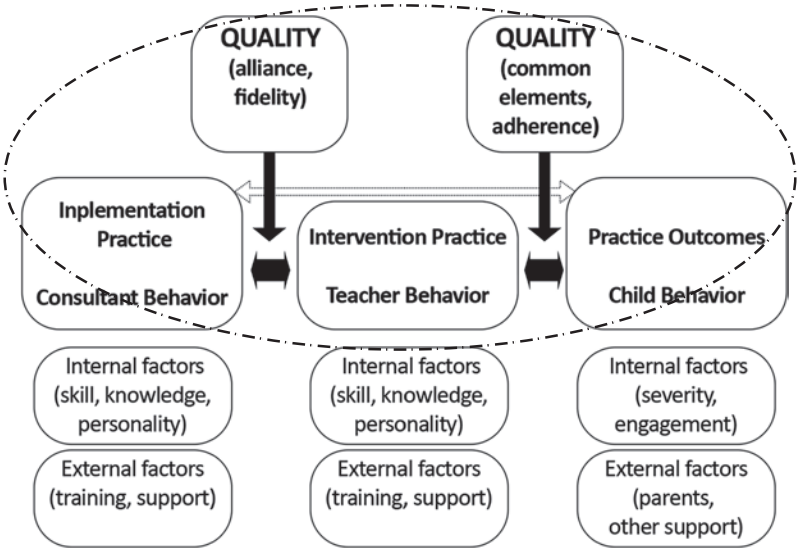


Fig. 2.3 Integrated COMPASS framework. (Reprinted by permission from Springer Nature, Overview of Evidence Based Practices in Psychology and Implementation Science by Lisa A Ruble, John H. McGrew, ©2015)

consultants or administration. Internal factors could include general skills and knowledge (listening or process skills, observational or assessment skills, knowledge of autism) and skills specific to COMPASS (ability to create good goals, knowledge of COMPASS model), as well as personal factors (sense of well-being, burnout). Similarly for teachers, external factors include training (both general training in special education and specific to COMPASS) and support (other teacher support, general support from family and friends, administrative support, consultant support, workplace supports—time, equipment), and internal factors could include skills/knowledge, again both general and specific to COMPASS (knowledge of autism, skills in data collection, knowledge of COMPASS model) as well as personal factors (burnout, stress, optimism). For students, external factors include supports (teacher, parents, other students, or professionals) and teaching (teacher instruction and feedback) and internal factors include knowledge/skills (good attentional ability, educational attainment, language skills) and personal factors (autism severity, intellectual disability). It should be noted that the initial COMPASS consultation provides a thorough assessment of the internal and external factors impacting the student.

Another critical feature of the model is an assessment of the quality of the interactions between the consultant, the teacher, the caregiver, and the student. As with the internal and external factors, quality can reflect practices specific to COMPASS or general practices characteristic of good consultant or teacher practice. For example, the quality of the consultant-teacher interaction might reflect elements of good consultation generally (empathy, rapport, reflective statements) or of COMPASS specifically (adherence to COMPASS coaching protocol, feedback of goal attainment). Similarly, the quality of the teacher-student interaction might reflect elements of good teaching generally (prompt feedback, joint attention) or of COMPASS specifically (adherence to COMPASS teaching plan, high-quality IEP goals).

As shown in Fig. 2.3 and explained above, together these quality and internal and external factor elements define the critical factors impacting outcomes. That is, within the integrated COMPASS framework, understanding success for the student receiving the COMPASS intervention (teacher behavior), and COMPASS implementation (consultant behavior) requires knowledge of the impact of each of these potential internal, external, and interaction quality factors.

Up to this point, we have published studies on teacher and student internal and external factors that impact child outcomes (Ruble & McGrew, 2013). But because COMPASS was delivered solely by the developers, we lacked information on consultant factors. The primary information missing was whether we could effectively train naïve consultants to do COMPASS well with positive outcomes. Further, understanding what consultant factors such as knowledge of autism interventions, experience teaching children, and consultation experience were critical and accounted for ability to implement COMPASS well. Before we could answer this question, it was necessary to develop a training program on COMPASS. To address the need for an evidence-based training package that can help us assess the consultant factors, teacher factors, and caregiver factors, we developed and tested a training package using an iterative, multistep design over several years in which feedback from the previous step was used to refine the training package over time. This

chapter will describe the iterative development of the COMPASS training package, the implementation outcomes of the training, and what we have learned along the way, especially about consultant internal and external factors.

Prerequisite Skills, Knowledge, and Experience of COMPASS Consultants

Before describing our developmental process related to the training package, we want to review characteristics important for an effective COMPASS consultant, that is, what prerequisite knowledge, skills, and dispositions consultants should have prior to being trained in COMPASS. First, given that COMPASS is designed as an intervention for students with autism, it is important for consultants to have a strong understanding of the characteristics and shared challenges experienced by people with autism. Autistic persons, by definition, have relative weaknesses in social communication and social interaction compared to other areas of development (such as reading skills or motor ability) and engage in restricted or repetitive patterns of behavior, interests, or activities (DSM-5; American Psychiatric Association, 2013). It is important for consultants to have a strong understanding about how these challenges may manifest in the behavior of an individual with autism when there is a mismatch between the individual and the environment (setting, person, materials). This knowledge of autism is critical when guiding the discussion of the student's COMPASS profile as it is important for consultants to interpret the student's behavior from the perspective of autism. Often, we describe individuals with autism as the ones with challenges in perspective taking, but neurotypical individuals have as much if not more problems understanding the perspective of those with autism. The COMPASS profile was developed with this in mind so that the consultant with the autistic student (when available), caregiver, and teacher input, that is, the team, come to a shared understanding of the child at home, school, and in the community. Many autism trainers are familiar with the iceberg for illustrating that what is observed on the surface is a manifestation of what is not observed and occurs below the surface. Using the iceberg analogy (see Appendix A) can help families and teachers understand that behavior (e.g., meltdowns) they see on the surface could have an underlying cause related to sensory challenges, communication challenges, or social needs that are not being met by the environment. This knowledge of the characteristics of autism aids in the selection of pivotal social emotional learning goals targeting those underlying causes of behavior.

Next, it is important for consultants to have a practical understanding of intervention plan development and evidence-based practices for students with autism. COMPASS intervention plans often incorporate multiple evidence-based practices within a single intervention plan (Ruble et al., 2022). For example, a single intervention plan targeting social initiation with peers, for example, may include the use of a social story, peer-mediated instruction, visual supports, prompting, and reinforcement which are each independent EBPs. Thus, it is important for consultants

to understand not only the value of EBPs in intervention but also the need to consider multiple EBPs that must be adapted with the child's developmental level in mind. While COMPASS consultant training does provide instruction in how to develop intervention plans, specific training on individual evidence-based practices is beyond the scope of training in COMPASS. Consultants need to be familiar enough with commonly used EBPs to be able to guide intervention plan development process by building those EBPs into a plan that incorporates and are adapted to the student's personal and environmental challenges and supports for the skill being targeted.

Lastly, it is helpful for consultants to have some experience with managing group dynamics in a consultation, particularly when the relationships between group members are either not established or are strained. Process skills, such as validating concerns, asking open-ended questions, and checking for understanding through paraphrasing and summarizing, create an environment in which everyone feels heard. A positive rapport provides the foundation for shared decision-making, a central tenet of COMPASS. As all decisions about the student's educational programming are made collaboratively with teachers and caregivers, COMPASS requires consultants to approach the consultation not as an expert, but rather as a facilitator for the process. While we do provide some training in these skills, it is helpful for consultants to have some experience in consultation more generally first to serve as a basis for training in COMPASS specifically.

Iterative Development of the COMPASS Training Package

The development of the training package for COMPASS was an incremental process that occurred over several years. COMPASS had previously been implemented by the researchers, and fidelity measures had been developed to measure adherence and teacher/caregiver acceptability of both the initial consultation and coaching sessions (Ruble et al., 2012). This information was used to develop an initial training package focused on consultation and coaching, respectively. However, before we developed the pilot training package, we conducted focus groups with stakeholders (caregivers, teachers, special education directors, and school-based consultants) on their perspectives on autism-focused consultation practices and training. This information was used to develop our first training package which was pilot tested with consecutive groups of consultants, teachers, caregivers, and students over a period of 4 years with feedback used at each iteration for further refinement. To simplify this process, we have described it as a series of five phases:

- Phase 1: focus groups
- Phase 2: initial training package development
- Phase 3: pre-pilot resting
- Phase 4: full training package pilot testing over 2 years
- Phase 5: replication and refinement

Phase 1: Focus Groups

Before we could develop a training package sensitive to the needs of school consultants and effective, we needed to obtain stakeholder input. Thus, we conducted a series of focus groups with stakeholder groups (special education administrators, special education teachers, consultants, and caregivers) to better understand their perspective of consultation in relation to students with autism. Specifically, we asked questions regarding experiences working with a consultant, what makes a good consultant and good consulting, and what is helpful and not helpful in consulting. For teachers, consultants, and administrators, we also asked questions about specific training ideas (modality, length of training, content of training, barriers, etc.).

Five primary themes emerged from the different stakeholder groups regarding features of effective or good consultation including: (1) a focus on building collaborative relationships, (2) tailoring consultation to the needs of the teacher, (3) empowering teachers through active problem-solving rather than going in as an expert, (4) consistent communication and reliable follow-up with teachers and caregivers, and (5) providing transition support to teachers and caregivers as students move from one setting to another. These aspects of effective consultation were consistent with our work in COMPASS and incorporated into our training package content and materials. We also included fidelity of implementation measures (adherence and quality of delivery) for COMPASS consultant trainees. Content related to building strong teacher/caregiver/consultant alliance were added including methods to address teacher resistance and approaching consultation and coaching as a collaborative activity where all team members have unique and important perspectives and knowledge to share.

Administrators, consultants, and teachers also offered feedback on the training package itself based on their experience with other training programs for autism interventions (e.g., TEACCH, Ziggurat model, etc.). Focus group attendees demonstrated a preference for face-to-face training complemented by online asynchronous training modules completed prior to the training. For timing of the training, we learned that the in-person training would be best timed to occur at the beginning of the school year with at least 1–2 months in between the two training days to give time for consultants to conduct at least one consultation before the coaching training. Attendees demonstrated a strong preference for two full-day training sessions rather than shorter, more frequent sessions due to their busy schedules. Regarding the content, attendees recommended including presentation of content, followed by an example, then opportunities to practice skills learned with peers. Consultant attendees also recommended trainees have access to all training materials (e.g., PowerPoints, workbooks, etc.) during the training.

Phase 2: Initial Training Package Development

Based on focus group feedback, the initial training package was developed to include a hybrid approach, meaning both an online training website along with in-person training days. We applied a "tell-show-do" format in which the targeted knowledge, concepts, and skills were presented, modeled, and then practiced using case studies from past COMPASS consultations.

For training content, a decision was made early on to limit the training specifically to COMPASS, rather than including training on EBPs in autism and consultation in general. This decision was based on the availability and accessibility of multiple sources on autism and evidence-based practices. The AFIRM modules, provide detailed descriptions, implementation checklists, video examples, and other resources on 28 EBPs (https://autismpdc.fpg.unc.edu/evidence-based-practices). Also, in the state in which COMPASS was developed and tested (i.e., Kentucky), we learned many schools have access to autism trainers. Large schools usually have one within the school system, while smaller and rural schools typically have access to trainers located within the educational co-op. Further, we learned that these trainers have experience in consultation that could be leveraged during the COMPASS training.

Based on research experience implementing COMPASS and focus group feedback, an initial training package incorporating the following elements was developed:

(a) Communicate the COMPASS program, philosophy, and best practices for educating students with autism to caregivers and teachers.
(b) Use and assess effective process skills necessary to ensure adequate and meaningful participation of both teachers and families in both the initial consultation and coaching sessions.
(c) Implement the initial consultation and all coaching sessions with fidelity and teacher/caregiver acceptability.
(d) Develop high-quality goals, goal attainment scales, and intervention plans individualized to the student's needs and environment.

Phase 3: Pre-pilot Testing

Before testing the full pilot study, we conducted a small pre-pilot trial during the spring semester of the school year to learn as much as possible for refining the training package when tested fully the following fall. This preliminary training package was tested with three highly experienced school-based autism consultants who each implemented one consultation and one coaching session with one teacher and one caregiver. The training package consisted of an online website using CANVAS and with content focused on consultation and coaching skills, two full-day training sessions that were 1 month apart, and supervision after their consultation and coaching

session based on audio recordings of each session and video recordings of the teacher's implementation of the intervention plans. Consultant trainees, teachers, and caregivers completed fidelity checklists, feedback on the consultant's process skills, and satisfaction measures following each consultation and coaching session. Participants also completed baseline measures prior to the consultation and final measures after the last coaching session. The plan was to obtain both a broad perspective on the experience of providing/delivering COMPASS (from school consultants) and receiving COMPASS (from caregivers and teachers). Thus, we assessed several types of outcomes such as the acceptance of the training package, appropriateness, and feasibility of implementing COMPASS and fidelity of implementation of COMPASS.

Development and Refinement of Feedback Procedures and Measures

Because we were training COMPASS-naïve consultants, it was necessary to develop tools to assist with providing feedback to the trainees. Our process for providing effective and efficient feedback required the most work in our development activities. First, we want to note that we view feedback as a collaborative activity guided by open-ended questions and ratings of criterion-based performance, input from the consultant trainee on their own observations of their skills, responses from the other participants, and the overall process. Rather than referring to it as supervision, we purposely chose feedback to describe this activity. Supervision often implies a hierarchical structure where a person in a higher position (supervisor) provides evaluation of the subordinate's skills. The underlying philosophy of COMPASS is collaboration and support; thus, we view feedback/training vs supervision to be more consistent with our approach. Terms may be used interchangeably, but the COMPASS trainer is not a formal supervisor or administrator that provides evaluation of job performance. *This is consistent with the role of the COMPASS consultant as they too should not be a supervisor who is in the position of authority over the teacher. At all levels, COMPASS is based on an egalitarianism.*

During this implementation of the pre-pilot training package, adherence and quality of delivery protocols that were already developed from prior COMPASS studies were implemented (e.g., consultation adherence and quality of delivery, coaching adherence and quality of delivery). The feedback included how well the consultant adhered to the COMPASS intervention, demonstrated process skills, and achieved teacher/caregiver satisfaction. To obtain an even fuller understanding of the impact of COMPASS when provided by trainees, information on how well the teacher implemented the teaching plan, the quality of teaching, and student engagement was also obtained. These forms are available in the original manual (Ruble et al., 2012). Once compiled and reviewed with the trainee, comments summarizing areas of strengths and areas of improvement were also included at the end of the feedback forms. As consultant trainees for the pre-pilot conducted a single consultation and coaching session, the focus was on the feedback activities and how well

they worked for obtaining information on implementation outcomes of acceptability, appropriateness, feasibility, and fidelity.

Because we were not sure how much or to what extent feedback was necessary, we initially applied a thorough approach that took a considerable amount of time. Also, we were not sure at this stage what areas related to the delivery of COMPASS were most essential and what areas were secondary for feedback and improvement. Because of our questions about feedback, the trainer listened to the entire audio recording of the session (3 hours for each consultation and 1 hour for each coaching session). We also reviewed the COMPASS profile, the goals, and the intervention plan for the initial consultation. For coaching, we reviewed the coaching summary, goal attainment scales, and teacher videos of implementation of the intervention plans in addition to the full-hour audio recording of the coaching session. For both consultation and coaching feedback, sessions generally lasted 1 hour and were conducted for each individual consultation and coaching session. On average, trainers spent roughly 4 hours preparing for the consultation feedback sessions and 1 hour for the coaching feedback session. However, we recognized that this degree of preparation and feedback was not feasible to support the greater adoption and feasibility of COMPASS, so we later developed a more time-efficient and equally effective approach to feedback (Hoffman et al., 2023) that reduced the amount of time needed to prepare by 80%. We describe our final and more time-efficient feedback protocol at the end of the chapter.

Training Package Changes Suggested by Pre-pilot Participants

After completing the training, consultant trainees participated in a group interview and provided open feedback on the training package. They suggested a need for time efficiency and reduced paperwork, with the overall goal of increased feasibility and recommended the following:

- Organize materials by creating a checklist and toolkits specific to consultation and coaching to help with fidelity of implementation.
- Put all post-consultation and coaching surveys online to reduce the use of paper.
- Create a platform to submit all reports and audio recordings online as submitting them via email was difficult due to file size restrictions.
- Create electronic versions (i.e., word documents and fillable PDFs) of the COMPASS consultation report and coaching report that they could edit and submit to reduce the use of paper.

Following this feedback from the trainees, we updated the training site to allow for electronic surveys and submissions of all documents, audio recordings, and video recordings.

Phase 4: Full Training Package Pilot Testing

The first full test of the refined COMPASS training package was then implemented over two school years with two consultants trained in year 1 and an additional seven in year 2. Based on the experience of training and providing feedback as well as the feedback from participants, further refinements of the training package were made. In total, consultant trainees received 20 hours of direct training and feedback from the researchers (see Fig. 2.4). The final training package maintained the hybrid protocol of online self-directed training modules and in-person training complemented by individualized performance feedback from the trainers. Feedback included measures of acceptability, fidelity, feasibility, and appropriateness from all participants, including teacher and caregiver acceptability (i.e., satisfaction and therapeutic alliance) and teacher and student responsiveness (i.e., teacher adherence to the intervention plans, student goal attainment). All finalized measures for feedback are provided in the Appendix B.

Quality of Intervention Plans

As mentioned earlier, because we were not sure what specific areas might be challenging for consultant trainees to implement well, our broad and thorough feedback process helped identify the difficulty trainees had writing high-quality intervention plans using an EBPP approach (see Chap. 1). The intervention plans developed following the consultation were quite different between consultants in terms of the structure, amount of detail, and inclusion of EBPs individualized to the student's personal and environmental challenges and supports. For example, some intervention plans described activities that would not be able to be observed on a teacher-made video (i.e., pre-teaching elements such as developing materials, arranging the

	Training Activities	Total Hours
Consultation Training	8hrs In-Person + Optional Online Self-Directed	8 hrs
Consultation Feedback	2 hours	2 hrs
Coaching Training	8 hrs In-Person + Optional Online Self-Directed	8 hrs
Coaching Feedback	2 hrs	2 hrs
	Total	20 hrs

Fig. 2.4 Pilot training package activities. *Note.* Estimated times may vary and additional time may be needed for completing paperwork or extra consultation with the COMPASS team as questions arise

room in a certain way, or reviewing a specific evidence-based practice), some failed to include a step-by-step teaching sequence, some did not adequately include evidence-based practices, and others failed to include plans for maintenance, self-direction, and generalization. Teachers were often confused about what they needed to video resulting in poor-quality videos that did not capture the entire teaching sequence. Because it was necessary to judge to what degree teachers implemented the teaching plans for fidelity monitoring, obtaining reliability of ratings of intervention plans that were so discrepant was problematic.

While we wanted to preserve the team's creativity in designing intervention plans individualized to the student's needs, it became clear that we needed a more standardized approach on how to write effective intervention plans. To this end, the intervention plan template was enhanced to include three sections: (1) pre-teaching activities, (2) step-by-step teaching plans, and (3) plans for maintenance, self-direction, and generalization (see Appendix A for the template). Phase 5 describes more details of how to use the Appendices.

Pre-teaching Activities

Pre-teaching activities included any activity the teacher would need to do prior to implementing the step-by-step intervention plans. For example, is there a skill, activity, or knowledge the student needs to be familiar with prior to implementing the teaching plan (e.g., social story on taking turns, modeling a task sequence, errorless learning to teach a new task)? Does the teacher need to review any specific EBPs, set up the environment in a specific way, or get/create specific materials? Do peers or staff need training on teaching sequence? These considerations were discussed during the consultation to ensure that they were accounted for in the intervention plans.

Step-by-Step Teaching Sequence

High-quality intervention plans include a systematic step-by-step intervention plan that individualizes evidence-based practices to the unique personal and environmental strengths, interests, and challenges of the student. This systematic process was summarized by Ruble et al. (2020) in the common elements of an effective teaching sequence (see Fig. 2.5). This teaching sequence starts from the moment the student's attention is focused on a goal-directed activity/task. Next, response-prompting procedures, including appropriate latency periods between prompts, are used to increase the probability of a correct response to the controlling prompt. The teaching sequence ends when the student is reinforced for successfully completing the activity using a reinforcer and reinforcement schedule appropriate for the needs of the student.

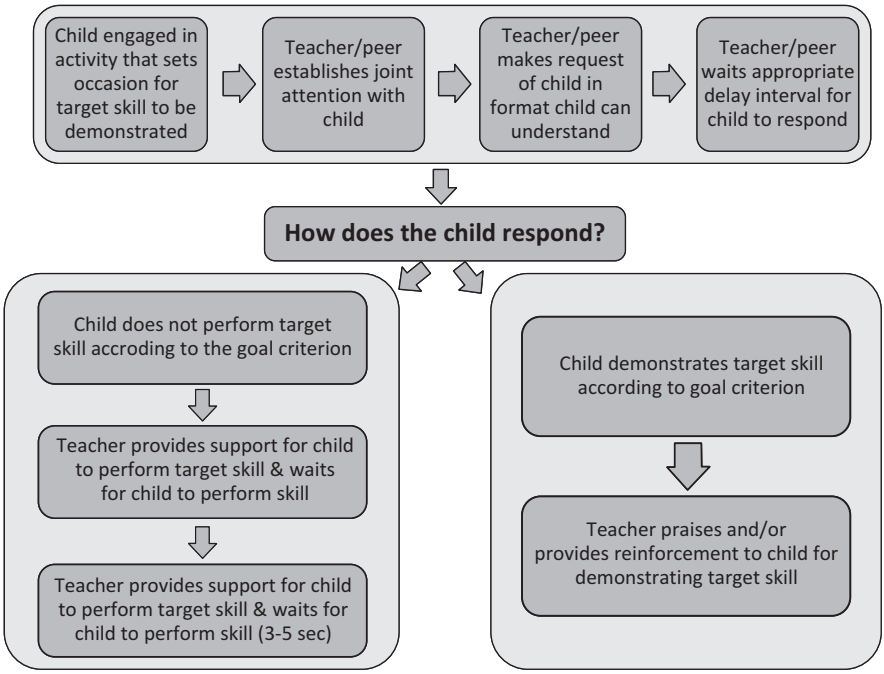


Fig. 2.5 Common elements of an effective teaching sequence

Plans for Maintenance, Self-Direction, and Generalization

Lastly, it was important to provide plans for maintenance, self-direction, and generalization in the intervention plans. Including this information allows for the following questions to be answered: (a) How will the student's performance be maintained? (b) How will the student become more self-directed and independent? (c) How will the skill be generalized to other situations, people, and environments? The answers to these questions were used to guide the revisions to the step-by-step teaching plans during coaching as the student progressed in demonstrating the skill. These elements were also incorporated into the +1 and +2 ratings on the goal attainment scales (see Chap. 5, for example, Fig. 5.3; Ruble et al., 2012) for each goal reflecting progress exceeding or greatly exceeding the goal due to sustained maintenance and improved self-direction and generalization. More information on goal attainment scales is in Chapter 5.

Once the template for the intervention plans were enhanced with these elements, a 16-item, yes-no checklist assessing the quality of intervention plans described above was developed and pilot tested in years 1 and 2 in a total of 28 consultations (Ogle et al., 2023a, 2023b). The Intervention Plan Quality Scale (IPQS) aided the feedback process by focusing on specific elements of high-quality intervention plans (e.g., measurable goals, prompting, reinforcement, plans for generalization; see Appendix B). The IPQS is a reliable measure across raters of the 28

consultations and was successful in helping consultant-trainees develop higher-quality intervention plans over time after receiving feedback (Ogle et al., 2023a, 2023b). Moreover, the IPQS was found to partially mediate child goal attainment outcomes by improving teacher adherence in implementing the intervention plans.

Pilot Cohorts 1 and 2

Cohort 1 consisted of two school-based consultant trainees who implemented COMPASS with eight sets of teachers, caregivers, and students. Cohort 2 consisted of seven school consultant trainees who implemented COMPASS with a total of 20 sets of teachers, caregivers, and students.

All consultant trainees in Cohort 1 were provided with virtual feedback over Zoom by the researchers following each consultation and coaching session—a total of 10 hours of feedback. However, based on data showing that consultant trainees attained at least 80% adherence at their second consultation and coaching session, feedback via video conferencing was reduced to two feedback sessions for consultation and two for coaching for Cohort 2 with all subsequent consultations and coaching sessions receiving emailed performance feedback using the same forms and the option to call with any questions. This reduced the overall time commitment by 6 hours while maintaining the critical performance feedback necessary to continually improve their skill as a consultant.

After they were trained, interviews were conducted with the consultant trainees about their experience of being trained in COMPASS. They were largely positive about participating and intended to continue to use parts of the COMPASS process the following academic year (e.g., using the COMPASS profile to identify goals and write intervention plans using the COMPASS coaching process; training teachers to use the COMPASS profile with the caregiver and review it before an IEP meeting). They also appreciated the additional support in developing high-quality intervention plans using the updated template and the IPQS that could be used as a checklist during the consultation to ensure that the plans developed were high quality. However, they experienced some challenges related to the logistics of sharing video, audio, and text files between teachers, caregivers, and the researchers.

Training Results

Due to the COVID-19 pandemic, consultant-trainees in the second year of pilot testing were impacted by school closures causing planned activities to be unable to be implemented fully. However, we did obtain data based on what they were able to complete before schools closed. Results, when combined with year 1, confirmed that by their second consultation, consultant trainees had acceptable levels of adherence to the COMPASS initial consultation fidelity measures (see Ruble et al., 2022).

We also learned that despite enhancing the intervention plan template and developing the IPQS, they took longer to achieve acceptable adherence to writing

high-quality intervention plans (Ogle et al., 2023a, b). That is, they demonstrated only 55–68% adherence after three feedback opportunities on the quality of the intervention plans. It was not until the fourth opportunity for feedback that they achieved 80% adherence to intervention plan quality. There was also a wide discrepancy between consultant trainee (CT) ratings and trainer ratings of intervention plan quality with CTs' self-report ratings far higher than the trainer's ratings in the first consultation (e.g., 80% from trainees vs 55% from trainers). Teacher and caregiver acceptability for all initial consultations and coaching sessions were rarely rated below the highest rating available (Ruble et al., 2022). Thus, we found this measure to not be very informative for identifying CT training needs because of the consistently high ratings from caregivers and teachers.

This same pattern was replicated for coaching (Ruble et al., 2022). CTs needed at least one feedback session to achieve high adherence to the COMPASS Coaching Checklist and Process Skills. Teachers were consistently highly satisfied, and their adherence to the teaching plans improved with the more coaching they received. Additional results by condition are discussed in Chap. 7.

Phase 5: Replication and Refinement

Based on feedback from COMPASS-trained consultants at each phase, further refinements and improvements to the training package were made following each phase. This final package was used to train two different groups of community-based consultant trainees. The first group of trainees were from Australia. Dr. Abby Love and Dr. Ru Ying Cai conducted an independent replication of COMPASS in Australian Schools. They describe their study, with outcomes and parent and teacher quotes in Chap. 4. A second set of consultant trainees were trained entirely online using Zoom. Unlike the previous phases, this training did not require implementation and supervision and only included the two training days and access to a training website. Based on feedback from both the Australian cohort and the community training cohort, final improvements were made to the training package of COMPASS in terms of improved and efficient feasibility and feedback.

Improving the Feasibility of Training and Feedback Activities

While the core training content provided via PowerPoint presentation has largely remained the same for both the replications of COMPASS in Australia and the community training, significant changes were made to simplify the implementation of COMPASS by reducing the amount of paper used during the consultation. Instead of the checklists and toolkits used in the original study and over the five phases described earlier, forms were condensed further, following the protocol for the consultation and coaching activities and eliminating the need for separate checklists. The feedback from the Australian consultants allowed for better use of forms in real time during the session, lessening the workload that had to be done following the

sessions (see Appendix A & B). For example, Appendix A has been shortened to a two page guide for the initial consultation. The first page provides a general overview of the goals and core philosophies of COMPASS and an agenda that consultants can use to introduce COMPASS. The next page provides guidelines for writing high quality goals and intervention plans that can be used when the goals and intervention plans are being developed using the interveniton plan templates that follow. The last section of Appendix A includes a survey for teachers and caregivers to provide feedback to the consultant. The consultant should provide a copy of the COMPASS Initial Consultation Guide (Appendix A) to all participants.

Efficient Feedback

Because our goal is to ultimately have autism trainers located in community settings to be the delivery mechanism of COMPASS, we recognized the need for more efficient and less time-consuming feedback. As mentioned, during Phases 4 and 5, trainers spent roughly 7 hours per consultant-teacher-caregiver triad listening to the entire audio recording of all consultation and coaching sessions and reviewing all documents and teacher-made videos of implementation. We revised and tested our protocols for feedback to be less burdensome on both the trainer and consultant trainees, particularly for the initial COMPASS consultation (Hoffman et al., 2023). Instead of listening to the entire 3-hour consultation audio, we tested and validated a protocol that consists of listening to a 30-minute sample of the consultation audio (first 5 minutes of introduction, 10-minute discussion of social skills on the COMPASS profile, 10-minute discussion of the intervention plan development for the social goal, and the last 5 minutes of closure and follow-up activities). This reduced the time necessary to prepare for feedback sessions by 80%. In addition, we reduced the items on both the consultation adherence checklist from 25 items to 16 items and the process skills checklist from 35 items to 12 items. We also removed the satisfaction measure; caregivers and teachers complete and replaced it with a much shorter Session Rating Scale (Duncan et al., 2003; Miller et al., 2002) and removed the requirement for caregivers and teachers to rate consultation adherence and process skills. The final measures are provided in the Appendix B: COMPASS Initial Consultation Feedback Protocol. Trainers should gather all the materials described in Step 1 of Appendix B for completing the forms. The first set of items concern adherence (Step A), and the second set of items provide the quality of delivery (Step B). Section D evaluates the quality of the intervention plan. All sections ask for both the consultant trainee and supervisor to provide feedback. This allows for a side-by-side comparison. We have observed that the more feedback trainees receive, the more consistent their scores are with the trainer's scores. The overall goal is for consultant trainees to achieve at least a score of 80% for each of these areas. In our experience, after one feedback session, trainees did achieve fidelity, with the exception of the intervention plan quality that required three opportunities for feedback. The last section, C, provides feedback on caregiver and teacher responsiveness to the consultation. We have found that this information, while generally always very positive, may provide additional information on potential issues

or barriers that might need to be problem-solved during the upcoming coaching session. The final section, E, allows for the trainer to provide a written summary of strengths observed and areas for further growth to target in future consultations with different sets of teachers and caregivers. A similar guide was created for the COMPASS coaching sessions as well that can be found in Appendix A in Chapter 7.

For coaching, we are in the process of conducting similar procedures of validating a more time-efficient approach that includes only listening to the discussion of one of the intervention plans (roughly 15 minutes) using our existing measures. Additionally, only measures of adherence, process skills, and teacher satisfaction via the Session Rating Scale (Duncan et al., 2003; Miller et al., 2002) are now included as part of coaching feedback. Additional measures collected for research purposes (Teacher Engagement Scale, Student Engagement Scale, Teacher Behavior Scale, and Common Elements Rating Scale) are not used for community delivery and assessment of COMPASS fidelity. For reference to these measures, they are provided in the original book (Ruble et al., 2012). See Appendix B in Chapter 7 for updated coaching feedback forms.

Additionally, to reduce the logistical barriers of sharing information between trainers, consultant-trainees, teachers, and caregivers, a COMPASS consultation and coaching electronic platform was developed to support the implementation of COMPASS. This website centralizes all information related to COMPASS including all data collection forms, intervention plans, consultation reports, coaching reports, goal attainment scales, and audio/video uploads. It is currently being pilot tested and is freely available for use at www.compassforautism.org. The platform allows the user to be designated as a trainer, consultant, or teacher. It is meant to be flexible and applicable.

In conclusion, we successfully developed, tested, and refined a training package for COMPASS using an iterative approach informed by stakeholders. This training package has evolved at each iteration to become more focused on training consultants to implement COMPASS with high fidelity and feasibility. It incorporates a focus on the most important aspects of effective consultation from the perspective of stakeholders (e.g., focusing on collaboration), addresses common challenges experienced by trainees (e.g., developing high quality intervention plans), and includes materials to support successful implementation (e.g., website to help with logistics, more focused handouts and templates, etc.). Combined with a feedback approach that focuses on the first consultation and coaching sessions respectively, the COMPASS training package is highly effective. Going forward, we hope to further refine our training package to include asynchronous, online training modules that do not require simultaneous in-person or online training. We also hope to see wider use of the COMPASS intervention for improving outcomes of autistic children, youth, and adults.

Appendices

The COMPASS Initial Consultation Guide (Appendix A) and COMPASS Initial Consultation Feedback Protocol (Appendix B) are available to download and print for free on our website at:
https://compassforautism.org/blank-forms/

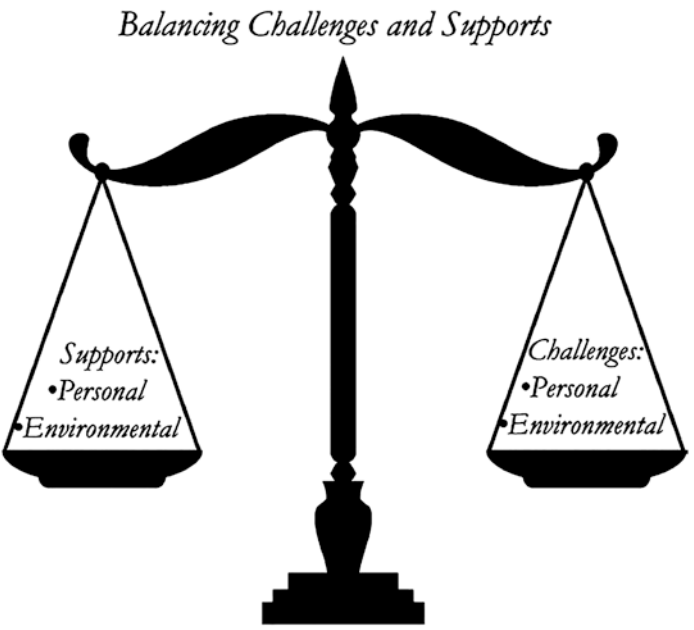
Appendix A: COMPASS Initial Consultation Guide

The Collaborative Model for Promoting Competence and Success for Persons with Autism Spectrum Disorder (COMPASS) is an evidence-based consultation and coaching intervention designed to help teachers and caregivers collaboratively create and implement an intervention plan designed specifically for students with autism. During this consultation, we will develop the intervention plan together.

Balancing Challenges and Supports
The goal of COMPASS is to improve child and youth outcomes by balancing personal and environmental challenges (things that make learning difficult) with personal and environmental supports (student interests/strengths and teaching strategies that support learning).

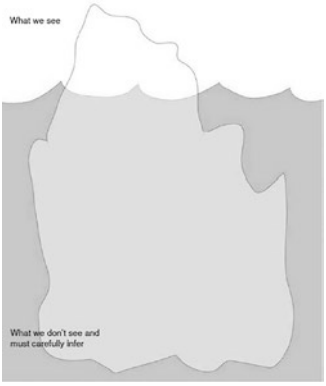
COMPASS does this by bringing together the caregiver and teacher to provide a 360-degree view of the student's current strengths and needs at school, home, and in the community and providing a process for developing high-quality, developmentally appropriate goals and teaching strategies.

COMPASS focuses on goals in the three areas recommended by the National Research Council (2001) for students with autism: communication skills, social skills, and independent learning skills. These are social emotional learning skills that lay the foundation for successful learning.



Understanding What We See

As we get to know the student, it is important to remember that the root causes for behavior are not always apparent. As we discuss the student, it may be helpful for us to think of the image of an iceberg: what we see is just the tip of the iceberg above the water and what we don't see are the personal and environmental challenges that we must understand so we can provide support.



Consultation Agenda

- 5 min: Make introductions, explain purpose/outcomes of COMPASS.
- About 1 h: Discuss COMPASS Profile. Summarize each section of the profile as you go along and make notes of areas of concern that you may want to focus on for goals later.
- About 30 min: Write a communication, social, and independent learning skill goal.
- About 1 ½ h: After each goal is written, write the step-by-step teaching plans for each goal.
- 5 min: Conclude, review, and discuss plans for follow-up coaching.

Writing High-Quality Goals

Each goal should contain the following components:

1. Condition: In what circumstance do you want to see the behavior?
2. Behavior: What is the behavior you want to see?
3. Criteria/Frequency: How will you know if goal is achieved?
4. Measurement: How will you measure the behavior?
5. Timeline: When do you want the skill to be accomplished?

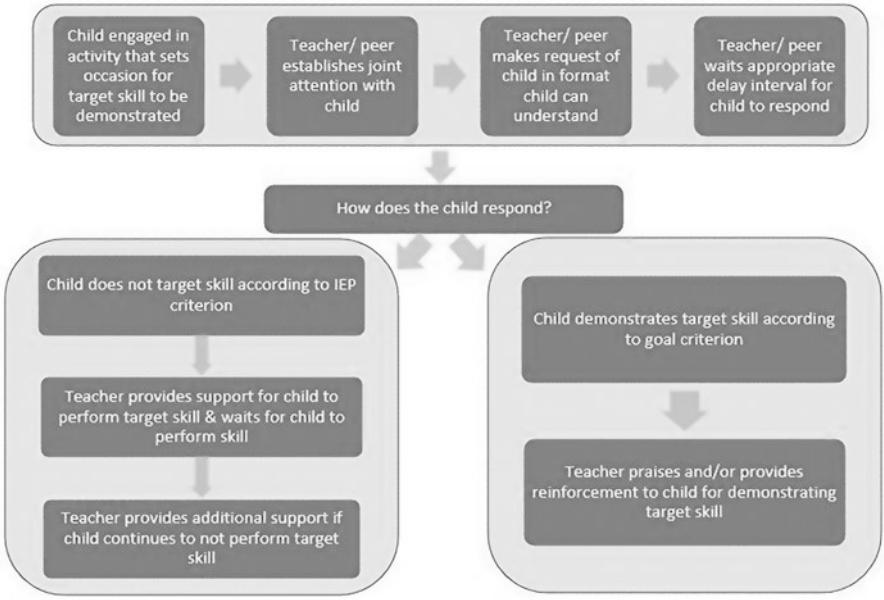
Example: When given a verbal greeting (Hi Matt!), Matt will return the greeting by saying "Hi" independently four times per day for 5 days as measured by a frequency checklist by the end of the school year.

Writing High-Quality Teaching Plans

Pre-teaching Activities

1. Is there a skill, activity, or knowledge the student needs to be familiar with prior to implementing the teaching plan (e.g., social story on taking turns)?
2. Does the teacher need to review any specific EBPs, set up the environment in a specific way, or get/create specific materials?
3. Peer or staff training on teaching sequence

Step-by-Step Teaching Sequence



Plans for Maintenance, Self-Direction, and Generalization

Once the student achieves the goal, what are the next steps? How will you maintain the student's performance? How will you help the student become more self-directed and independent? How will you generalize the skill to other situations and environments?

Communication Goal

Personal Challenges	Personal Supports
• • •	• • •
Environmental Challenges	**Environmental Supports**
• • •	• • •

Teaching Plans	
Pre-Teaching Activities	**Who/ Where/ When**
Step-By-Step Teaching Sequence	
	Materials
	Data System
Plans for Maintenance, Self-Direction, and Generalization	

Social Goal

Personal Challenges	Personal Supports
•	•
•	•
•	•
Environmental Challenges	**Environmental Supports**
•	•
•	•
•	•

Teaching Plans	
Pre-Teaching Activities	**Who/ Where/ When**
Step-By-Step Teaching Sequence	**Materials**
	Data System
Plans for Maintenance, Self-Direction, and Generalization	

Independent Learning Goal

Personal Challenges	Personal Supports
•	•
•	•
•	•
Environmental Challenges	**Environmental Supports**
•	•
•	•
•	•

Teaching Plans	
Pre-Teaching Activities	**Who/ Where/ When**
Step-By-Step Teaching Sequence	**Materials**
	Data System
Plans for Maintenance, Self-Direction, and Generalization	

COMPASS Caregiver & Teacher Survey

Please rate today's consultation by circling a number on the line nearest to the description that best fits your experience.

I did not feel heard, understood, and respected	**1 2 3 4 5 6 7 8 9 10**	I felt heard, understood, and respected
We did not work on or talk about what I wanted to work on and talk about.	**1 2 3 4 5 6 7 8 9 10**	We worked on and talked about what I wanted to work on and talk about.
The consultant's approach is not a good fit for me.	**1 2 3 4 5 6 7 8 9 10**	The consultant's approach is a good fit for me.
There was something missing in the consultation today.	**1 2 3 4 5 6 7 8 9 10**	Overall, today's consultation was right for me.

Johnson, Miller, & Duncan, 2000

1. What was most helpful about the consultation?

2. What was not helpful?

3. What supports do you need to implement the ideas shared in the consultation?

4. What barriers do you foresee in being able to implement the ideas shared in the consultation?

Appendix B: COMPASS Initial Consultation Feedback Protocol

Overall Steps for Feedback Protocol: Initial Consultation

1. Gather and review the following items:
   (a) COMPASS Profile/Joint Summary
   (b) Audio clips of consultation
   (c) Consultation report with goals and teaching plans
   (d) Consultation satisfaction (parent & teacher)
   (e) Consultant self-report of fidelity, process skills, and teaching plan quality

The steps to the left are the steps that your supervisor will go through to provide you with feedback on your consultation.
←

2. Enter all consultant self-report data and teacher/parent satisfaction data into this form.
3. Listen to audiotape (initial 10 min introduction; 10 min discussion social skills goal, 10 min of social skills teaching plan development, last 5 min).

A. **Adherence Checklist**

Instructions: Check the following boxes for the elements that occurred during the consultation. Refer to all materials gathered. Leave it blank if not present or not sure.

	Consultant	Supervisor
Beginning the COMPASS consultation		
1. Teacher and caregivers attend entire meeting		
2. Provide an overview and explanation of COMPASS including the purpose/outcomes of the COMPASS Consultation		
3. Provide an overview of social, communication, and independent learning goals and why they are important to target for students with ASD		
COMPASS is collaborative as defined by		
4. Planning for the student's program is based on input from all participants		
5. Caregiver and teacher contribute ideas for goals and teaching plans		
The COMPASS consultation process incorporates:		
6. Handouts, including the COMPASS Consultation Report and student's COMPASS profile, to help organize information, identify student's needs, and solicit input from all members		
7. Facilitated guidance and structure from the consultant		
8. A description of the student at home, in the community, and at school		
COMPASS consultation results in proactive problem solving		
9. Interactive problem solving is implemented by team members providing input and ideas for specific problems for implementation and solutions		

	Consultant	Supervisor
COMPASS consultation concludes with a plan for further action		
10. Develop clear action plan for follow-up (plan to update IEP, schedule coaching sessions, etc.)		
11. Check everyone's understanding of the goals and plans at the end of the consultation and clarify any questions or ambiguities		
Total	**x/11** **X%**	**x/11** **X%**

B. **Quality of Delivery Checklist**

Instructions: Review each skill by checking the box if the consultant demonstrated the skill. If the consultant did not or you were not sure, leave it blank.

	Consultant	Supervisor
Area 1: Clarifying Questions and Concerns		
1. Paraphrase what is said at least once		
2. Validate concerns and "listen" for feelings		
Area 2: Keeping the group moving forward and focused		
3. Consultation audio is 3 h in length (±15 min)		
4. Gently redirect conversations that stray from the goal of the activity; if conversations on topic/goal-directed, give credit		
5. Summarize concerns as a topic area closes		
Area 3: Involving all participants and Questioning		
6. Involve all participants (encourage listening and seek information from all participants)		
7. Avoid giving answers and instead ask open-ended questions		
8. Check for understanding		
Area 4: Valuing all participants' input & demonstrating cultural sensitivity and responsivity		
9. Remain nonjudgmental		
10. Use genuine minimal encouragers ("okay," "that's helpful to know") to validate participant statements		
11. Use a tone of voice that communicates interest		
12. Avoid acting as the "expert" by demonstrating that parents/caregivers are the ultimate decision makers for services and supports for their child		
Score	**X/12** **X%**	**X/12** **X%**

C. **COMPASS Consultation Session Rating Scale (refer to parent and teacher feedback)**

Instructions: Teachers and caregivers rated the session on a 1–10 scale (10 being the most positive).

		Teacher	Caregiver
Relationship:	I felt heard, understood, and respected.		
Goals or Topic:	We worked on and talked about what I wanted to work on and talk about.		
Approach or Method:	The consultant's approach was a good fit for me.		
Overall:	Overall, today's consultation was right for me.		

1. What was most helpful about the consultation?

2. What was not helpful?

3. What supports do you need to implement the ideas shared in the consultation?

4. What barriers do you foresee in being able to implement the ideas shared in the consultation?

D. **Intervention Plan Quality Scale**

Instructions: Please rate each item by using the corresponding intervention plan columns (i.e., C =Communication, S = Social, and L= Independent Learning). Check the following boxes for the elements that were observed in each intervention plan.

	Consultant			Supervisor		
	C	S	L	C	S	L
1. The goals are SMART (Specific, Measurable, Attainable, Relevant, and Time-bound)						
2. The teaching plans for each of the target skills are clear and specific						
3. The teaching plans list who will implement the plans and where and when they will be implemented						
4. The teaching plans list the resources and materials, including any modifications or accommodations, needed to implement the plans for each of the target skills						

	Consultant			Supervisor		
	C	S	L	C	S	L
5. The teaching plans describe the data collection system that will be used to monitor progress towards the goals						
6. At least one personal challenge and support and at least one environmental challenge and support of the student are addressed in the teaching plans for each skill						
7. In addition to reinforcement, at least one evidence-based practice for children with ASD is used for each of the target skills						
8. Pre-teaching activities (activities that address prerequisite knowledge or skills) are described in the teaching plans for each of the target skills						
9. The teaching plan matches the proposed goals in that the teacher engages the student in goal-directed activities for each of the target skills						
10. The teaching plans discuss how the teacher/peer/environment will obtain the student's attention at the start and maintain it throughout the teaching sequences for each of the target skills						
11. The teaching plans discuss how (e.g., verbal, picture, gesture) the teacher/peer will make an initial request or set up the environment in such as way (e.g., structured workstation) that the child can understand the goals of the activities						
12. The teaching plans remind the teacher to provide sufficient time (3–5 s) for the student to perform each of the target skills after the initial requests and following each prompt to perform each of the target skills						
13. The teaching plan describes how the child will be reinforced for completing each skill (e.g., lists specific reinforcers and mechanisms for implementation)						

	Consultant			Supervisor		
	C	S	L	C	S	L
14. The teaching plans describe in appropriate detail how the teacher will scaffold the skills for each of the target skills (e.g., instructional scaffolding = build on prior knowledge/skills, material scaffolding = visual prompts or cues, task scaffolding = breaking down the steps of a task and modeling them)						
15. There is a plan for maintenance, generalization, and self-direction for each of the target skills						
	X/15 X%	**X/15 X%**	**X/15 X%**	**X/15 X%**	**X/15 X%**	**X/15 X%**

E. **Summarized Supervisor Feedback**

Areas of Strength:

Areas for Growth:

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Chapter 3
Advances in Measurement in Transition IEPs for Youth with Autism

Jordan Findley and Lisa A. Ruble

Overview The purpose of the chapter is to review best practices for developing Individual Education Plans for transition age autistic youth. We discuss what should be in the IEPs and how COMPASS improves the content for more effective IEPs. We conclude with recommendations for writing high-quality transition IEPs.

When developing and testing an intervention, it is important for researchers to study the underlying mechanisms or explanations for why an intervention works. When we understand the active ingredients of effective interventions, then we can make the intervention even more potent and impactful by enhancing the active ingredient or by measuring it to make sure it is present. One active ingredient and reason why we believe COMPASS is so impactful is that it improves Individual Education Program (IEP) quality. We discussed IEP quality and its measurement in our first book with a focus on young children. We found that IEP quality not only improved after COMPASS but also was correlated with child IEP outcomes. In other words, the better the IEP, the greater the likelihood that children achieved their goals. We measured IEP quality using the National Research Council (2001; see Chap. 1, Fig. 1.3) recommendations that autism intervention programs target the underlying challenges in autism-social communication skills and self-management or learning skills. Thus, IEPs that had goals related to social, communication, and learning skills represent best practice guidelines. The second indicator of quality comes from federal law, the Individuals with Disabilities Education Act (IDEA, 2004). IDEA (2004) states that IEP goals should be measurable. Thus, goals that are objective, observable, and have clear criterion descriptors for goal accomplishment

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_3

are measurable and, therefore, high quality. *Following COMPASS, significant changes in IEPs related to both the NRC and IDEA indicators were observed in our randomized studies* (Ruble et al., 2010a, 2013a). *But for the comparison group that did not receive COMPASS, no improvement was observed in IEP quality, and children made significantly less progress on their IEP goals.*

For this chapter, we expand our discussion from our earlier work on IEPs for young children (Ruble et al., 2010b) and primarily focus on what is known about the quality of IEPs and its measurement for transition age students, that is, those between 16 and 22 years of age, and recommendations for improvement. We begin by outlining federal law requirements and best practice recommendations for IEPs for transition age students as well as the effectiveness of those requirements and recommendations. Next, we present a measure of IEP quality (IEP-Q), what we learned about the contents of IEPs for transition-age students including areas of improvement, and what differences in IEP quality were observed between young children with autism and transition age students. We conclude with discussion of considerations for writing effective IEPs for transition-age students with autism.

What Does the Federal Law Require to Be Included in IEPs for Transition-Age Students?

The IEP is important. It is the primary school-based tool for developing, guiding, and implementing seamless transition plans for successful postsecondary outcomes. IDEA (2004) has a promise for guaranteeing a quality educational program for all students with disabilities, including those with autism. As required by federal law, the IEP should include descriptions of the following:

(a) Present levels of academic and functional performance
(b) Measurable academic and functional annual goals (skills and behaviors a child is expected to perform within a given year)
(c) Benchmarks or short-term objectives (short-term steps necessary to complete each annual goal)
(d) Student progress toward meeting the annual goals and when periodic reports on the progress will be issued
(e) Related services and supplementary aids and services
(f) Appropriate accommodations that are necessary to measure the academic and functional performance of the child on state- and district-wide assessments

But for transition-age students, IDEA (2004) extends requirements for IEPs. First, IDEA (2004) defines transition services as a coordinated set of activities designed to move a student from school to post-school activities and may include components such as instruction, course of study, related services, and community experiences. Second, IDEA (2004) indicates that by age 16 (and often by age 14 in many states), IEPs are legally required to include the following:

(a) Appropriate measurable postsecondary goals related to training, education, employment, and, where appropriate, independent living skills
(b) A description of the transition services needed to assist the student in reaching those goals (IDEA, 2004)

Inclusion of an independent living skill postsecondary goal is a decision for the IEP team to make, but should be considered for students who do not have age-appropriate independent living skills which are broad and may include activities related to home living (e.g., making purchases, preparing meals), money management, transportation, laws and politics (e.g., voting), community involvement (e.g., participation in recreational activities), personal safety, interpersonal skills (e.g., establishes and maintains friendships), and self-advocacy (e.g., asks for accommodations).

To ensure schools create transition plans that are compliant with federal law requirements, the National Secondary Transition Technical Assistance Center (NSTTAC, 2009) developed the Indicator 13 Checklist. Indicator 13 assesses for content that is required for all transition IEPs and include the following:

(a) Measurable postsecondary goals
(b) Postsecondary plans that are updated annually
(c) Age-appropriate transition assessment
(d) Identification of transition services
(e) Courses of study that align with postsecondary goals
(f) Annual IEP goals related to transition service needs
(g) Evidence that an outside agency (if appropriate) and the student were invited to the IEP meeting

In addition to IDEA (2004) requirements for transition IEPs, high-quality IEPs should also include content that reflects the needs of students with autism as highlighted by the NRC (2001).

What Are Best Practice Recommendations for Developing IEPs for Transition-Age Students with Autism?

Compared to young children with autism, there is limited information on research and best practice recommendations on the content of IEPs for transition-age students with autism. Of these, many areas of recommended instruction overlap with best practice recommendations for young children but also expand to include priority-based literacy in functional skills required in adulthood (e.g., riding a bus; Schall et al., 2014). Content recommendations of transition IEPs include (a) social skills, (b) communication skills, (c) learning/work behavior skills (e.g., staying on task), (d) adaptive skills (self-help), (e) vocational skills, and (f) self-determination skills (Chiang et al., 2013; Schall et al., 2014; Shogren & Plotner, 2012; Snell-Rood et al., 2020; Test et al., 2009; Wehman et al., 2014). Landmark and Zhang (2013) incorporated additional best practice indicators for transition including

community-agency collaboration, family involvement, general education inclusion, and paid or unpaid work experiences.

How Effective Are Federal Law Requirements and Best Practice Recommendations for Impacting IEP Quality and Outcomes of Transition-Age Students with Autism?[1]

The answer to this question comes from research on how IEPs compare between students with different disabilities and what happens to students after high school. First, goals for postsecondary education/training and independent living are less likely to be present in IEPs for students with autism (Shogren & Plotner, 2012; Wehman et al., 2014). Moreover, employment goals for students with autism are more likely to be related to sheltered employment rather than competitive employment (Shogren & Plotner, 2012).

Transition IEPs often fail to meet IDEA requirements of goal measurability and goal alignment. Landmark and Zhang (2013) analyzed 212 IEPs for transition age students representing all disabilities. Less than half (44.8%) had measurable postsecondary goals in each recommended domain (i.e., education/training, employment, and independent living) and over two thirds had at least one annual IEP goal that was not measurable. Further, IEPs often lacked alignment between annual goals and postsecondary goals (Landmark & Zhang, 2013; Shearin et al., 1999). That is, even when postsecondary goals were present, there was not always a clear relationship between the postsecondary goals and the IEP goals and objectives, resulting in IEP goals that often fail to support the attainment of postsecondary goals (Szidon et al., 2015).

This last point is very important. Because transition IEPs are meant to be a results-oriented guide. If IEP goals fail to be linked to postsecondary goals, then planning for and achievement of postsecondary goals are seriously compromised. That is, ineffective transition planning negatively impacts postsecondary outcomes for students with autism. Several researchers have described the disparities in outcomes of students with autism. Compared to peers with other disabilities, including those with intellectual disabilities, individuals with autism experience significantly worse outcomes across several life domains. For example, young adults with autism have less involvement in technical education, postsecondary education, and employment following high school (Shattuck et al., 2012) and report the highest rates of no participation in employment and education (Shattuck et al., 2012; Wehman et al., 2014) compared to other disability groups.

[1] Portions of this section were reprinted from Research in Autism Spectrum Disorders, Volume 91, Findley, Ruble, McGrew, Individualized Education Program Quality for Transition Age Students with Autism (2022) with permission from Elsevier.

For functional skills, data from the National Longitudinal Transition Study-2 (NLTS-2) revealed that students with autism were least likely to be able to perform community-based functional skills such as preparing meals, laundering clothes, and buying items at a store compared to all other youth with a disability (Lipscomb et al., 2017). Socially, young adults with autism were more likely to endorse difficulty making friends and feeling less self-directed and autonomous compared to all other youth with an IEP (Lipscomb et al., 2017). These disparities in employment, daily living skills, and social outcomes suggest that the transition IEP is not living up to its promise to guide and promote a successful transition into the community (Ruble et al., 2019; Snell-Rood et al., 2020).

How Does COMPASS Address IEP Quality for Transition-Age Youth?

As mentioned in the opening paragraph, IEP quality through effective planning is a major emphasis in COMPASS. Therefore, considerable effort is spent not only in identifying personalized goals but also ensuring goals are of high quality. To help evaluate quality, the IEP Quality for Students with Autism (IEP-Q) was created for young children (Ruble et al., 2010b). The IEP-Q assessed indicators that come from both federal law requirements and best practice recommendations for educating children with autism. The IEP-Q was adapted for older students with transition plans and renamed IEP-Q-T (transition). The IEP-Q-T (see Appendix) assesses adherence to (a) the IDEA (2004) indicators and (b) the best practice recommendations for middle and high school students with autism (Schall et al., 2014; Shogren & Plotner, 2012; Test et al., 2009; Wehman et al., 2014). An important feature of IEP-Q-T is its inclusion of the assessment of transition services and postsecondary goals. For transition age youth, the postsecondary goals should be driving the goals in the IEP (IDEA, 2004; Szidon et al., 2015). Therefore, ensuring transition services and postsecondary goals are included in the quality assessment, in addition to annual IEP goals and objectives, was a critical adaptation.

The IEP-Q-T is made up of two scales, one for the IDEA indicators and one for the best practice indicators (see Fig. 3.1). The IDEA indicators include two subscales: (a) one that assesses annual IEP goals and (b) one that primarily assesses postsecondary goals. The seven-item IDEA indicators for annual goals subscale reflect federal law requirements applicable to all IEPs and are not specific to IEPs of students with autism.

As outlined in Fig. 3.1, the IDEA (2004) items assess the quality of the written descriptions of individual objectives as evidenced by (1) a description of the student's present level of performance for the specific objective; (2) a description of the skill domain in the present levels of performance for the general and/or developmental curriculum; (3) a measurable and behavioral description of the objective; (4) specification of the conditions (e.g., when, where, and with whom) under which the behavior is to occur; (5) the inclusion of specific criteria and a timeline for goal

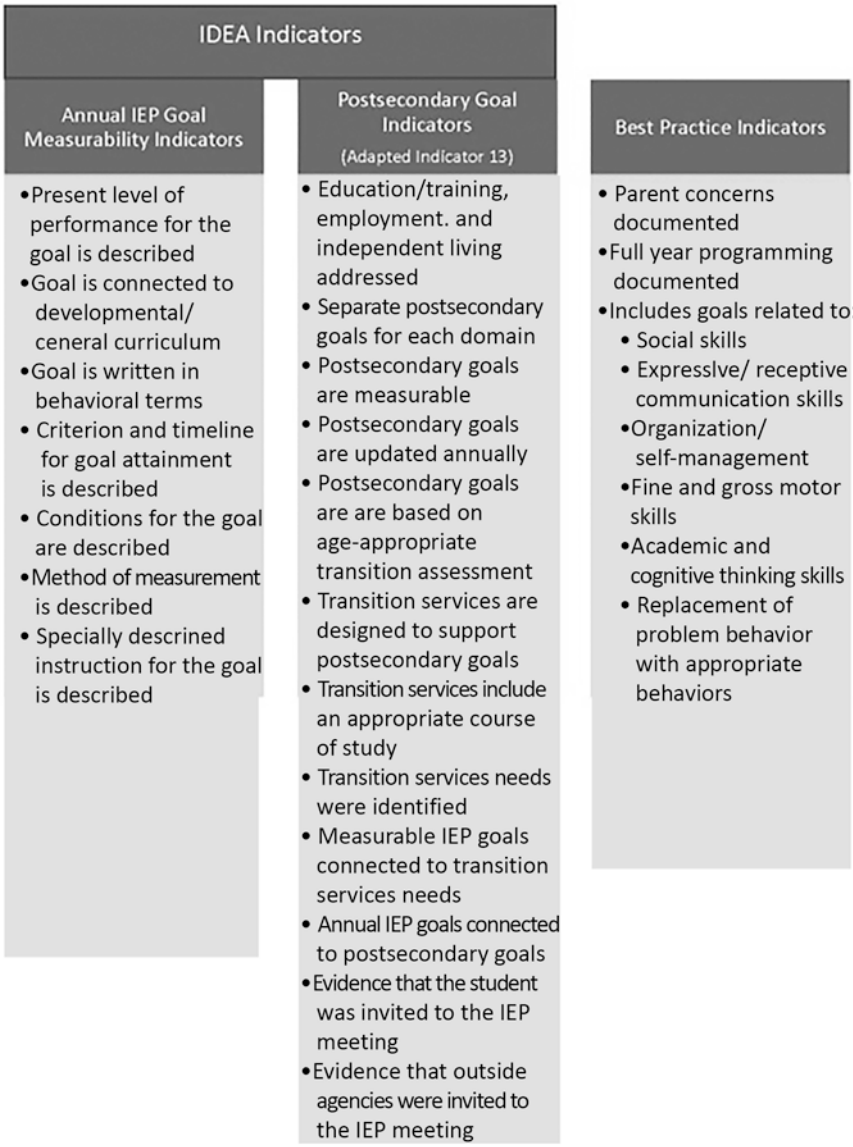

Fig. 3.1 IEP-Q-T items

attainment for each objective (i.e., not just the implied timeline from the IEP as a whole); (6) a method of goal measurement; and (7) the description of specially designed instruction (SDI) that is individualized for the goal/objective. These seven items are scored on a three-point Likert-type scale (0 = *no/not at all evident*, 1 = *somewhat evident*, 2 = *yes/clearly evident*). Of these seven items, there are three

targeted indicators (i.e., indicators 3–5) that are expected to change because of COMPASS.

The second IDEA subscale is based on Indicator 13 and focused on assessment of postsecondary goals and transition services. As mentioned earlier, Indicator 13 provides additional guidance for compliance with transition IEPs (NSTTAC;, 2009). Indicator 13 (see Appendix for the Adapted Indicator Form B Evaluation Form) evaluates postsecondary goals by domain (employment, independent living, education/training). If an independent living postsecondary goal is not included, it is not rated because IEPs are not required by IDEA (2004) to have independent living goals. For each assessable domain, 12 items are scored. The first four items were not included on the original NSTTAC (2009) Indicator 13 form: (1) Is the domain (employment, independent living, education/training) included in the postsecondary goals? (2) Is it a separate/distinct postsecondary goal? (3) Are there any transition services needs identified related to the goal? (4) Is (are) there an IEP goal(s) related to the student's postsecondary goal(s)? The subsequent Indicator 13 items assessed postsecondary goals (5) for their measurability in the areas of training/education, employment, and, where appropriate, independent living skills; whether they specified (6) annual updates; (7) the use of transition assessment(s); (8) description of transition services; (9) courses of study; and (10) annual IEP goal(s) related to the student's transition service needs. The final two Indicator 13 Subscale items assessed whether there was (11) evidence that the student was invited to the meeting and, (12) if appropriate, evidence that a representative of any participating agency was invited to the meeting. Each area is scored dichotomously (1 = *yes/present*, 0 = *no/not present*).

The second scale assesses whether best practice recommendations are reflected in the transition IEP. The best practice content indicators consist of eight items. The first three items assess if the IEP contains autism-specific goal domains related to (a) social skills, (b) communication skills, and (c) organizational/self-management skills. Because of the critical role of parents and caregivers as IEP team members, the fourth item assessed whether parental concerns were reported and included. The remaining four items assess whether there is content related to (a) fine and gross motor skills, (b) basic cognitive and academic thinking skills, (c) replacement of problem behavior with appropriate behaviors, and (d) full-year programming. Items are rated on a three-point Likert-type scale (0 = *no/not at all evident*, 1 = *somewhat evident*, 2 = *yes/clearly evident*). The three targeted indicators (social, communication, and organizational/self-management skills) are expected to change because of COMPASS.

What Do We Know About IEP Quality for Transition-Age Students with Autism?

To better understand the content and quality of IEPs for transition-age students with autism, 20 IEPs were collected as part of the randomized control trial of COMPASS for transition-age youth (Ruble et al., 2019). Given that IEP quality was identified

in previous COMPASS studies as an active ingredient of intervention effectiveness, special education teachers were asked to provide copies of their student's IEPs before and after receiving COMPASS. To understand IEP quality for transition age youth generally, only baseline IEPs were assessed for this discussion.

We identified three major areas as sorely lacking in the quality of transition IEPs across the three indicators: (a) failure to meet standards outlined by federal law, (b) limited content related to areas of best practice recommendations for instruction needed by students with autism; and (c) misalignment between present levels of performance, IEP goals, and postsecondary goals. Details for each of the quality indicators are described next.

Failure to Meet Standards Outlined by IDEA

While most IEPs we evaluated included some type of description of the present level of performance for individual objectives, less than half of the objectives were measurable, provided specified conditions, were connected to the general/developmental curriculum, described specially designed instruction, and included a method of goal measurement (see Table 3.1). These findings echo those for young children with autism (Ruble et al., 2010b) and are consistent with parent complaints (White, 2014). Another concern is that the majority of the objectives failed to include a specified timeline for completion. The default seemed to be to assume that the goal timeline was coincident with the timeframe of the IEP. Thus, there was no attempt to sequence or individualize objective completion times. Similar to the findings of Ruble et al. (2010b) for young students with autism, IEP forms did not allow for a more specific timeline of goal attainment other than the length of the IEP. Moreover, it was unclear when mid-course decisions on instructional changes should be made if the student was not making the expected progress.

A further concern was lack of specificity in the description of specially designed instruction and method of measurement for each objective and goal. On some occasions, IEPs failed to include any description of specially designed instruction for the goal. However, the most common occurrence was listing specially designed instruction under the goal without individualization to the objective. Similarly, descriptions of method of measurements lacked individualization to the objective (e.g., listed directly under goal) or lacked specificity (e.g., direct measures). These findings are consistent with other studies noting issues with IEP goals and objectives lacking measurability and specificity (Sanches-Ferreira et al., 2013).

Regarding postsecondary goals, transition IEPs in our sample included an average of 1.6 postsecondary goals. Every student had an employment postsecondary goal, which is consistent with IDEA (2004) requirements and aligns with Shogren and Plotner (2012) who found goals related to employment were common for all students with disabilities, including individuals with autism. Ninety percent of the IEPs addressed education and training in the postsecondary goals, indicating some IEPs neglected education and training, which is a required component, when

Table 3.1 Item level frequencies for the IDEA requirements

IDEA indicators[a]	% present transition youth[b]	% present young children[c]
The student's present level of performance is described for this objective	75.5	68.6
The conditions under which the behavior is to occur are provided (i.e., when, where, and with whom)	45.3	39.0
The criterion (i.e., rate, frequency, percentage, latency, duration, and timeline for goal attainment is described specifically for objective)	39.6	0
Specially designed instruction individualized to the goal/objective	28.3	2.9
The objective is able to be measured in behavioral terms	26.4	41.0
The student's performance of this objective is described in a manner that links it specifically to general/developmental curriculum	18.9	37.2
A method of goal measurement is described	9.4	1.9

Note. [a]Items had to be coded "2" to be considered explicitly stated. [b]Based on 50 coded objectives from COMPASS for transition randomized control trial. [c]Based on 105 coded objectives from initial COMPASS for young children randomized control trial

developing transition plans. It was common for the postsecondary goal to incorporate education/training and employment together (e.g., student will enter 4-year university to obtain employment in STEM field). In total, IEPs incorporated about 50% of the necessary components across education/training, employment, and independent living domains for postsecondary plans as measured by the adapted Indicator 13, a finding consistent with other analyses of transition IEPs (Landmark & Zhang, 2013).

Limited Content Related to Areas of Best Practice

When considering whether IEPs included content consistent with best practices, a strength for transition-age IEPs was the majority included goals related to learning/work skills and academic and cognitive skills. This may be reassuring given recommendations for incorporating academic skills into IEPs for students with autism to prevent them from falling behind their same age peers (Wilczynski et al., 2007). However, it is inconsistent with best practice recommendations for assessment of and provision of goals related to functional academic skills (e.g., reading signs in the community, making change for purchases) to be prioritized for transition-age students even if early academic skills (e.g., long division) have yet to be mastered (Schall et al., 2014). Similarly, Schall et al. (2014) suggested IEPs for students with age-appropriate academic skills should *emphasize functional skills to ensure success within the community* (e.g., *maintaining friendships, staying on task at work*).

The most glaring gap concerned skills essential for all students with autism—communication and social skills. Although communication goals were frequently included on the IEP when described as an area of need, 8 of the 20 IEPs marked communication skills commensurate with the same age peers or failed to describe the student's communication functioning in the present level of performance. Similarly, few IEPs included social skills goals. Although social concerns were identified in the present level of performance for 90% of the IEPs, only 22% of IEPs incorporated social skills goals. This finding aligns with Gelbar et al. (2018) who reported in their sample of 75 IEPs of students with autism that social skills were subsequently incorporated on the IEP only 13% of the time when recommended as a service by outside evaluators. At the high school level, it also appeared that setting may have impacted the types of goals included on the IEP, as students who spent a majority of their time (i.e., 80% or more) in general education had IEP goals almost exclusively related to academic (i.e., reading, writing, and math) skills or learning skills (e.g., staying on task and turning in assignments) with little to no support for social and communication skills. Given that core diagnostic criteria for autism involve challenges in social communication skills and that the students in this sample had autism as their eligibility classification for an IEP, it is notable that the IEPs included few goals related to social and communication skills or neglected communication as an area of need altogether (see Table 3.2).

Another area of significant weakness concerns parent/caregiver input. Parental concerns were only documented on the IEP 45% of the time, which is similar to what was found for young children with autism (Table 3.2; Ruble et al., 2010b). This finding is consistent with prior research in which parents report decreased satisfaction with their amount of involvement in IEP meetings as students age (Wagner et al., 2012). Ruble et al. (2019) found that parents were the primary or secondary persons responsible for the implementation of plans associated with postsecondary goals. If parents and caregivers are also not being included in a meaningful way in transition IEP planning, this could explain a large amount of the variance or reason for poor postsecondary outcomes.

With respect to postsecondary goals, fewer than half (45%) of the IEPs in the sample had independent living postsecondary goals. This finding is consistent with previous research demonstrating low rates of independent living goals for students with autism. Data from the NLTS-2 showed only 28 of every 100 students with autism across the nation had primary goals in independent living (Shogren & Plotner, 2012). IDEA (2004) does not mandate every student have an independent living postsecondary goal. However, the infrequency of independent living goals together with the fact that students with autism have the lowest levels of community engagement compared to students with other disabilities (e.g., Lipscomb, et al., 2017) highlights a potential gap in transition planning. Qualitatively, for almost half of the IEPs that documented an independent living goal, the independent living goal documented was "will live independently," lacking specificity or "will live at home with parents/family," and was no different from the student's present levels.

A final concern regarding postsecondary planning was the lack of evidence of involvement from outside agencies and students themselves, with documented

Table 3.2 Item level frequencies for the best practice recommendations

Items[a]	% present transition youth[b,g]	% present young children[b,i]
Parental concerns are described	45.0	48.6
Content includes goals that reflect the following:		
Expressive, receptive, and nonverbal communication skills	73.0[c]	85.7
Basic cognitive and academic thinking skills	70.0	71.4
Organizational skills and other behaviors that underlie success in a general education class	65.0	88.5
Symbolic functional communication system	50.0[d]	77.4[h]
Fine and gross motor skills to be utilized when engaging in age appropriate activities[e]	33.0[e]	65.7
Social skills to improve involvement in school and family activities	20.0	80.0
Replacement of problem behaviors with appropriate behaviors	5.0	42.9
Extended school is recommended	5.0[f]	8.6

Note. [a]Items reflect National Research Council Recommendations (NRC, 2001). [b]Items coded "1" or "2" were considered included in IEP. [c]Communication considered commensurate with the-same-age peers for eight participants (denominator adjusted). [d]Conversational speech reported on IEP for 18 participants (denominator adjusted). [e]No fine/gross motor concerns were reported for 17 participants (denominator adjusted). [f]Extended school year addressed on each IEP. [g]Percentage based on 20 coded IEPs. [h]Four students had conversational speech as reported in present levels of performance (denominator was adjusted). [i]Percent based on a total of 35 IEPs evaluated

evidence of involvement occurring less than 25% of the time. Both interagency collaboration and self-advocacy have been found to predict improved outcomes for education and employment for students with disabilities (Test et al., 2009). Thus, the IEP team should prioritize getting relevant members to the IEP meeting early on to ensure a smoother transition.

Misalignment Between Present Levels of Performance, IEP Goals, and Postsecondary Goals

Assessment of the entire transition IEPs revealed a distinct lack of cohesion. First, there was a lack of alignment between present levels of performance and annual IEP goals. Most notably, no IEP in the sample incorporated objectives that addressed 100% of a student's needs identified in the present levels of performance. For example, over two thirds of the IEPs in the sample documented a need related to social skills or behavior in the present levels of performance. However, less than one quarter of the IEPs included an annual goal to address those needs.

Next, there was a lack of annual goals documented on the IEP that were related to and aligned with the students' postsecondary goal(s) or transition service needs. This misalignment across present level of performance and student need, IEP goals,

and postsecondary goals is problematic because postsecondary goals should guide IEP development for transition age students (IDEA, 2004; Szidon et al., 2015). But in the current sample, IEP content was disjointed with a lack of clear relationship between the present levels of performance, IEP goals and objectives, and postsecondary goals, as if each were written independently from the other.

How Does IEP Quality Compare Between Young Students and Transition-age Students with Autism?

Within COMPASS samples, differences and similarities in IEP quality have been found between young children with autism and transition-age students with autism. Generally, across all ages, IEPs frequently did not meet the requirements provided by IDEA (2004) and recommendations outlined by the NRC (2001). Measurability of IEP objectives was a significant weakness. In addition, many of the IEPs did not sufficiently address the needs of those with autism (i.e., IEPs lacked goals/objectives related to social communication skills).

Related to IDEA (2004) indicators, IEP quality based on IDEA recommendations was better for transition age youth (see Table 3.1). A relative strength for both transition age youth and young children with autism was a majority of IEPs described the student's present level of performance for specific objectives. However, less than half of IEPs provided descriptions of the conditions under which the goal is to occur (i.e., when, where, and with whom) or wrote the goal/objective in behavioral terms. Although relatively poor for both young students with autism and transition-age youth, IEPs for young students with autism less frequently indicated criteria and timelines for goal attainment or provided descriptions of specially designed instruction for specific objectives compared to IEPs of transition-age students. Table 3.1 compares percentages of IDEA (2004) indicators met for young children with autism and transition-age youth.

In contrast, IEP quality based on NRC (2001) recommendations was better for young children (see Table 3.2). IEPs for transition youth have fewer goals and objectives overall when compared to young students with autism. In addition, goals for transition age students with autism were less diverse with more focus on organizational/work and academic skills, while IEPs for young students were more diverse and included organization/work, academic, communication, social, and fine and gross motor skills. IEPs for younger children with autism also documented more related service minutes such as speech and language and occupational therapy. Table 3.2 compares percentages of each type of goal identified for COMPASS studies conducted with young children compared to transition-age students.

In short, IEP quality was generally poor for both young students and transition age students with autism. Comparatively, the goals in the IEPs for transition age youth with autism were somewhat more measurable compared to IEPs of young children with autism. However, IEPs for young children with autism included goals that were better aligned with the core needs for students with autism compared to IEPs for transition age youth.

Lessons Learned for Writing Effective and Impactful IEPs for Transition-Age Students

The purpose of this chapter was to describe federal law requirements and best practices for transition IEPs, an assessment measure that can be used to evaluate the quality of transition IEPs, and areas for improvement. We conclude with final recommendations based on our quality assessment of transition IEPs.

There are two key gaps addressed in COMPASS for transition and advocated in the literature for developing effective transition plans for high school students with autism (Szidon et al., 2015). The two critical considerations we observed for developing high-quality transition IEPs involve identifying transition goals and creating IEP goals connected to the postsecondary goals. These are recommendations *in addition to* best practices and federal law. We summarize each component below. We also suggest readers review the National Technical Assistance Center on Transition website (https://www.nsttac.org/) and the practitioner focused article on five steps for developing effective transition plans for students with autism by Szidon et al. (2015) for additional support. We conclude this chapter with practical recommendations for school practitioners and researchers.

First, It Is Critical to Identify Postsecondary Goals

IDEA (2004) specifies that IEP teams MUST develop postsecondary goals related to employment, education, and training. It is recommended that employment and education/training goals be separate postsecondary goals. Independent living postsecondary goals are not required. However, it is recommended that independent living goals be considered for students who do not have age-appropriate independent living skills. *Given that students with autism have some of the poorest independent living outcomes among all students with disabilities, a thorough assessment of adaptive functioning is recommended to ensure the student has age-appropriate daily living skills.*

If areas of weakness are identified related to independent living, then it may be appropriate to develop independent living postsecondary goal(s). It is also important to keep in mind that independent living goals encompass more than simply where the student will reside after high school. In our experience with transition IEPs, when IEPs documented an independent living postsecondary goal (which was fairly uncommon), the goal primarily revolved around where the student will live (e.g., "After high school student will live with his mother in the immediate future and possibly a group home in the future.").

However, independent living goals can cover a wide variety of domains including leisure skills (e.g., community involvement), interpersonal skills (e.g., establishing friendship), self-care (e.g., hygiene, cooking, and cleaning), transportation (e.g., obtaining a driver's license and using public transportation), and more. Independent living postsecondary goals should not be limited to only where the student will

Table 3.3 Postsecondary goals as defined across domains of independent living

Independent living	Employment	Education/training
After high school, student will use public transportation (i.e., city bus or Wheels)	After high school, student will work in a job that involves cleaning, catering, cooking, or security	After high school, student will attend community college and obtain on the job training in culinary arts
After high school, for leisure, student will go to the movies and continue to participate in several sports teams	After high school, student will obtain a supported employment position working at least 20 hours a week	After high school, student will take courses in computer programming
The fall after graduation from high school, student will participate in at least one organization with students at his college	After high school, student will obtain an employment position within the STEM field	After high school, student will enroll in a 4-year college to obtain his Bachelor's degree in engineering

reside. All postsecondary goals *must* also be written in measurable terms and occur *after* high school (see Table 3.3 for examples of postsecondary goals developed for each domain).

Second, It Is Critical to Link and Connect IEP Goals to Postsecondary Goals

There should be at least one IEP goal to support each postsecondary goal. The key to this step is that there is a clear relationship between the postsecondary goal and the IEP goal. At times, there are measurable IEP goals and measurable postsecondary goals, but there is no connection between the two skills. One recommendation provided by Szidon et al. (2015) would be to research job qualifications or prerequisite skills for employment positions and identify potential gaps in the student's skills that the IEP goal can focus on to support the acquisition of the postsecondary goal. Although these are not the only critical features of writing effective transition IEPs for students with autism, it does highlight the importance of establishing the postsecondary goals as driving the development of the IEP.

What Are Some Ways We Can Use the IEP-Q-T?

There are multiple ways to use the IEP-Q-T. The IEP-Q-T measure was initially developed to monitor the effects of COMPASS. We expect COMPASS to result in better IEPs because the initial consultation prioritizes identification of goals that are more sensitive to the needs of students with autism by initially selecting a social skill goal, a communication goal, and a learning, work skill, or self-management goal. In addition, COMPASS ensures the identified goals in each domain are written in

measurable terms. The IEP-Q-T measure includes aspects of the IEP expected to change because of COMPASS. Therefore, researchers or practitioners can examine a student's IEP before COMPASS and after to assess whether necessary changes were made.

In addition, the IEP-Q-T measure can be used as a professional development tool to assess the quality of IEPs. The IEP-Q-T assists in identifying weaknesses with IEPs such as a lack of measurable goals or lack of social, communication, or work skill objectives. In addition, the IEP-Q-T areas of improved postsecondary planning such as a need for measurable goals or descriptions of transition services related to employment, education/training, or independent living skills. Identified weaknesses inform professional development efforts to improve IEPs.

The promise of a seamless hand-off from school to post school activities is far from being reached. However, with new and innovative approaches such as COMPASS for transition youth, it is possible to bridge the gap between high school and adulthood.

Appendix

Download print-ready, use-ready
Versions of many helpful forms at
https://compassforautism.org/blank-forms/

IEP Evaluation Form

Student's Name: _____ DOB/Age:_____
Reviewer's Name: _____Date of IEP:_____

Instructions: The evaluation form has two major parts, A and B. Part A evaluates the IEP as a whole. Part B is concerned with specific goals or objectives. The goal is the broad domain; the objective is the specific skill that is targeted under the goal. It is recommended that the entire IEP be reviewed before it is scored.

Part A: Analysis of Overall IEP

Directions: Determine if the following education performance areas are described as an area of need (if the area is checked, but no description is provided, mark "no"; if any kind of description is provided, mark "yes").

Area	No	Yes
1. Communication status		
2. Academic performance		
3. Health, vision, hearing, motor abilities		
4. Social and emotional status		
5. General intelligence (cognitive)		
6. Overall quality of description of student's performance relative to the general curriculum or developmental status is clear enough to establish well-written goals for the student. Code "no" if there is no reference to grade, age, or developmental equivalents/performance.		

Comments:

Review of Related Services

Instructions: If related services are provided, indicate "yes" and the amount of time the service is provided per week.

	No	Yes	Time of week
7. Speech therapy			
8. Occupational therapy			
9. Physical therapy			
10. Other:			

Instructions: Review the overall IEP and determine to what degree each indicator is provided. Use the Likert scale that ranges from 0 ("no or not at all") to 2 ("very much/clearly evident"). "Not applicable" is NA.

Indicator (examples of the IEP objectives for items 6–13 are provided at the end of this IEP Evaluation Form)	NA	0	1	2
11. Annual goals include goals from the COMPASS consultation.				
12. Parental concerns are described (code "2" if *any* concerns are listed).				
13. Includes goals/objectives for social skills to improve involvement in school and family activities (i.e., social objective is targeted for improved functioning in school/or family life). Must have more than 1 objective to code "2." ***				
14. Includes goals/objectives for expressive, receptive, and nonverbal communication skills (code "NA" if *communication* is not listed as an area of need in present levels of performance, code "0" if communication is listed as area of need but there are no communication goals/objectives, code "1" if there is only one goal for receptive and expressive language, code "2" if there are goals for both receptive and expressive language). ***				
15. Includes goals/objectives for symbolic functional communication system (PECS, assistive technology, etc.). Code as "NA" if student shows evidence of conversational speech in the present levels of performance. When augmentative/alternative communication (ACC) isn't an objective but listed as a support for objectives, code as "1." ***				
16. Includes goals/objectives for engagement in tasks or play that are developmentally appropriate (must emphasize a focus on developmental skills such as attending, sitting in circle, taking turns, etc., rather than academic), including an appropriate motivational system (code "1" if developmentally appropriate but no motivation system is described).				
17. Includes goals/objectives for fine and gross motor skills to be utilized when engaging in age appropriate activities. Must have more than one objective to code "2."				
18. Includes goals/objectives for basic cognitive and academic thinking skills (sorting, letters, numbers, reading, etc.). Must have more than one objective to code "2."				

Indicator (examples of the IEP objectives for items 6–13 are provided at the end of this IEP Evaluation Form)	NA	0	1	2
19. Includes goals/objectives for replacement of problem behaviors with appropriate behaviors (evidence is provided that the skill is designed to replace a problem behavior). Must have more than one objective to code "2."				
20. Includes goals/objectives for organizational skills and other behaviors that underlie success in a general education classroom (independently completing a task, following instructions, asking for help, etc.). Must have more than one objective to code "2." ***				
21. Objectives are individualized and adapted from the state academic content standards (i.e., goals are assumed to be the academic content standard). Code "2" if most are individualized but some are not; code "1" if some are individualized, but most are not.				

*** Denotes targeted indicators that are expected to change as a result of COMPASS consultation

22. Number of goals in the IEP: _____
23. Number of objectives in the IEP: _____
24. Is the need for extended school year addressed? θ Yes θ No
25. Is extended school year recommended as a service? θ Yes θ No θ Not Addressed

Part B: Analysis of Specific IEP Objectives

Note: This form is used for rating one objective. Copy it to use with multiple COMPASS objectives and/or with as many objectives as desired.
Objective: _____
IEP goal No. and page No. on the IEP:_____ No. of objectives under goal:_____
Type of Objective (select from options below):_____
0 = Academic 1 = Social 2 = Communication 3 = Learning/Work Skills 4 = Motor/Sensory 5 = Self-help 6 = Behavior
Instructions: Code each objective (not goal). Use the following Likert scale that ranges from 0 ("no or not at all") to 2 ("very much/clearly evident"). "Not applicable" is NA.

Indicator	NA	0	1	2
26. The student's present level of performance is described for this objective (don't rate quality here). If a simple description like one sentence is given, code "2."				
27. The student's performance of this objective (in summary of present levels of performance) is described in a manner that links it *specifically* to the **general** curriculum.				
28. The student's performance of this objective (in summary of present levels of performance) is described in a manner that links it *specifically* to **developmental** curriculum.				

Indicator	NA	0	1	2
29. This objective is able to be measured in behavioral terms. Code "1" if it can be observed, code "2" if the description of target behavior is clear for proper measurement of goal achievement through observation.***				
30. The conditions under which the behavior is to occur are provided, i.e., when, where, with whom.***				
31. The criterion for goal acquisition is described, i.e., rate, frequency, percentage, latency, duration, as well as a timeline for goal attainment is described specifically for objective (other than for length of IEP).***				
32. A method of goal measurement is described. Code "1" if method of measurement is just checked according to a preset list and not individualized specific to objective.				
33. Is Specially Designed Instruction individualized to the objective? (Code "0" if there is no SDI specified, code "1" if SDI is checked off but not specifically designed for that objective, code "2" for individualized SDI).				

Note: Item with *** is a targeted indicator expected to change because of COMPASS consultation

Review of Transition-Related Services

Instructions: If related services are provided, indicate "yes" and the amount of time the service is provided per week.

	No	Yes	Time of Week
1. Vocational rehabilitation services			
2. Services coordination			
3. Work-based learning experiences			
4. Job exploration counseling			
5. Counseling on postsecondary educational opportunities			
6. Workplace readiness training to develop social skills and independent living skills			
7. Instruction on self-advocacy			

Adapted Indicator 13

Instructions: Review the IEP and determine if each indicator is present or not. Score each item as "0" (not present) or "1" (present). If there is not an education/training or employment postsecondary goal present, provide scores of "0" for all items. If there is not an independent living postsecondary goal, score "0" for item 1 and then record "N/A" for "Not applicable" for all remaining items.

Questions	Postsecondary goals		
	Education/Training	Employment	Independent Living
1. Is this domain included in the postsecondary goal(s)? **CODE:** 1: yes 0: No			
2. Is it a separate goal? **CODE:** 1: yes 0: No			
3. Is there an appropriate measurable postsecondary goal or goals in this area? (Aligns with item 1 on NSTTAC Indicator 13) **CODE:** 1: If the goal occurs after high school and is specific and measurable 0: If the goal does not occur after high school AND/OR lacks specificity/measurability			
4. Is (are) the postsecondary goal(s) updated annually? (Aligns with item 2 on NSTTAC Indicator 13) **CODE:** 1: Yes, If the postsecondary goal(s) was (were) updated with the current IEP 0: No; If the postsecondary goal(s) was (were) NOT updated with the current IEP			
5. Is there evidence that the measurable postsecondary goal(s) were based on age appropriate transition assessment? (Aligns with item 3 on NSTTAC Indicator 13) **CODE:** 1: IF BOTH statement of student interested and ability is present and separate transition assessments conducted per domain included in the postsecondary goal 0: If missing either statement of student interest/ability AND/OR appropriate number of assessments			

Questions	Postsecondary goals		
	Education/Training	Employment	Independent Living
6. Are there transition services in the IEP that will reasonably enable the student to meet his or her postsecondary goal(s)? (Aligns with item 4 on NSTTAC Indicator 13) **CODE:** 1: There is alignment between postsecondary goal domain and transition service (see below for examples) 0: No transition services listed; lack of alignment between postsecondary goal domain and transition service			
7. Do the transition services include courses of study that will reasonably enable the student to meet his or her postsecondary goal(s)? (Aligns with item 5 on NSTTAC Indicator 13) **CODE:** 1: Courses explicitly listed 0: Course of study not included			
8. Are there any transition services needs identified? *For this question transition needs can be identified that are not reflected in the postsecondary goals. **CODE:** 1: needs identified 0: needs not identified			
9. Is (are) there measurable annual IEP goal(s) related to the student's transition services needs? (Aligns with item 6 on NSTTAC Indicator 13) **CODE:** 1: Yes 0: No			
10. Is (are) there postsecondary goal(s) related to the student's IEP goal(s)? **CODE:** 1: If relationship is explicit 0: If relationship between postsecondary goal and IEP goals are vague			

Questions	Postsecondary goals		
	Education/Training	Employment	Independent Living
11. Is there evidence that the student was invited to the IEP Team meeting where transition services were discussed? (Aligns with item 7 on NSTTAC Indicator 13) **CODE:** 1: If student was listed in attendance or invited 0: If student is not mentioned			
12. If appropriate, is there evidence that a representative of any participating agency was invited to the IEP Team meeting with the prior consent of the parent or student who has reached the age of majority? (Aligns with item 8 on NSTTAC Indicator 13) **CODE:** 1: If participating agency was listed in attendance or invited 0: If participating agency is not mentioned			

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Part II
Replications, Adaptations, and New Findings

Chapter 4
Adapting COMPASS in Australia

Abigail M. A. Love and Ru Ying Cai

Overview This chapter discusses the replication of COMPASS within an autism-specific school environment in New South Wales, Australia.

The following comments are direct quotes from teachers who were discussing the challenges around individualized goal setting for students on the autism spectrum for teachers in Australia.

> I think because [goal setting] is done at the beginning of the year, it makes it quite challenging because if you're a new teacher with that student, you're still learning about that student.
>
> I guess sometimes having meaningful assessments can be a bit of a challenge sometimes in terms of really pinpointing the goals that you need to prioritize or the areas you need to prioritize. What can be a challenge, too, is the roll on year-on-year. So sometimes you feel like the students are kind of caught in this cycle of a new teacher comes in and they make their goal. And then by the end of the year, it could have been achieved or could have been really clear progress, but then the next teacher comes in and it's maybe a resetting or else there's not a resetting and they're kind of on this never-ending cycle of the same goal, which is slightly modified.
>
> I think the goal setting is important, but I think…Like from doing this, I think definitely doing it in collaboration with others is the important part. Not individually, setting goals or…setting goals just based on data you've collected on their assessments and things like that. I think…It's that collaborative approach to goal setting that's really important.
>
> Another challenge may be in terms of like parental input or consistency with the goal being addressed at home as well. Because sometimes that's a factor that feels out of your control a little bit. And if it's a broader life skill goal, it can be harder to see progress in it if it's only happening consistently in one setting or environment.

In this chapter, we describe the adaptation of COMPASS for an autism-specific school environment in Australia. The above quotes portray some of the challenges and frustrations that teachers face when trying to write and measure meaningful individualized goals for students on the autism spectrum. The quotes come from

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_4

discussions with teachers and autism consultants, where goal writing challenges ranged from assessment, collaboration, to struggling to find meaningful goals that can be taught in a range of environments. While teachers agree that individualized goals are critical to student success, there is a general consensus that this process is extremely challenging and causes stress and anxiety.

Individualized goal setting and accommodations (or reasonable adjustments) in consultation with the caregivers are required under the 2005 Disability Standards for Education (Commonwealth of Australia, 2006). For students with a diagnosed disability, schools are required to ensure that reasonable adjustments are made to support a student's participation in a course, program, or use of facilities or services (Carter et al., 2022). This results in an individualized plan. The Nationally Consistent Collection of Data requires schools to report evidence of the adjustments made, of the consultation with caregivers and students, and evidence of monitoring and review of the impact of the adjustments (Australian Government, 2020).

Despite the requirement for reasonable adjustments being mandated, the process for creating individualized goals is not nationally mandated or standardized, and teachers acknowledge the challenge of ensuring this process results in meaningful learning for their students. This process varies drastically among systems and sectors. Individualized strategies and supports are one of the key characteristics of effective school programs for students on the autism spectrum (Roberts & Webster, 2022). *Therefore, finding a standardized intervention to support teachers, families, students, and other stakeholders in the process of developing meaningful outcomes and linked teaching plans can be a way to increase teacher self-efficacy and improve student outcomes.*

ARCAP Research Team

The Aspect Centre for Autism Research (ARCAP) consists of multidisciplinary researchers working together to supply evidence that supports individuals on the autism spectrum and their families/caregivers. The research team works as a division of Autism Spectrum Australia (Aspect), a large, nonprofit autism-specific service provider delivering person-centered, family-focused, and customer-driven service and care. Services include employment support, therapy, assessment, and education. This study took place within Aspect schools, which are autism-specific learning environments across Australia. Aspect currently has nine independent schools across Australia and 113 satellite classes in mainstream settings, serving 1185 students across the age group on the autism spectrum each year. The organization is the largest education provider for students on the autism spectrum in Australia.

Research Collaborations The adaptation of COMPASS at Aspect resulted from organic meetings with teachers and school consultants who desired a more standardized and efficient way to set and measure individualized goals for their students

on the autism spectrum. The education team that partnered with ARCAP wanted to evaluate their current individualized planning process to reduce teacher stress, improve consistency, and increase student outcomes. The individualized planning process was included in the school's improvement plans, and education staff approached ARCAP to understand how research-supported practices for individualized goal setting for students could be introduced alongside an evaluation of the current approach for setting goals in the programs.

Through collaborative discussions with education leaders, we decided to embark on a randomized control trial of COMPASS. We knew that current evidence of COMPASS was based on data gathered from schools in the United States and queried whether this intervention would be effective irrespective of country and educational context. We were especially curious about how the intervention would support teachers that already were working at an autism-specific school and held autism-specific expertise. One requirement of COMPASS is that consultants possess consultation skills as well as knowledge about autism spectrum disorder and developmental disabilities. However, all teachers at Aspect schools are required to possess this knowledge, so it was unclear whether COMPASS would result in a noticeable change, when compared to services as normal.

In addition, the staff structure at Aspect schools includes internal consultants who are considered experts and leaders, which allowed for the natural adoption of the COMPASS model. The consultants are called "school coordinators," and their key responsibilities include collaboration with the principal and leadership team, direct coaching and supervision to teachers and other staff members, and support of individual student needs. We hypothesized that the intervention would bring a standardized process that was more efficient and more consistent than the current processes at Aspect, inevitably bringing about more student progress of individualized goals. From this study, we hoped to understand how to improve the currently applied Aspect individualized planning process while learning more about the ability of COMPASS to be adapted here in Australia to enhance student outcomes.

Australian Context In Australia, two-thirds of all students attend public or governmental schools, while the remaining students attend private schools, which are either Catholic or independent schools (Gurr, 2020). Additionally, schools are separated into mainstream and specialist settings, which are specifically designed environments for students that meet special education criteria. According to the Australian Bureau of Statistics (ABS), in 2018, 40.8% of students with an autism diagnosis attended a special school or classroom (ABS, 2018). While Australian leaders have promoted inclusive education following the publication of the Salamanca Statement in 1994, parallel educational environments for students with disabilities still exist as an alternative option for families. Aspect schools are considered independent, nonreligious schools, and only cater to students with an autism spectrum diagnosis.

Participatory Research and Positionalities of Researchers The research team consisted of autism researchers who have been active in all stages of the research

life cycle, including recruitment, data collection, and analyses. Initially, consultation with autistic team members was gathered to determine the design of the project. With their involvement, autism researchers also participate in manuscript writing and interpretation of results, and their input was critical to the study. The lead researcher is a previous teacher of autistic students and has a sibling on the autism spectrum. Additionally, a research team member is a parent of a child with autism.

The expectation that the intervention and research team included input from people with lived experience with autism has become a critical design component of Aspect research for ensuring validity and alignment with community perspectives (Hollin & Pearce, 2019; Pellicano & den Houting, 2022). Therefore, this research project utilized a community-based participatory research (CBPR) approach to create knowledge user-research collaborations throughout the research cycle. CBPR is a collaborative research method and an "umbrella term" for approaches that aim to equitably involve community partners in the full research process (Minkler & Wallerstein, 2003). We aimed to engage the users of the module (teachers and consultants) and those with whom the module is ultimately meant to benefit (autistic students and their families) into the design. Figure 4.1 demonstrates the process used at ARCAP to ensure research is translated into practice and encourages continuous co-production by autistic community members. This project began from the ongoing consultation with the Aspect education team, and the research findings will be used to improve the comprehensive approach across all services at Aspect. Additionally, our team had sustainability of research findings in mind, that is, to use the results of this study to understand how improved practices around individualized planning could be continued at Aspect. Regardless of the results, our research team was committed to working with the Aspect community to ensure that the research evidence (e.g., areas for improvement) was sustainably translated into practice.

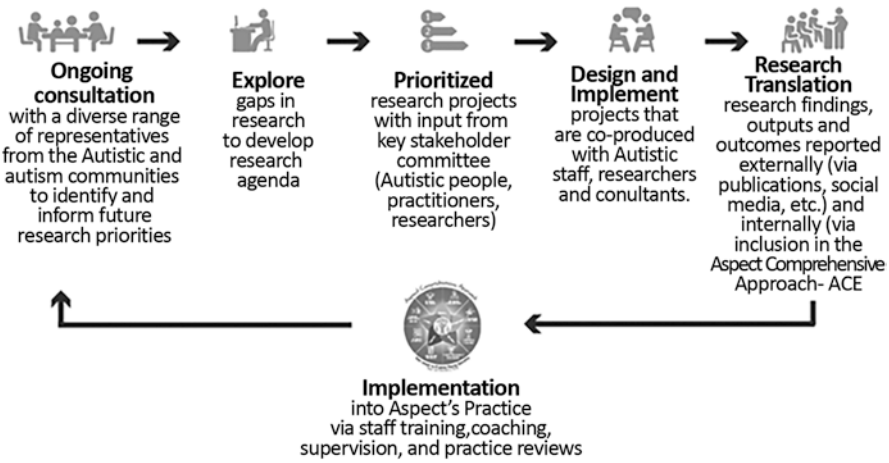


Fig. 4.1 Aspect research to practice approach

Services as Usual Group

As this study was planned as a randomized control trial, a nonintervention, services-as-usual comparison group was needed. The comparison group for this study consisted of consultants, teachers, and parents/caregivers who were continuing with the individual planning policy and procedures already set up at Aspect. Similar to the United States, an individualized plan (IP) is often used to highlight the student's learning style and identify the best accommodations needed to support their learning. Again, similarly, an IP is created with a student's team that includes the student, their parents, and key stakeholders. Different from the United States, the structure, design, and presentation of IPs vary greatly across all teachers, schools, sectors, and states. Aspect has continually reviewed its IP model. The model includes the student's goal (usually 2–3 goals per student), an action plan, a data collection tool, and places to note an annual review (see Fig. 4.2).

Aspect IPs are purposefully focused on individual student's strengths and interests and are derived from a short meeting with the caregivers, student, and other stakeholders. The IP policy and procedures come from the Aspect Comprehensive Approach, an evidence-informed practice utilized across Aspect services. For the study, this control group received their services as usual throughout the study and participated in regular data collection which included sharing of IP goals and progress throughout the year.

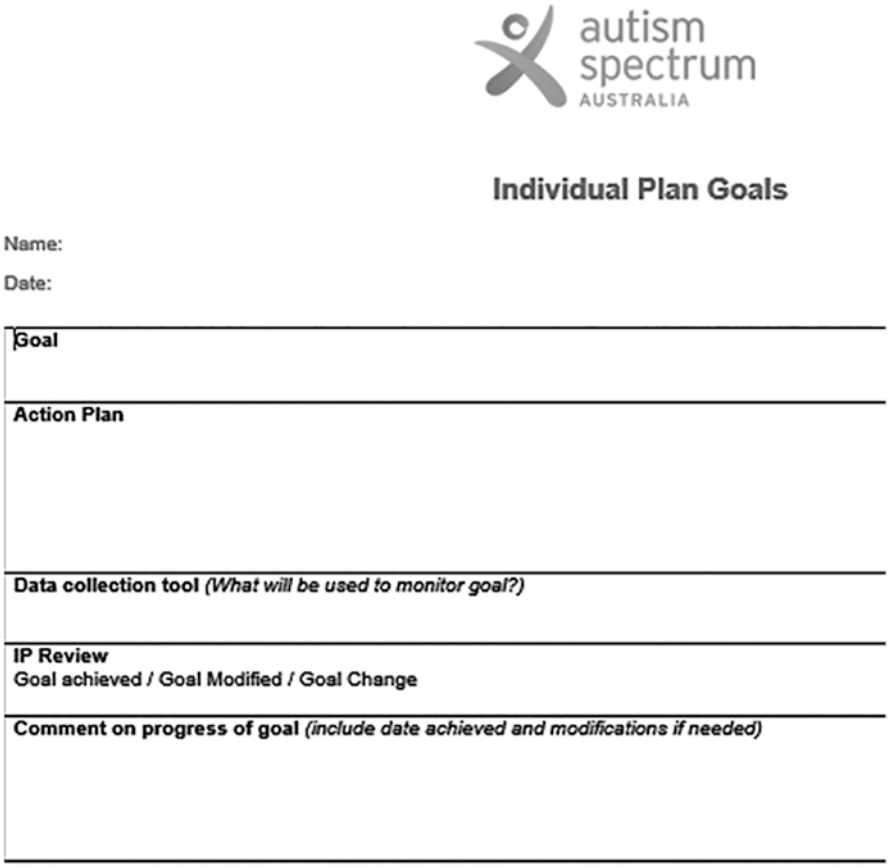
Purpose of the Study

The purpose of this study was to adapt COMPASS in an Australian context and to explore the application of COMPASS in a setting exclusively for students on the autism spectrum. We wanted to understand how students who participated in COMPASS would progress across a school year compared to a group of students who received services as usual. The primary research question was as follows: *Do teacher-child pairs who participate in COMPASS have better IP goal attainment for targeted objectives than teacher-child dyads who do not participate in COMPASS?*

Differences and Modifications

This study had noticeable differences from the previously published work by Ruble et al. (2010, 2013, 2018). To increase understanding of how this work was replicated and adapted, we have outlined the differences between the current study design and previous COMPASS randomized controlled trials (see Table 4.1).

Modifications In order to consider the context of the study, a number of intervention modifications were applied to COMPASS (see Table 4.2). To identify the


autism spectrum AUSTRALIA

Individual Plan Goals

Name:

Date:

Goal
Action Plan
Data collection tool ***(What will be used to monitor goal?)***
IP Review **Goal achieved / Goal Modified / Goal Change**
Comment on progress of goal ***(include date achieved and modifications if needed)***

Fig. 4.2 Aspect's individualized learning plan

modifiable areas, the COMPASS materials were reviewed in detail by a team of educational professionals, an autism research assistant, and the research team before the study began. Individuals reviewed the materials independently, and then Zoom meetings were held to discuss modifications. Additional modifications were made throughout the study due to COVID-19. In New South Wales, where the schools in this study were located, a period of predominate home learning took place between 23rd March and 25th May 2020. Students that were able to participate in home learning attended school onsite; however, there were substantial changes to staffing and programs. Because of these home learning periods and travel restrictions in Australia, the majority of consultation and coaching meetings were conducted virtually through Zoom. Teams met onsite when possible, but parents regularly needed to support their students at home and usually attended meetings virtually. The research team met with the COMPASS consultants in-person for one training day in

Table 4.1 Differences between previously published COMPASS work and the current study

Study characteristic	Previous trials of COMPASS	Current study
Educational setting	US public mainstream school, inclusive preschool, and segregated preschool[1, 2] US public mainstream school[3]	Australian independent autism-specific school
Sample size	35 students[1] 49 students[2] 20 students[3]	40 students
Consultant role	Researchers as consultants[1, 2, 3]	Internal community consultant (termed a school coordinator)
Student age	Mean age of 6.1 years, SD = 1.7, range 3–8 years[1] Mean age of 6 years, SD = 1.6, range 3–9 years[2] Mean age of 18.2 years, SD = 1.1, range 17–20 years[3]	Mean age of 9.3, SD = 3.2, range 5–18 years
Co-production	N/A	Autistic research assistants, consultation with team of autistic advisors
Teacher and consultant experience	Teachers worked in range of roles. Consultants were external autism consultants, considered experts in autism[1, 2, 3]	All teachers and school coordinators (consultants) at aspect receive regular professional development on evidence-based practice for teaching autism and all are considered experts in autism

Note. [1]Ruble et al. (2010), [2]Ruble et al. (2013), [3]Ruble et al. (2018)

January 2021, but all other interactions were over the phone or virtual. In reflection, the research team and study participants did not feel that these modifications had a negative impact on the study beyond the added stress that was consistent across all families during the period of home learning and throughout the pandemic.

The language was changed on all forms and documents used by participants to reflect Australian language and spelling (e.g., behavior to behaviour). Additionally, COMPASS consultants were called "coordinators" within Aspect schools, so this language was modified to avoid confusion. For this chapter, "consultant" is used to align with the book's other chapters. Other changes were made to align the COMPASS forms with Aspect's language policy where possible. Throughout all Aspect services, including Aspect schools, language must be "respectful, person-centered, strengths-based, and skill development focused." For example, any time the word "concern" was used to describe priority areas for parents or teachers, it was changed to strength-based language so that it read "priority areas" or "building on strengths" with an aim to build empathy and understanding with the student's team around the behavior of concern.

Table 4.2 Adaptations for COMPASS in Australia

COMPASS characteristic	Current study
Training and coaching aspect consultants in COMPASS	
Consultant and coaching training	One virtual session due to COVID-19 lockdowns, an additional in-person session No homework required for consultants to complete prior to training first session Virtual training platform (canvas) was used informally so that consultants could review materials, literature, and case studies however, the homework modules were not compulsory Time spent getting buy-in from the aspect education department for the importance of a research study Reduced content related to background slides of COMPASS Kept the training practical, reduced other information to decrease burnout Added an "I do, we do, you do" component for practicing writing GAS goals Removed teacher resistance slides
Consultant supervision	Instead of scheduling separate meetings with each consultant for consultation supervision, performance feedback was given immediately after the consultations by a member of the research team to the consultant informally, in real time
Changes to the COMPASS intervention	
Coaching forms	Combined interview and coaching summary to reduce workload
COMPASS profile	Changes were requested to the language within the COMPASS profile to align it with best practices at aspect schools. For example, "temper tantrum" was changed to "meltdown." additionally, aspect schools do not label behaviors as problematic behaviors, a term that was used repetitively in the COMPASS profile. However, no formal changes were made to the COMPASS profile because we used the US version that was in a fixed format and accessed electronically, but changes were recommended to the COMPASS research team
Progress monitoring	Due to COVID-19 restrictions and increased home learning during the year the study took place, it was important to diversify ways that the COMPASS team could collect individualized plan (IP) goal performance data. To monitor progress, we used videos or pictures submitted by parents or teachers, student self-monitoring data, work samples, and staff observational data
GAS observational data	We added a GAS observational data document to increase the observational data on student's GAS IP goals and to ensure that parents, teacher's assistants, therapists, students, or consultants could make observational notes across settings on student's GAS progress. This modification was needed as well due to many teachers working in co-teaching models and needed to ensure that observational data could come from both teachers. See Fig. 4.3
Other	
Delivery format	Due to parent preference and challenges associated with COVID-19, this study was conducted with a mix of virtual (zoom) and in-person (face-to-face) sessions
Accessibility statements	Throughout all forms and documentations, an inclusivity statement was added to increase accessibility: "If you find the meeting or documentation difficult to understand, please let me know so we can discuss options for meeting and sharing information"

XX Goal Attainment Scale (GAS)

Communication

-2 Present level of performance	-1 Progress	0 Expected level of outcome (GOAL)	+1 Somewhat more than expected	+2 Much more than expected

Date	Initials	Observation

Fig. 4.3 Revised GAS observational data recording template

Recruitment

This study was planned intentionally to coincide with Australia's school year, which matches the calendar year and begins in late January and ends in mid-December. The school year is divided into four terms that run for approximately 10 weeks, with 2 weeks of break in between each term. We aimed to recruit participants at the end of 2020 and the start of 2021. In order to keep our intervention and control group in parallel, we needed to make sure our COMPASS consultants were trained in COMPASS consultation by the same time the control group consultants and teachers were hosting their individualized planning meetings (which happens in Term 1). Schools (and associated school principals) were recruited first to ensure administrator buy-in. This was a critical step for the study because administrator buy-in ensured that the teachers and consultants would have ample time to complete the research activities in addition to their regular teaching activities. After gaining support from administrators, consultants were recruited and randomized. From there, we asked consultants to identify teachers. Teachers were given the opportunity to join the study and recommended parents/caregivers who would be interested in having their child participate in this research study. Parents/caregivers had the opportunity to hear about the study and consent to sharing their child's data. Training for COMPASS consultants began in January 2021, and IP meetings began in March 2021.

Participants

We used a randomized-controlled methodology to trial COMPASS with 91 participants (see Fig. 4.4). This included two groups (an intervention group and a control group) across three participant categories: consultants (n = 15), teachers (n = 36), and students (n = 40).

Consultants (M_{age} = 43.8 years, SD_{age} = 6.2) had been in a consulting role for an average of 6.9 years (SD = 4.4). Teachers (M_{age} = 41.0 years, SD_{age} = 9.9) had been teaching for a mean of 15.4 years (SD = 9.9). Students were formally diagnosed with autism and ranged in age from 5 to 18 years (M_{age} = 9.3, SD_{age} = 3.2). Further demographic data (e.g., autism severity for students, autism training for teachers and consultants, etc.) were collected. Goal attainment scaling was used to analyze progress on IP goals for each student along with a range of fidelity, adherence, satisfaction, and attitude measures. Data were collected across four primary time points during the 2021 school year (see Fig. 4.5).

Results: Student Progress

Students were measured on their progress made on their individualized goals across a school year. All students in the study began at baseline (−2 on the GAS). At each coaching session (COMPASS participants) or IP meeting (Aspect participants), progress on the individualized goals was decided jointly by the teacher and

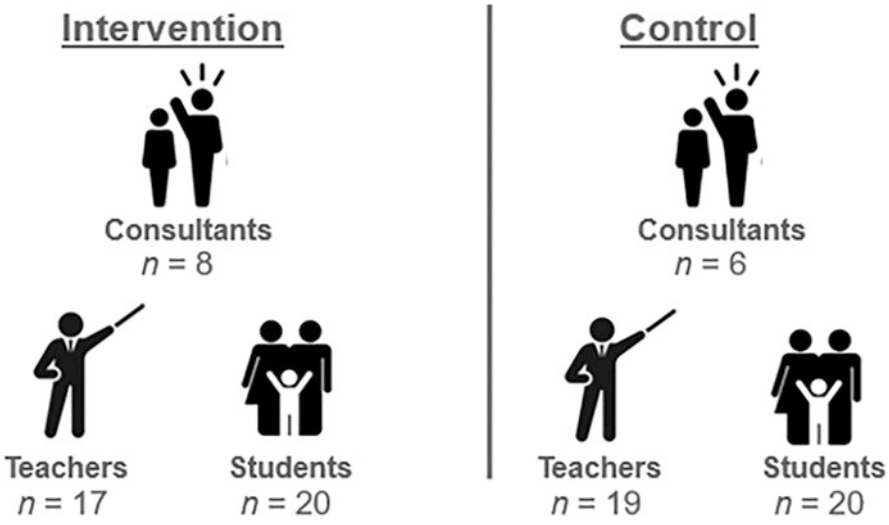


Fig. 4.4 Study participants broken into two groups—an intervention COMPASS group and a control services as usual group

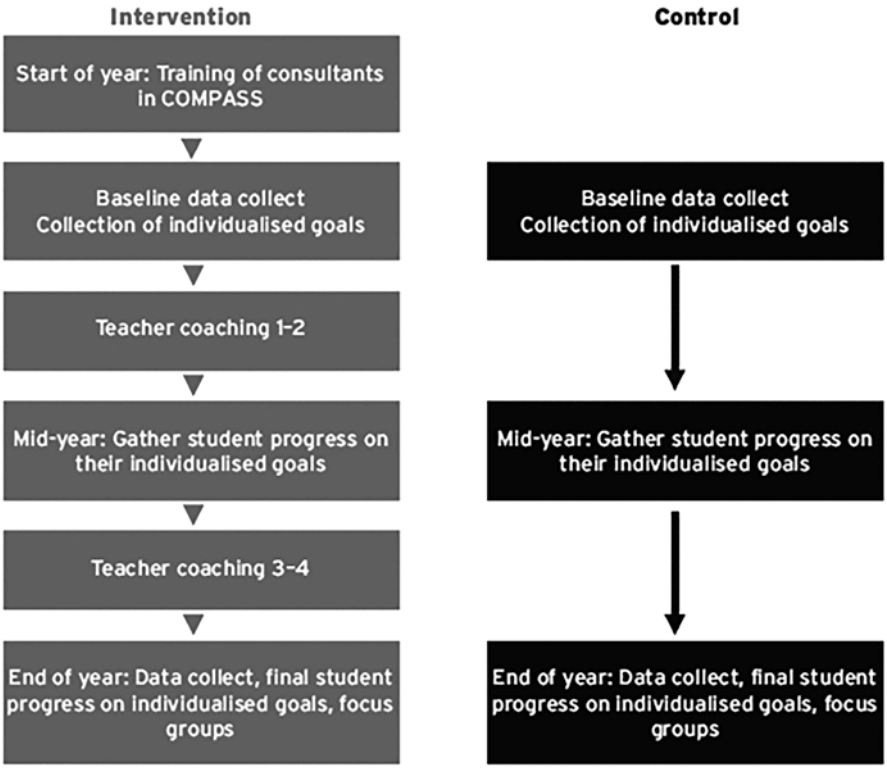


Fig. 4.5 Research design

coordinator. At times, parents and students also participated in the coaching sessions. Data in the form of videos, observational field notes, and work samples were used to make this determination. An independent rater who was blind to participant groups scored all students' final GAS goals based on a detailed teacher interview after establishing inter-rater reliability with two members of the research team. Using these final scores, students in the COMPASS group showed significantly more progress on average than students in the control group ($t(39) = -9.37$, $p < 0.001$, $d = 0.65$). Figure 4.6 shows that the COMPASS students ended the year with a mean score of 1.01 (SD = 0.64) across all IP goals, and the control group demonstrated a mean score of −0.91 (SD = 0.66). Additionally, in the COMPASS group, 75% of the students met their stated goal at 0 level or higher. In the control group, 50% of the students met their stated goal at 0 level or higher. Students in the COMPASS group also received higher ratings of goal quality, based on three indictors compared to the Aspect control group.

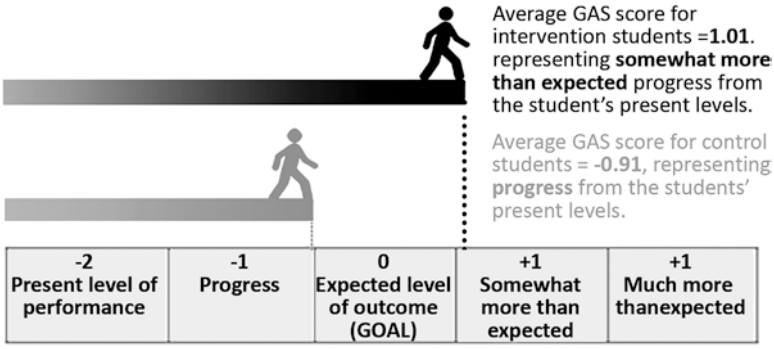


Fig. 4.6 Student outcome results

Participant Satisfaction with COMPASS

Teachers in the COMPASS group reported a mean satisfaction score of 3.1 (out of 4; 1 "not at all" to 4 "very much" with higher scores as better) on 18 satisfaction-related questions, and consultants reported a mean satisfaction score of 2.8. Both participant groups were most satisfied with (a) the goal attainment scale and the way they were taught to measure goals (M = 3.67), (b) the assessment form used by parents and teachers before the first IP meeting (M = 3.40), and (c) the quality of the goals identified by the process for each student (M = 3.40). They were least satisfied with burdens related to time and resources (M = 2.33). Parents in the study reported a mean satisfaction score of 3.2 (out of 4) and were most satisfied with how the process allowed them to know about their child's progress (M = 3.43) and what strategies were being used to teach their child (M = 3.43).

Fidelity of COMPASS Implementation

Fidelity was gathered on the initial consultation with the COMPASS fidelity checklist that detailed the components of a COMPASS consultation and confirmed that the components were implemented. Participants answered "yes" or "no" to questions about each component of the consultation. Although consultants, teachers, and parents were given the opportunity to complete fidelity documents after these consultations, fidelity data were reported only directly from researcher scores to increase consistency. It was observed that the teacher, consultant, and parent data consisted of "yes" answers 99% of the time. Researcher fidelity was gathered from direct observations when a researcher was in the consultation, or by a review of the video and audio recording of the meeting. In reviewing researcher fidelity from the COMPASS consultants, results demonstrated high fidelity (84.4%), which shows evidence that community consultants can be trained in COMPASS with high

fidelity. We believe that the difference between the ratings obtained from the teacher, consultant, and parent was much higher than those from the researchers due to overload in paperwork, stress from COVID-19, and meeting exhaustion, as the fidelity documents were given to participants directly after the sessions.

Benefits of COMPASS

Responding during interviews and using written open-response questionnaires, participants identified areas that they found most beneficial when reflecting on the COMPASS process. They recommended elements that should be incorporated in Aspect practice in the future. The four main areas identified were: (a) helping teaching staff to better understand students via the COMPASS profile (especially for students not previously known to the teacher); (b) allowing teaching staff to develop better goals; (c) providing a standardized process to track goals; and (d) enabling greater teacher-parent collaboration.

COMPASS profile There was overwhelming support for the *COMPASS profile* (also called the Joint Summary Form), which was the primary way families and teachers provided input on student strengths and challenges before the first IP meeting.

> I've worked for Aspect for a long time, and this is probably the best information gathering process that I've ever done from families at the beginning. I thought that was a really great process. And the fact that we both filled out the same questions was immensely important. (teacher)
>
> Using the joint summary form gave me a way to see my data right next to the data of a parent or family member. This meant our discussions were really objective, and pulled everything together onto one data sheet instead of the time consuming assessments we currently use. (teacher)
>
> What I really liked about COMPASS was the joint summary survey that we completed at the beginning. It was very good to see my responses with the parent responses to see where we thought the similarities and where we had seen the weaknesses, but it was also good to see because we're not with them at home, it's good to see what they're like in the home environment too. So, I actually quite liked that because it was one form. Usually, at the beginning of the year, when we do IPs, we send home multiple documents to families. They're all paper-based and we never get them back. So being electronic version was really good. So I actually quite liked that. (teacher)
>
> I think you have to really look at the difference in terms of engagement for parents. I think COMPASS is so much better. Like…And I actually think…Doing the questionnaire at the beginning, as uncomfortable as it was in a little way, is really empowering for the parents. And also, I think it's straightaway…Starts you up at the start of the year in a good way. You've had that meeting with the parents, you're engaging ideas, your kind of, setting up for the year that way….I know it's time-consuming, but it's time well spent. (teacher)

Goal Development and Tracking The next most common piece of feedback was around *GAS* or *goal attainment scaling*. This was the single most appreciated component of COMPASS when comparing teachers and consultant feedback.

> And I think the GAS, I think that's a valuable thing if we could somehow incorporate that into our process because it just keeps you thinking about the goals and what is before and what is next. Even when I tweaked one of those goals, I could still see how it fitted into the sequence, where it was heading with it all. (teacher)
>
> I did quite like the GAS form. It was very good to see thinking about what the student would be like if they weren't doing the goal at all, and then one up from that and then achieving that goal and looking at it that way. It was very good because I'm quite a visual person, so just to see that and break out what you're expecting. It's very good to see if whether they're working towards their goal quite well. So I did quite like that form. (teacher)
>
> Goals done as the GAS are more informative and show different levels of the skills within the goal (building of skills- how to extend the skill). Coaching with the teachers using the GAS template gave more accurate feedback to goals as you were able to view the scale as well as evidence provided whether it was anecdotal or video than just data/checklist. (consultant)
>
> I also liked that I feel like I could teach a teacher really well on how to use, create and implement the GAS form. And then I think that could be across school wide, where it takes a bit of time to understand and get it right, but you really could support, I feel like we could support staff to do that. So it's a really nice, consistent way of measuring goals. (consultant)

Teacher-Parent Collaboration Throughout the feedback, coordinators, teachers, and parents commented on the increased c*ollaboration* between parents and teachers.

> [Throughout the COMPASS process,] there was adequate consultation and discussion with parents and [learning support team] regarding the goals. There was also a big effort to include students where possible. (consultant)
>
> I think it is important to have parents' input into the joint summary profile, it is more collaborative than receiving an IP prior to a meeting. It shows a comparison for home and school. I found that we discovered information we weren't aware of by having the joint summary and going through within the meeting. (consultant)
>
> The meetings worked well to get really specific on what [my child] needed help with and how to improve on these areas…My input was included in more ways than ever before. (parent)

Desire to Continue Using COMPASS In final reflections, participants reported their desire to see COMPASS *implemented* beyond the research project. Participants felt that the time involved in the consultation and coaching sessions across the school year resulted in better student growth and accountability, as well as reduced workload. However, findings were mixed, when participants considered extending COMPASS beyond one or two students. It did not appear feasible to participants as a schoolwide model, despite the recognized benefits.

> I quite enjoyed the COMPASS experience, and it will be exciting to see it implemented in the future for us. But yeah, maybe just some changes, because keeping in mind we are quite time poor as it is, and then to track goals and then have meetings and things might not be as easy. (teacher)
>
> I liked the fact that it was more accountable for staff, that was probably the biggest thing. (consultant)

As a qualified teacher and Autistic researcher, I have seen large improvements in the ability of participants to set meaningful, achievable and measurable goals. The goals set throughout the process have more closely aligned with the needs and interests of the students, their families and the teachers. It has been wonderful to see student voice included in the goal setting process where possible. (teacher and researcher)

I feel that the COMPASS process really empowers parents. I have really enjoyed learning and working with families and [my student's team] in a collaborative and ongoing process to support our student's strengths and needs. I feel that this process has helped to strengthen my understanding and the relationships I have formed with families and colleagues. (teacher)

Case Study

One interesting finding of this study was the clear difference between the quality of goals in the COMPASS group compared to the services as usual group. In fact, when comparing IP quality data across the school year and across all student goals, the COMPASS intervention group (M = 1.62, SD = 0.69) had higher quality IP goals compared to the control group (M = 1.04, SD = 0.51). We have included two student examples below to amplify how the Aspect control group differed from the COMPASS intervention group.

COMPASS Goals for Kaitlin

Social

Using a visual prompt, Kaitlin will maintain a conversation for 2 minutes with familiar people (family, school staff) about at least 3 topics in a variety of settings (home/school) as measured by task analysis checklist 4 (3) out of 5 opportunities.

Communication

In stressful/challenging situations Kaitlin will communicate her own emotions or needs (using words, visual, iPad, gesture) in structured/with familiar staff/ familiar settings as measured by frequency monitoring checklist in 2 out 4 opportunities a week.

Learning

Kaitlin will implement steps to solve a problem with a visual prompt in familiar settings with a trusted adult as measured by task analysis checklist twice week at school and home/community/ 3 out of 5 opportunities.

COMPASS Group Kaitlin was in her final year of school and was 18 years old. From the COMPASS consultation, the team decided that their prioritized objectives were maintaining social interactions and being able to communicate her emotions and solve a problem in a natural situation, as Kaitlin was preparing for a transition into a job next year.

IP Goals for Samuel

IP Goal 1
Samuel will sit for a maths activities for a period of 20 minutes.
IP Goal 2
Samuel will independently complete a fine motor activity before any writing tasks and use a pencil without the pencil grip.
IP Goal 3
By the end of the year, Samuel will verbally communicate a request or statement in full sentences in the appropriate context with verbal prompts.

Aspect Group Samuel was a 9-year-old student. From the IP meeting, the team prioritized him speaking in full sentences, attending to a math lesson, reducing his out-of-context talk, and increasing his ability to write with an appropriate pencil grip.

All individualized goals in the study were measured on three quality indicators: difficulty of the goal, measurability of the goal, and equal distance between the steps used to measure goal progress within the GAS. These quality indicators are explained in more detail in Chap. 9. Kaitlin's goals allow for a clear understanding of what is being taught, when it is to be taught, in what setting, and with whom. For teachers and consultants in the COMPASS group, it was clear that the process of writing a GAS goal meant the teachers had to think in more detail about the goals, how they would be achieved, and what progress would look like. This led to more measurable goals. A substitute teacher could pick up her goals and create tasks that would allow her to practice them. Additionally, the goals resulted from rich parent input. Kaitlin's teacher said:

> I feel the parent input is a lot more, what's the word, not comprehensive, but the parent input form [that we currently use] doesn't give as much information. The parent contributions for COMPASS are richer, are real life, are, what's the word, current.

While Samuel's goals were simple and easy to read, there is much room for subjective interpretation. Someone unfamiliar with Samuel may have questions about the skills in the goal—such as what constitutes an appropriate context for goal 3, and more importantly, uncertainty concerning whether or not the goal was achieved. One challenge that Samuel's team also had was regarding goal 2. It was decided early in the year that the pencil grip was not needed. Initially, the goal had been written that way because the parent had specified interest in the student using a pencil grip. When the teacher decided the pencil grip was not needed, the goal was "achieved," and a new goal was written. This process speaks to the unsystematic way goals are written when quality data and collaborative meetings are not involved. Samuel's teacher spoke of this challenge by saying,

> When one of the goals was achieved for my student this year, we just wrote another goal about a different skill. I think that is a challenging part—when we review our goals and they are achieved, we don't have a clear next step. A new goal is usually written, but what about the old skill? Does it need practiced more? Is there another place we can practice it in?

Conclusions

Results of this study demonstrated that the adaptation of COMPASS in an Australian context showed high rates of satisfaction and fidelity. Most importantly, although student goal attainment scores improved over time for both groups, the COMPASS group demonstrated more growth than the comparison group. The success of this intervention in improving the quality growth of IP goals for students on the autism spectrum demonstrates the need for a standardized intervention that supports teachers in this critical practice. Additionally, having one standardized assessment (the COMPASS profile) and a way to systematically identify and track progress on goals (GAS) made an incredible difference in teachers' experiences with student IPs. COMPASS provided structure, clear steps, and reduced workload, although considerations would need to be made for a whole-school model. These results indicated that despite the difference in training and expertise of the teachers in our study, COMPASS still resulted in noticeable change.

Critically, participants in our study felt the burden of the initial consultation meeting. Our participants had the choice of running the meeting as a full 3-hour session or breaking it down into two 1.5-hour sessions. All our teachers have class sizes of approximately 6–10 autistic students. Without participation in COMPASS, each teacher is expected to host an individualized planning meeting with the student, caregivers, and other stakeholders at the beginning of the year. This meeting lasts approximately 30 minutes. Therefore, participation in a 3-hour meeting at the beginning of the year instead of a 30-minute meeting signifies an incredible increase in the resource of time. The qualitative data in our study clearly reflects a perception that the initial consultation was rich, meaningful, and resulted in better-quality goals. But as one teacher stated, "In regards to the hours, whilst I think every family was positive, moving forward, doing that with every student in [your class] is just not realistic."

Next Steps

To balance the challenges of COMPASS and the benefits, and to understand how COMPASS can continue to support Aspect schools and students on the autism spectrum in Australia, the research team and education collaborators hosted a working group to plan how COMPASS can be extended. Aspect intends to consider the research-based practices gained by teachers and coordinators in the study for adoption within Aspect practice. Sustainability is discussed along with resources and translation to a larger scale. Important questions are discussed by the workgroup, such as how COMPASS can be delivered school-wide in a school where all students are on the autism spectrum. Some of the challenges discussed included how to manage the time resource and sustainability of the consultation model. Although meaningful and valued by participants in our study, the initial consultation is not

manageable across the whole student body due to a lack of resources and time. Additionally, due to time and resource constraints, an internal consultant could not closely mediate all consultation and coaching meetings if all students participated in COMPASS. One salutation that came out of the working group was the option for teachers to work in collaboration in professional learning communities to keep each other accountable for their student's individualized plans instead of requiring consultant accountability (see Chapt. 10 for a description of a peer-coaching adaptation of COMPASS). This would be more sustainable and may have the ability to increase self-efficacy and autonomy.

Implications for Autism Practice

The study was conducted during the 2021 school year, which included numerous COVID-19-related disruptions, so more research is warranted in a more typical school year as COMPASS components are rolled out. The COMPASS intervention demonstrated success for the participants in our study, and it is recommended that minimally, components of COMPASS are adopted across Aspect schools. To ensure that new components are sustained, professional development in the areas of goal setting is recommended at Aspect schools. Based on the data in this study, including feedback from participants who did not have exposure to COMPASS, two aspects of COMPASS are a priority: (a) the COMPASS profile assessment used to collect information before the first planning meeting and (b) the use of goal attainment scaling process to track progress on student's individualized goals.

The project replicated an intervention that helps to improve the quality of goals and progress for school-age students on the spectrum, a challenge that has been acknowledged in practice and research for years. The intervention warrants additional research and knowledge sharing in order to continue improving educational opportunities for students on the autism spectrum and ensuring successful scalability. Also, according to our data and participant feedback, families felt that their students benefited positively from being a part of the COMPASS intervention in terms of higher-quality goals, better collaboration, and a deeper understanding of the student. COMPASS can help improve students' educational experience, improve the parent/teacher alliance and collaboration, and improve the quality of education for students on the autism spectrum.

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Chapter 5
Adapting and Evaluating COMPASS for Transition-Age Youth for Improving School Outcomes

Lisa A. Ruble

Overview The goal of this chapter is to describe the process for adapting COMPASS for transition-age youth and the outcomes. A case study details the steps in completing COMPASS with a high school student.

> "Begin with the end in mind."

This was a quote from a parent of a high school student with autism when asked what good transition planning looks like (it also comes from *The 7 Habits of Highly Effective People* by Steven Covey). The goal of beginning with the end in mind was very insightful and could not be more on target. It is what the federal law of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA; PL 08–446) means when it requires Individual Education Programs (IEPs) to include transition services as

> 'a coordinated set of activities for a child with a disability' (Sec. 300.43 Transition services) and 'designed to be within a *results-oriented proces*s, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.'

Schools, caregivers, and students rely on the transition IEP as the roadmap that articulates and lays out the results-oriented process described in IDEA. It is a promise to students and caregivers outlining what will happen to ensure a successful transition from school to post-school activities. The transition IEP is

> based on the individual child's needs, taking into account the child's strengths, preferences, and interests; and includes—(i) Instruction; (ii) Related services; (iii) Community experiences; (iv) The development of employment and other post-school adult living objectives;

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_5

and (v) If appropriate, acquisition of daily living skills and provision of a functional vocational evaluation.

However, a promise is not enough. Laws can establish goals but cannot guarantee outcomes. For positive transition outcomes, evidence-based approaches, including careful planning, are necessary to ensure good outcomes. IEPs must prioritize employment or enrollment in internship or volunteer experiences, structured day programs, training programs, community college, or universities and have clear strategies to meet these future outcomes by including carefully thought-out activities that can be implemented during high school as part of the transition plan. Just merely identifying a goal of employment is insufficient for ensuring the person will be employed or be involved in activities following high school. We will reflect on some reasons behind why transition plans are not enough, and other strategies such as clear intervention plans, outcome monitoring, and most importantly, parent/caregiver and student input are critical. We also review more in-depth about the transition IEP in Chap. 3 and specific areas of improvement based on our research.

Although there are an abundance of interventions for students with autism that claim to be evidence-based, surprisingly few are *research supported*. IDEA does not stipulate what "results-oriented process" should be used or what plans lead to good outcomes. It falls on educators to determine the best approaches (Findley et al., 2022). The promise that transition planning should facilitate families' abilities to access services so that a personalized and seamless plan based on the needs, preferences, and strengths of the whole person with autism is maximized to the fullest extent possible is far from being realized.

But this gap is not solely the fault of school programs. COMPASS is one of the few interventions with research support that helps address this gap. With funding from the National Institute of Mental Health, we adapted COMPASS for high school students. Our initial work, which is highlighted in our first manual on COMPASS (Ruble et al., 2012), focused on preschool and elementary school-age children with strong results and superior IEP outcomes compared to children whose teachers did not receive COMPASS. In the following section, we will describe the COMPASS intervention and our work in adapting, making, and testing COMPASS and its effectiveness for older, transition-age autistic youth.

COMPASS Adaptation for Transition Youth

Consistent with IDEA and COMPASS is that all goals and plans or teaching strategies to achieve the goals are individualized and personalized to the student. For special education programs to produce successful transition outcomes, IDEA ensures

…that all children with disabilities have available to them a free appropriate education that emphasizes special education and related services *designed to meet their unique needs* and prepare them for further education, employment, and independent living.

Thus, by definition, the ultimate outcome of special education services is a seamless and smooth transition from high school to postsecondary opportunities. By the age of 16, well before the time students with autism reach their final year of school, postsecondary goals for what they will be doing for employment, training, or college and where they will be living should be identified in the IEP, along with plans for achieving them. But even more importantly, not only should goals be identified, they should also be obtained.

Wong et al. (2021) identified the supports that should be prioritized for facilitating employment outcomes for students with autism. Researchers found that parent participation was critical for employment. In addition, important school-based transition supports should include (a) vocational-related services, (b) supports for transition planning, and (c) work experience. Vocational-related services included participation in classes related to job readiness/prevocational training, job shadowing and work exploration, internships, specific job skills training, job search training, and a job coach. Supports for transition planning included having a transition plan, receiving teacher implemented instruction on transition planning, and identifying service needs in the IEP. Lastly, work experience includes volunteer or community service during high school, community-based work, and participation in a school-sponsored work activity.

There are also services outside the school system that should be considered for the transition IEP. The Rehabilitation Act of 1973 is a federal law that authorizes grants to states for vocational rehabilitation services, with emphasis on those with the most severe disabilities. Several researchers have identified the use of vocational rehabilitation services as a predictor of positive employment outcomes (Hatfield et al., 2018; Rast et al., 2020; Burgess & Cimera, 2014). Burgess and Cimera (2014) found that when individuals with autism received VR services, they were more likely to be successfully employed compared to the overall population of adults served by VR. These findings point to the importance of having a VR counselor at the table during transition planning. Yet Shogren and Plotner (2012) reported that few agencies, including VR, participated in transition planning, a finding that goes against best practices and also the needs of individuals with autism who often require more postsecondary support services compared to students with other disabilities. We will revisit the different players, such as VR, important for transition planning later and provide an example of the different services and a suggested timeline for transition planning on our website compassforautism.org.

While high-quality and personalized IEP goals are necessary to ensure we are headed in the right direction, implementing the strategies related to the goals is where the rubber meets the road. Clear and effective transition plans are the glue to ensure goals are put into actions. In other words, IEP goals should be related to and linked to postsecondary goals to ensure the student is meeting the milestones and benchmarks necessary for a successful transition. In Chap. 3, Findley discusses these issues in more detail and a measurement tool that can help bridge the gap between postsecondary goals and IEP goals.

Overview of COMPASS

Up to this point, we have identified several factors important for positive transition outcomes—individualized assessment, goal setting, and intervention planning that includes VR-related services, work experiences, community college and college readiness experience, etc. *But what about other outcomes—those that we often consider as essential for a good quality of life—outcomes such as independent living skills, friendships, and participation in leisure activities?* What do we know about these types of outcomes and how can we improve them?

With supports, autistic individuals can achieve a good quality of life that includes a productive, satisfying, and meaningful life, integrated into their communities. More than 25 years ago, we proposed an alternative framework for a personalized perspective for conceptualizing, assessing, and intervening to support and improve adult outcomes in autism that was based on a transactional approach (Ruble & Dalrymple, 1996). Because people do not live in isolation, we needed a framework that considers the complex interplay between the individual, family, school, social, community, and economic resources, i.e., the critical proximal and distal influences and interactions between individuals with autism and their environments. Proximal interactions are those most closely connected with the individual and include families, friends, and teachers, for example. Distal influences affect the individual less directly and can include availability of social and community resources such as vocational rehabilitation services, training experiences, and Medicaid waiver services.

We believe that traditional outcome definitions for autism of normal social development and independence articulated decades ago tend to misrepresent and underestimate the competencies and critical gains in ability that meaningfully impact the quality of life of those with autism. The COMPASS model is based on the developmental theory that competency, which serves as a buffer against failure, is the result of reciprocal and dynamic interactions between individuals and their environments (transactional). If we can examine carefully and identify the contribution that the environment makes toward reducing individual risk factors and enhancing protective factors, then we can influence the development of important quality of life skills (see Fig. 5.1). In other words, all people have personal challenges that when met with environmental challenges sets the stage for failure. But when personal and environmental challenges are countered with personal and environmental supports and protective factors, competence and success can be achieved.

Competence looks different across the lifespan of the individual and is also person-specific. Transition to adulthood brings with it vocational decisions as well as demands for more independent living skills. The individual no longer is faced with the school routine but must now learn social and leisure activities on his/her own initiative. The social, communication, self-awareness, and emotional competencies continue to be refined and utilized throughout adult life. The extreme heterogeneity in autism requires a framework, such as COMPASS, that can be helpful for individuals independent of language, cognitive, or social abilities (Ruble & McGrew, 2013).

COMPASS was first described in 2002 (Ruble & Dalrymple, 2002) and manualized in 2012 (Ruble et al.). The original randomized controlled studies of COMPASS

Fig. 5.1 COMPASS balance

focused on young children ages 3–8 (Ruble et al., 2010, 2012). Two randomized controlled trials demonstrated that IEP outcomes in the critical areas of social, communication, and learning skills are essentially doubled in COMPASS. Further, the second study compared a web-based coaching approach with traditional face-to-face coaching with teachers and resulted in similar outcomes. The success of COMPASS for young children then led to NIH research funding for adapting COMPASS for transition-age youth (2018). NIH had a special request for applications in areas understudied, which included research on interventions to improve transition outcomes. Thus, this chapter will focus on our approach for adapting and implementing COMPASS with high school students. For the details of implementing COMPASS, the 2012 manual provides step-by-step instructions and protocols for the initial consultation and coaching sessions.

Approach

Because COMPASS was originally intended for young children, it was necessary to adapt it for transition-age students. This was because transition brought about a different way of thinking of IEPs and how we make decisions. For young children, we assess the needs across developmental areas and use our assessment results to determine IEP objectives. *For transition-age youth, we identify postsecondary outcomes*

and use this information to develop IEP objectives that are designed to reach these outcomes. For effective transition planning, postsecondary outcomes and the strategies to meet them must be clear, measurable, and consistently revisited over time, based on careful monitoring of progress or lack thereof.

To ensure that the adaptations made for COMPASS reflected student, parent, and teacher observations of effective transition planning, we conducted a series of focus groups (Snell-Rood et al., 2018) to help identify our adaptations. In the following section, we summarize the results.

Focus Groups

Before we adapted COMPASS for transition-age youth, we wanted stakeholder perspectives ahead of time. When adapting an intervention, obtaining information from the people impacted by the intervention is important because we wanted to confirm what aspects of good transition were embedded in COMPASS and what needed to be added. We sought to understand the facilitators and barriers of positive, thoughtful, and thorough transition planning through the lens of stakeholders. We asked stakeholders about (1) implementation practices (i.e., critical players, services, processes, and outcomes); (2) barriers and facilitators to good transition planning and transition interventions; (3) the role of collaborative relationships (i.e., interagency, intra-organization, and family-practitioner) and policies (i.e., federal, state, and school); and (4) what additional measures should be used to evaluate outcomes.

1. What are the critical elements of good IEP transition planning? What would we see as a result of good transition planning? Who should be involved? Who are the critical players? And what are the key services that we should be described in the transition plan?
2. What are the main barriers or challenges that make it difficult to achieve good IEP transition *planning* and what are potential solutions to these challenges?
3. What are the critical elements of a good transition *intervention?* What would we be able to observe with a good transition *intervention?* What services, agencies, organizations, federal, state, and local that could/should be accessed and included?
4. What are the main barriers or challenges for good transition *intervention* and what are potential solutions to these challenges?
5. How will we know if transition planning has been successful (what intervention outcomes should we expect), and how could we best observe this or know it has been achieved?

We met with 40 stakeholders who represented individuals with autism, parents, classroom teachers, school administrators, adult service providers, and state policymakers and asked the groups to consider the questions detailed in the box. We analyzed their responses and identified three major themes related to good transition planning and implementation of transition plans: (a) the planning process that takes place in schools to help students prepare for transition; (b) the struggle to initiate life beyond school; and (c) efforts to gain and maintain employment. The first theme was most relevant for school-based interventions, such as COMPASS. The other

themes highlight the importance of context and collaboration and input from key players, including adult service agencies.

For the first theme concerning the transition planning process, stakeholders described several limitations of the current process such as inappropriate assessment for goal-setting and skill development, and poor communication, including insufficient involvement of all key players responsible for decision-making needed for good planning. Underlying all their concerns, one consistent theme was the crucial need for collaborative relationships between school, home, and community agencies. Another common concern was the lack of an adequate planning approach that accounted for the full continuum across the autism spectrum. Families lamented that overall the responsibility for transition planning and the implementation of the plans shifted from the schools to them. We will talk more about this finding and its implications in a later section.

Steps to improve implementation of transition planning. Participants of all backgrounds suggested that IEP meetings could be improved by holding planning sessions beforehand to prepare participants to make decisions at the actual meeting. Direct, continued communication between schools, families, individuals with autism, and community providers is necessary for understanding and informed decision-making. Moreover, the use of collaborative, accessible language that parents understand would facilitate more equitable involvement. Many recommended that the key players (e.g., employer and service providers) needed for effective transition planning might vary depending on student needs.

For the second and third themes: (a) struggle to initiate life beyond school and (b) efforts to gain and maintain employment, stakeholders likened the experience of transition to walking off a precipice. They noted a lack of services for young adults post-transition despite policy mandates, inadequate oversight and accountability of implementation of adult services, and little training for adult service providers to work with adults with autism. Policies that emphasized differentiating between children and adults were viewed as limiting access to adult services. They repeated the need for collaborative community relationships, with shared understanding of each other's roles and how best to work together to create a more seamless experience to enhance best practices, and a long-term approach to the measurement of transition outcomes. They also observed that transition plans do not address educational benchmarks necessary for employment and that insufficient assessment of employment abilities and opportunities created barriers. They noted that job and individual-specific support were essential and that ongoing assessment of employment needs was necessary. Lastly, they returned to collaboration, noting that collaborative community relationships are critical to support employment of young adults with autism.

COMPASS Adaptations

Based on the focus groups, we adapted COMPASS accordingly. We made four key changes to COMPASS for transition youth: (1) We revised the process of the consultation to include a discussion of future plans for the next 5 years. (2) To include

the voice of the students, we updated the COMPASS Profile Assessment for Middle/High School Autistic Youth and Adults to include more age-appropriate skills and a self-report version; this activity led to different forms being used during the consultation. And (3) we developed a top ten list of critical activities to be completed by parents and youth and (4) a transition process resource guide that helps explain what transition planning is, who the key players are and their primary responsibilities, and a timeline for planned activities. We review each of the changes briefly and provide the forms on our website www.compassforautism.org.

Updating the COMPASS Process

In our first book, we describe the COMPASS intervention and the activities associated with the two parts of the intervention (initial consultation and teacher coaching sessions) and provide the forms and handouts used for the program. The basic structure for COMPASS for young children was retained for the transition-age youth. The main difference is that the original COMPASS program was developed for children between preschool and elementary school age. COMPASS for transition, like COMPASS for the younger children, consists of the same two primary activities, the initial consultation and coaching sessions, that are distinct but related.

The original framework for the COMPASS intervention is illustrated below (Fig. 5.2) with the white boxes. It consists of two action steps: first, *the initial consultation* where goal setting and intervention planning happens with the caregiver, student, and teacher, and second, *the coaching sessions* that involve activities of monitoring student progress, monitoring teacher adherence to the implementation of intervention plans, and problem-solving or modifying intervention plans as necessary.

The changes are represented by the dark arrows on the right in Fig. 5.2. The first arrow refers to an added and necessary discussion of the student's postsecondary goals (future planning; see box) following high school. To identify post-school goals, a training packet (available online compassforautism.org) was created and provided to all the participants that included, in addition to discussion of future planning, an overview of COMPASS, best practices for transition, and the outline for the session.

Future planning
1. What will she/he do during the day? (employment, postsecondary education, community participation)
2. Where he she/he live?
3. How will she/he move about in the community?
4. How will she/he make decisions about finances?
5. What will she/he do for recreation and leisure?
6. How will she/he develop and maintain friendships and relationships?

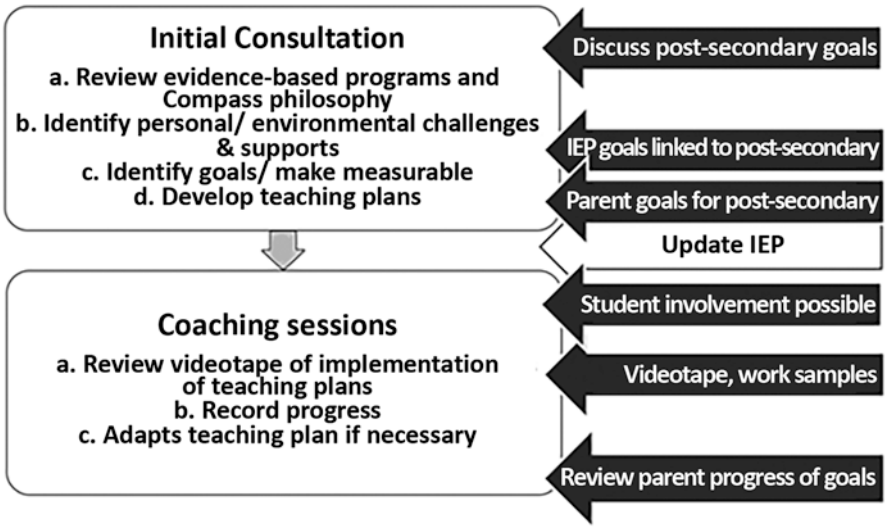

Fig. 5.2 COMPASS activities. (Copyright © 2018 by the American Psychological Association. Reproduced with permission. Ruble et al. (2019)

After discussion of each of the goal areas, including the postsecondary goals, intervention plans were made. This plan was revisited during each of the follow-up coaching sessions. Most importantly progress toward implementation of the plans was discussed, and, when necessary, problem-solving occurred when progress was not made and plans were changed accordingly.

Profile Assessment for Middle/High School Youth with Autism

Similar to COMPASS for young children, for transition-age youth, parents, teachers, and students (when possible) are asked to complete a profile. The profile identifies the student's preferences, strengths, frustrations, and dislikes as well as self-management, behavior, social, communication, and learning skills strengths and challenges. The profile is reviewed during the initial consultation so that common strengths and challenges are identified at home and school, as well as differences. Further, the profile pinpoints critical self-determination skills of social, emotional, and learning goals necessary for and linked to positive post-school goals and aspirations. After the skills are identified and turned into measurable goals, individualized interventions are developed for each goal with consideration of the student's personal/environmental challenges and supports. We provide a detailed case study later in the chapter that illustrates the full process, including the intervention plans.

In our first book, we referred to the profile as the COMPASS Challenges and Supports form or the joint summary form, aka the COMPASS Profile. For transition

youth, the profile was adapted in two primary ways. First, a self-report version of the assessment was developed. To the greatest extent possible, the voice of autistic students must be part of the transition planning process. In our test of COMPASS for transition youth, about 1/3 of the consultations involved students who were able and desired to complete the self-report. A self-report version of the COMPASS Profile is available online on our website compassforautism.org. Second, the profile was updated based on age-appropriateness for autistic youth.

Caregivers and teachers completed the COMPASS profiles separately which were then aggregated into a single report allowing for ratings to be viewed side-by-side. As a side, teacher feedback about the usefulness of the profile of the student at home, school, and in the community was that it was extremely helpful (see Chap. 4 for more details on caregiver and teacher perceptions of COMPASS and especially the profile). The COMPASS Profile (for adolescents and adults) assessment for autistic youth is available as a .pdf online at compassforautism.org. *There is also an electronic version available on the website that is part of the electronic consultation and coaching platform. Both the caregiver and teacher forms are freely available at no charge.*

For students who were unable to complete the profile due to difficulties with reading and comprehension skills, we met with the students in advance of the consultation and conducted an interest assessment of likes and dislikes. This assessment also included activities designed to elicit work skills (starting and completing a task independently, asking for help, making a request). Common to these students were the need for augmentative and alternative communication approaches to facilitate comprehension and expression as they were generally nonverbal and also had intellectual disability. Thus, we also assessed ability to understand visual supports and identified those which were most comprehensible. This allowed us direct knowledge of the student that helped generate ideas for goals and intervention strategies during the first consultation.

Top Ten Resource List

As mentioned, our focus group members discussed a need for information that was accessible and understandable by all key players, especially parents when it comes to important areas related to transition planning. They also reported a need for information on a variety of areas such as guardianship, employment, etc. and where to go for help. As a result, we generated a resource list that was shared with parents prior to the initial consultation. We provide an example of our list for one state, Kentucky, on our website compassforautism.org. We hope that this can serve as a template for providers to use from other states. It is necessary for consultants located in different states to update this information to reflect their own state agencies and services as they change over time.

Transition Handout Reference Guide

Closely related to the top ten list is another reference guide that focuses on transition specifically and to important related players. In our reference guide, we describe what the transition process is, who the important people are that make up the process and what their roles are, employment, supported employment, educational opportunities after high school, and a transition planning timeline. We also provide the federal and state education law related to transition. The example we provide is for the State of Indiana. Like the top ten list, the reference guide would need to be adapted for the consultant's specific state and updated as laws, agencies, and services change.

COMPASS Effectiveness

To test COMPASS for transition youth with the modifications, we conducted a randomized control trial (RCT). Research using RCT designs are the strongest because participants are randomly assigned (such as with a flip of a coin) to a group. One group receives the intervention, and the comparison group receives services as usual. This design ensures that group differences that might account for superior outcomes within the COMPASS group (e.g., fewer individuals with intellectual disabilities) are equally distributed across the two groups. Making sure the students in the groups are similar is important because research on early intervention for young children did not always use RCT designs. The Lovaas study, as an example, was limited because the researchers failed to randomize group assignment. As a result, children who were in the intervention had fewer autism symptoms than the comparison group who did not get the intervention (Schopler et al., 1989); thus, superior outcomes could have been due to intervening with less severely impacted individuals. We know from other studies on early intervention that the children who start an intervention with better cognitive, language, or adaptive behavior skills and less autism severity achieve higher outcomes compared to children with lower scores in those areas (Ben-Itzchak & Zachor, 2007) as the Lovaas study found.

For our RCT of COMPASS with transition youth, we report details of the study in our published paper (Ruble et al., 2018) and summarize it briefly here. We recruited 20 participants including the student, caregiver, and the special education teacher. Eleven students were randomized into the COMPASS group. The comparison group teachers received online professional development on three evidence-based practices of their choosing in transition planning. The activities reported in Fig. 5.2 were also completed. After the initial consultation, the COMPASS participants identified goals that were updated and included in the IEP and then used to create a goal attainment scale (GAS) for each goal. For the comparison group, goals from the student IEPs were used to create a GAS. This allowed for direct comparison on goal progress and type of goals at the end of the school year. We describe the

goal attainment scale process in our first book in detail (Ruble et al., 2012). At the end of the school year, a researcher who was not part of the COMPASS intervention and who was unaware of what group the teacher or student were assigned conducted teacher interviews and observed videos of the student's skill level for the goals. Having a rater who was blind to group assignment helps reduce bias in the findings and provides additional confidence in the results. The final GAS scores were averaged, and a mean score of 3.6 was obtained for COMPASS and 1.9 for the comparison group. This was a significant result that would be observed by chance in less than 1/1000 replications. A very large effect size of 2 was obtained meaning outcomes were more than 2 standard deviations higher for the COMPASS group compared to the services as usual group. To help illustrate the COMPASS process, below, we provide a detailed case study.

Case Study of Tony

Tony is an 18-year-old senior in high school. He attends both a resource room and general education classroom. He spends about 5 hours a day in general education and receives special education services from his IEP under the eligibility of autism and intellectual disability. His IQ, based on the Kaufman Brief Intelligence Test, is 57, and his language skills, based on the Oral and Written Language Test is 77. Assessment based on the Behavior Assessment Scale for Children (BASC) revealed parent-reported standard scores that fell within the average range for externalizing, internalizing, and aggression (mean scores between 53 and 59). Ratings from the behavioral symptoms index were elevated (72), and adaptive skills were low (32). Teacher-reported scores from the BASC were consistent with parent report of externalizing and aggression subscales, but internalizing behaviors were elevated (73) along with scores for the behavioral symptoms index (68); further adaptive behavior was low (37). The Vineland adaptive behavior composite was 77 based on teacher report.

For services, Tony received Medicaid waiver services. He has a Community Living Supports (CLS) worker (who is not always available because she is in school) and a case manager. He receives behavioral therapy about twice a week for about 2 hours. Tony says that he vents his frustrations with her, works on making greetings and eye contact and social skills. He also receives occupational and speech therapy. There are more comprehensive services provided through a different waiver program, but he is on a waiting list. This program would fund residential services.

Although Tony has intellectual disability in addition to autism, he and his mother decided that he would leave school after he turned 18 rather than continue his public-school program. When asked about this decision, his mother explained that she was ready for Tony to move on because school has not been helpful. She said he has had the same goals year-after-year, and she does not see any benefit. She shared Tony's history of hospitalizations for anxiety and externalizing behaviors and felt that school was the primary reason for his mental and behavioral health challenges.

A year ago, Tony was hospitalized for aggression. Although he was allowed through IDEA to continue his education and despite not having any postsecondary services planned, his mother was fed up. A review of his IEP revealed that Tony had five IEP goals, including a goal for communication and the rest for academic skills. However, he had no social emotional learning skill goals. For postsecondary goals, Tony had goals related to employment, education/training, and independent living. But they were written as one goal rather than separate goals making specific plans almost impossible to follow (see Chap. 3 for more detailed discussion of transition IEPs).

COMPASS Consultation

Prior to the consultation, Tony, his mother, Ms. Blair, and his teacher, Mr. Schall, completed the COMPASS Profile provided in the appendix. The consultant took copies of the aggregated parent and teacher ratings represented in the joint summary report of the COMPASS profile to the consultation. Tony's self-report was also included. Both the vocational rehabilitation counselor and his case manager were invited but unable to attend.

The Initial Consultation: Setting Goals and Developing Intervention Plans

Future planning. For the initial consultation, the consultant began by discussing Tony's future plans for where he would live, what he would be doing, and how he would spend his leisure time. Projecting out 5 years, Tony said that he could see himself living on his own, perhaps with a roommate, at which point his mother reported that he did not have the supports for community living (SCL) waiver that would help fund residential services and was on a waitlist. He and his mom discussed a meeting they attended the day before on housing and that, so far, the options available are based on having SCL services that he does not have access to yet. His mother went on and said

> Parents have set up for their children to be independent. And um, kind of emphasizing too that you want to get your child as independent as possible. Because if anything does happen to you, you want it to be a smooth transition and they already know what they're supposed to be doing, and they already have their supports in place.

She went on further "And that kind of thing, so you know it's not a good thing to think about, but you don't want them be living with you and then all of the sudden something happens and it's just a complete upheaval for them." Tony does receive a different Medicaid waiver and has a case manager and community living skills (CLS) worker. The consultant discussed his current waiver and how it could be used to teach some of the daily living skills such as cooking and transportation that would

relate to Tony's long-term goals of living on his own and asked if the CLS worker could attend the follow-up COMPASS sessions.

When discussing future employment, Tony reported that he was interested in being a tour guide. He was especially interested in the paranormal and wants to work in a haunted house as a tour guide for one located in a different state. When education or training was discussed, Tony and his mom expressed concern that there was a training program he wanted to attend but that it was in a different town. If he moved away to this residential training program, he would lose his waver services because the CSL services required Tony to receive services at least monthly. She also mentioned another program with mixed feelings—a college-based experience for students with intellectual disability located in his town as an option. His mother concluded

> Because I see him struggling here [at school], I don't understand why he wants to continue with college. But that's not his perspective. So, you know I've kind of…Part of me says, I just need to step back and let him do what he wants to do and make his own conclusion. I think and I've told him that.

For leisure activities, Tony's mom reported that he is part of the Special Olympics. He also enjoys sporting events and horse racing. He described that he wants to be able to make the same choices as anybody else his age and have survival skills. For transportation, Tony's mom wants to work on getting him around independently in the community because she drives him everywhere. His mom says he will walk or ride his bike, but he cannot do that where they live.

COMPASS Profile

Next, the consultant turned their attention to review the COMPASS profile (see Appendix). Tony has several preferences and interests such as horse racing, spy movies, paranormal, sports, and certain foods. He has a great memory and knowledge of certain topics such as horse racing. Both his teacher and mother reported independently that he is a kind and caring person. For frustrations, his mom reported concern of Tony "mirroring behavior" of others if he is confronted. She explained that if Tony interacts with the police and they confront him, he will *mirror* their behavior and things may escalate. His mom described a situation that happened once with a female police officer who remained calm. Because she was calm, he remained calm. Mom states that Tony will be aggressive if the person who confronts him is also aggressive. Tony confirmed that "If my boss yells at me I will say, 'If you talk to me like that one more time, I'm quitting.'" Thus, the tone of voice when being corrected is a trigger for Tony. His fears are being wrongly accused or spoken to in a stern voice. His mother reported that she worries that he will yell back at the wrong person and end up hurt or in jail. She doesn't want others to take advantage of him. His teacher also reported that Tony ruminates about disappointments, such as not being in the marching band.

For adaptive skills, more strengths than weaknesses were noted. Of the challenges, concerns about sleeping, following directions, accepting correction, participation with a group, and managing transportation were reported. Tony works from 4 to 9 pm at Goodwill, about 17–18 hours/week. Tony explained that he does not get home until 9 at night. When he gets home, he eats. His mother said that he sometimes goes to bed late or in middle of the day and does not get enough sleep, even though he seems like he is not tired. He chooses not to get dinner while at work but may get a snack at the grocery store. When asked about his job, Tony said he does not like it sometimes because it is kind of boring. At school, he received job training from an instructor who works with him during his academic internship. Mom asked if this trainer could go to Goodwill and help Tony. He is supposed to receive job coaching at Goodwill but does not. Both his mom and classroom teacher agreed that the job trainer was a good resource and could help him work on skills that could generalize to other jobs as well as different jobs at Goodwill. Mom says Tony has mentioned that he may zone out sometimes, especially while working.

For behaviors, Tony's mom notes challenges with being overly quiet or withdrawn, engaging in behaviors that may be distasteful to others, and walking away from others during interactions. His teacher noted several of the same behaviors. His mom expressed concern that Tony's unusual mannerisms or compulsive behavior may get in the way during the work by bringing attention to him.

For social interactions, several strengths were noted in the areas of responding to initiations. The greatest challenges fell within initiations with peers and understanding friendships. Tony does not initiate greetings to others or use the names of people. Tony clarified that he knows the names of people, but he does not like giving someone's name to another person. He says he thinks it feels strange if a random person knows your name. He said "that would be weird" because "it feels like the name is private information."

With communication, Tony readily initiates for personal needs such as using the toilet, but he rarely initiates for asking for information, making a choice, or asking for help. He also does not initiate with others or directly express his feelings such as when he is angry or frustrated or experiences pain. For expressing himself when his feelings get hurt, Tony said he tells people when they hurt his feelings, but sometimes he does not tell unless if it is bad; then he will report it to a teacher. Sometimes it is hard to tell the person directly who hurt his feelings, and he just ignores it. To let others know when he feels sad, he puts his head down and makes a face, not verbalizing or expressing his feelings directly. Mom notices that at home when he gets frustrated, he will move around more and make noises.

Sensory challenges and supports were also reviewed and revealed that Tony has difficulty listening or paying attention, makes self-induced noises, eats a small variety of things, does not make much eye contact, has trouble with using tools, understanding time perception and doing paper/pencil activities, and has sensitivity to some smells. Tony says he is sensitive to smells of food he does not like. Mom says the cafeteria is difficult for him. The cafeteria would not be a good job placement because of food smells and people and crowds. Tony says he likes the smells of horses. For sensory supports, he needs to move his body a great deal,

likes music, the TV, videos, and the computer. Tony says he likes all music except rap. He listens to music on the computer and does research (getting information). He was on the cross country team freshman year. Running may be a good recreational activity.

For learning skills, Tony has difficulty with distractions and ability to refocus on the task at hand, starting a new task once the old one is completed, and organizing himself to perform tasks when multiple materials are in front of him.

As the consultant went through the profile, several ideas emerged for social communication skills important to help at work and school and with interactions with others. With much discussion among the team, the following three goals were selected: (i) When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a question at least twice per day with at least 90% accuracy. (ii) When feeling that he is being confronted or corrected, Tony will stay calm, acknowledge the person, and return to his work/task with 100% accuracy. And (iii) when assigned an activity, Tony will start and complete the task independently within the required timeframe with at least 80% accuracy. Table 5.1 summarizes the goals, personal and environmental challenges, and supports related to the

Table 5.1 Tony's COMPASS goals and intervention plans

Goal One	
When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a question at least twice per day with at least 90% accuracy.	
Personal Challenges to learning are:	Being sleepy, unaware, initiating, anticipating, uncomfortable using people's names; perspective taking
Environmental Challenges to learning are:	People talking too fast
Personal supports for learning are:	Knows how to greet someone
Environmental supports for learning are:	Mom, Mr. Schall, other school teachers

Teaching Plan Strategies:
• Use a social narrative or social story for Tony to understand the importance of greetings.
• Write down the following steps for him to review:
  ○ Prepare self, think of name, try to think of last thing you talked about with them if you know them, and then say, "Hi, how are you?"
• Review what is okay to say to people depending on who they are (teachers, bosses, family, classmates, grocery clerk, etc.) and Learn when it is okay to tell someone another person's name.
  ○ Use circle of social boundaries to understand what is appropriate for whom
• Role play interactions and review videotape of role plays of self and others
• Coach peers to practice social greetings (arrivals and departures) with Tony	

Implementers:	Mr. Schall, Mr. Hirn (Strategies teacher), Ms. Duncan (Academic Internship teacher), Mom, family members, speech therapist, peers
Data:	Task analysis of interactions with different people in the circle

(continued)

Table 5.1 (continued)

Goal Two	
When feeling that he is being confronted or corrected, Tony will stay calm, acknowledge the person, and return to his work/task with 100% accuracy.	
Personal Challenges to learning are:	Does not have a calming strategy, misinterprets tone of voice; believes it is okay to challenge or respond in kind; understanding "authority" and long-term consequences
Environmental Challenges to learning are:	Confrontational people, not having someone around who can intervene; people with an authoritarian approach / tone of voice
Personal supports for learning are:	Can read, can do role plays
Environmental supports for learning are:	Mom, Mr. Schall, Strategies class; peers
Teaching Plan Strategies • Review a social narrative / social story with Tony about why it is important to stay calm when feeling threatened, especially by authority figures, and to use assertive skill instead of aggression in response to feeling threatened. • Teach Tony who are authority figures (and that we all have them). • Develop a calming strategy with Tony's input for when confronted, corrected, or stressed. • Teach/practice assertiveness skills strategies • Teach him about the difference between assertiveness and aggressiveness – how does assertiveness look different from aggressiveness? A video of the two might help him see the difference. • "Social autopsies" might help him understand the consequences of confrontation using pretend examples https://usc-word-edit.officeapps.live.com/we/(http:/opi.mt.gov/users/dougdoty/weblog/b0fd1/Social_Skills_Autopsies.html) • Facilitate a discussion between Tony and his peers/peer tutors about their strategies for remaining calm when confronted or corrected • Set up situations and role play with peers • Use visuals for calming strategy such as an emotional thermometer and practice using this every day • Practice identifying emotions (how his emotions impact his thoughts and behaviors). • Try your best before the coaching session. We can also help and would be happy to talk to Dr. Henry and others. • Share the plan with others so that we can focus on the positive and how well Tony does.	
Implementers:	Mr. Schall, Mr. Hirn (Strategies teacher), peers/peer tutors, Dr. Henry
Data:	Track if he uses the positive skills of remaining calm and using his words in an assertive manner (we need to make sure he understands what it would look like if he was meeting the goal)

(continued)

Table 5.1 (continued)

Goal Three	
When assigned an activity, Tony will start and complete the task independently within the required timeframe with at least 80% accuracy.	
Personal Challenges to learning are:	Loses track of time, zones out, may not tell time well on certain clocks
Environmental Challenges to learning are:	Unstructured or open-ended tasks; distractions in the environment
Personal supports for learning are:	Can tell time using five-minute increments
Environmental supports for learning are:	Timers, digital clocks, Strategies class
Teaching Plan Strategies: ● Teach self-monitoring skills ○ Learn and practice a strategy for managing time (how to decide how much work has to be done by a certain amount of time) ● Explore options for keeping time (e.g., wristwatch, stopwatch, timer) ● Start in the classroom; when he receives direction of what to do, let him know by what time, how much work should be done. Then review his progress afterwards. Perhaps have some kind of visual that shows what percentage of the work he completed within a certain time period.	
Implementers:	Mr. Schall, CLS worker, mom, Tony, Mrs. Jenkins
Data:	Teacher observation

Post-secondary goals for Tony that are measurable	
Goals	**Plans**
1. After high school, Tony will work and/or take classes.	At this time, Tony plans to keep his job at Goodwill. Mrs. Blair will work to get VR involved to provide any job or educational supports. His teacher will ask the VR counselor to come to the coaching session. Tony will contact someone at SHEP (the Supported Higher Education Project) to learn about the supports he can receive if he decides to take college classes.
2. After high school, Tony will live at home until he transitions to a more independent living placement that provides community supports	Tony currently has a CLS worker through the Medicaid waiver program. Tony is currently on the waiting list for the SCL waiver. Mrs. Blair will talk with Tony's CLS case manager about how much CLS can help provide supports for independent living. They had thought about Carl Perkins, but given Tony's job, have put this to the side.
3. After high school, Tony will use public transportation i.e., city bus or Wheels.	Mr. Schall will talk with Mrs. Flannery about teaching and practicing with Tony how to use public transportation or Wheels. Mrs. Blair will talk with Tony's CLS worker about practicing how to use public transportation with Tony out in the community.

(continued)

Table 5.1 (continued)

4. After high school, Tony will make financial decisions with help from his mother – work with teacher (Mrs. F) at school about using money.	Tony's mom is his financial guardian. Mr. Schall will talk with Mrs. Jenkins about teaching and practicing money management skills with Tony.
5. After high school, for leisure Tony will go to the movies and continue to participate in several sports teams.	Tony enjoys many different sports and currently plays on different Special Olympics sports team. Tony will continue to participate in sports teams. Tony's CLS worker will take him to the movies and sporting events. The local university has a peer buddy program that might be a resource.
6. After high school, Tony will have friends through a variety of activities.	Tony will try to make friends with his co-workers and others on his sports teams, co-workers. Tony may join a peer buddy program through SHEP or go to the local YMCA and find friends through these activities.

goals, including the intervention plans for each goal. A template that can be used for creating teaching plans is available in Chap. 2 and also on our website compass-forautism.org. Following the intervention plans are the postsecondary goals for Tony and the plans to reach them.

After the initial consultation, specific recommendations were made and activities discussed in preparation for the first coaching session (see box).

Recommendations from the Consultation:
The IEP and post-secondary goals will be added through an addendum to Tony's IEP either at the IEP meeting scheduled for the spring or earlier. In the meantime, everyone agreed that the goals will be carried out now.

- There will be four coaching sessions during the academic year. The coaching should take about 1 – 1.5 hours. Please have the VR counselor and Tony's CLS worker and case manager attend. It would be great if Tony could attend for a few minutes as well. Please share this report with all of Tony's providers, including the VR counselor.

To make this time as efficient as possible we ask that the following be done:

- Make a short video of Tony working on each of the goals. The consultant will download and view the clips during the coaching session. They don't need to be very long, 5 min or so would do, just need enough to score his progress on his goal.
- We would like to gather information on his progress at home.
- Collect the most recent data regarding each of the three goals.
- Be ready to discuss ideas for the teaching plan and any tweaking of the plan that needs to be done.
- For the goal of learning to stay calm when corrected or confronted, it might be helpful to invite the school psychologist as we discuss the strategies and evaluate how things are working.

In addition to discussing the progress on the individual goals, we will also talk about the action plans for the post-secondary goals described above for Tony.

Coaching Sessions

Prior to the first coaching session, the consultant prepared a goal attainment scale (GAS) for each of Tony's three goals (see Fig. 5.3) The GAS was used for progress monitoring and decision-making. The bolded wording reflects adjusted criterion descriptions that if met, would represent progress at that level. Tony, his teacher, and his mother participated in four follow-up coaching sessions that focused on the implementation of the intervention plans related to the IEP and to his postsecondary goals, assessment of Tony's progress toward his goals, and problem-solving. A summary of the first coaching session and the fourth (last) coaching session is provided.

-2 Present level of performance	-1 Progress	0 Expected level of outcome (GOAL)	+1 Somewhat more than expected	+2 Much more than expected
Challenges are being sleepy, unaware, initiating, anticipating, uncomfortable using people's names; perspective taking Difficulty if people talk too fast Knows how to greet someone	When Tony is greeted by or sees someone, he will respond to or initiate a greeting **(does not need to follow up with a question)** and will follow up with a question at least twice **(once)** per day with at least 90% **(45%)** accuracy.	When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a question at least twice per day with at least 90% accuracy.	When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a **(two)** questions at least twice **(three times)** per day with at least 90% **(100%)** accuracy.	When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a **(three)** questions at least twice **(four times)** per day with at least 90% **(100%)** accuracy.
Does not have a calming strategy, misinterprets tone of voice; believes it is okay to challenge or respond in kind; difficulty understanding "authority" and	When feeling that he is being confronted or corrected, Tony will stay calm **(with reminders)** acknowledge the person, and return to his work/task **(with**	When feeling that he is being confronted or corrected, Tony will stay calm, acknowledge the person, and return to his work/task with 100% accuracy.	When feeling that he is being confronted or corrected, Tony will stay calm, acknowledge the person, and return to his work/task with 100% accuracy. **(He will be able to identify two calming strategies used and/or the other person's perspective.)**	When feeling that he is being confronted or corrected, Tony will stay calm, acknowledge the person, and return to his work/task with 100% accuracy. **(He will be able to identify several strategies used for relaxation and the other person's perspectives) or (He will have 50% fewer**

Fig. 5.3 Tony's goal attainment scale

long-term consequences Uncomfortable with confrontational people, not having someone around who can intervene;	**prompting)** with 100% **(50%)** accuracy.			**occasions when he feels confronted or corrected.)**
Loses track of time, zones out, may not tell time well on certain clocks Difficulties with unstructured or open-ended tasks; distractions in the environment Can tell time using five minute increments Timers, digital clocks, Strategies class are supports	When assigned an activity, Tony will start and complete the task **(with prompting)** independently within the required timeframe with at least 80% **(40%)** accuracy once per week.	When assigned an activity, Tony will start and complete the task independently within the required timeframe with at least 80% accuracy once per week.	When assigned an activity **(two activities or in the same class or from two different classes/environments)**, Tony will start and complete the task independently **(and ask someone else to edit his work or get another task)** within the required timeframe with at least 80% **(90%)** accuracy once per week.	When assigned an activity **(three activities or in the same class or from three different classes/environments)**,, Tony will start and complete the task independently **(checking his own work or get another task and complete it)** within the required timeframe with at least 80% **(100%)** accuracy once per week.

Fig. 5.3 (continued)

Coaching 1

The consultant was delighted that several of Tony's team members attended the first coaching session including his Medicaid waiver case manager, Ms. Hirn, and OVR counselor. The team is also pleased that Tony decided to join the session. Each person participated and contributed valuable information throughout the hour and a half-long first coaching session. The team discussed the progress of each goal for Tony that was being followed throughout the school year. The team also reviewed the progress made toward each of Tony's postsecondary goals.

Observation and Discussion for Goal 1

For each skill, the team observed a video of Tony's most current level of performance. The first skill is *when Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a question at least twice per day with at least 90% accuracy*. For this skill, the team observed Tony and Mr. Schall practicing how to respond to a greeting. Tony and Mr. Schall role-played a greeting and

response with Mr. Schall explaining different ways Tony could possibly respond. Mr. Schall and Tony also began discussing what is okay to say to people depending on who they are such as teachers, bosses, classmates, etc. The next step is to involve Tony's academic internship teacher, Ms. Duncan, and learning strategies teacher, Mr. Hirn, and peers to help Tony practice in a variety of situations. It was suggested that Mr. Jenkins, the speech language pathologist, may also be able to help Tony practice this skill. Mrs. Blair suggested that Dr. Henry's "Lunch Bunch" group could be a great opportunity for Tony to practice this skill with his peers.

The team reviewed the teaching plan, and Mr. Schall stated he has not yet worked on social stories with Tony but will begin creating some samples. The skill is worked on at least once a week and data are being kept. Tony has worked on this goal with Mr. Schall. A review of progress using the goal attainment scale (GAS) form showed that Tony is making progress. Based on the video, he received a score of −1.5 because he has role-played greetings.

Observation and Discussion for Goal 2

For the second goal of *staying calm, acknowledging the person, and returning to his work/task with 100% accuracy when Tony feels that he is being confronted or corrected*, the team observed a video of Tony and Mr. Schall discussing emotions and his response to a recent instance when he was corrected at work. In the video, Tony stated his boss used a firm voice and corrected Tony to put clothes in the right bin. Tony said that he did not verbally respond to his boss, but did remain calm and did what his boss said because his boss did not yell at him. Tony also talked about how he did not stay calm while watching a movie at school because it made him upset. Tony provided another example when he did not stay calm when his teacher said he would have to get off the computer, if he did not stay calm. He explained that he did not yell at her or say anything inappropriate. The consultant reviewed some handouts on social autopsies, relaxation strategies, and maintaining control. At a couple of different points during the conversation related to this goal, Tony became visibly upset (rubbing his hands on his pants and breathing heavily). It was difficult for him to listen to this conversation, but he did remain calm overall. He left the room a few times. His mom asked him to explain where he was going, and he did. But on his own, he came back to join the conversation each time.

The teaching plan was reviewed, and the consultant discussed involving Dr. Henry (school psychologist) to talk to Tony about the importance of staying calm and different calming strategies. The consultant also discussed possibly allowing Tony, when he is upset, the opportunity to state he needs a break, then to step away, calm down, and then come back when calm as he demonstrated today. Tony's other teachers would have to agree to this as well. Tony has worked on this skill one time and data are not being kept. The consultant discussed tracking data by having Tony report to Mr. Schall at the end of English class any instances he stayed calm. The following sentence was developed for Tony to use for his self-report: *When I was upset (write number of times you were upset), I stayed calm (write number of times you stayed calm)*. Tony has worked on this skill with Mr. Schall and peers. A review of progress using the GAS

form showed that Tony is making progress. Based on the video, he received a score of −1 because he was able to stay calm and return to his work when he was corrected. He also stayed calm during the conversation of this goal and returned to the discussion. The team praised Tony for his efforts of staying calm and returning to the session, and reminded him how important his input was for his program.

Observation and Discussion for Goal 3

For the last goal of *starting and completing the task independently within the required timeframe with at least 80% accuracy*, a video of Tony demonstrating the skill was not made. The team reviewed a sample of Tony's English assignment given by Mr. Schall. Mr. Schall said he gave the assignment to Tony, walked away, returned, and saw that Tony had stopped working. Tony explained he will sometimes "zone out" while sorting clothes at work and he has been asked to not do this by his employers. Tony also indicated he sometimes chews clothes when he zones out and says his counselor at work has told him to not chew on the clothes. He is aware of his chewing and more problem-solving about this would be helpful (such as why he chews, what can he do to replace this skill with something more appropriate).

The consultant reviewed the teaching plan and clarified the goal for this skill is to occur once per week. The new goal reads: *When assigned an activity, Tony will start and complete the task independently within the required timeframe with at least 80% accuracy once per week*. The consultant suggested that he work on this skill daily, even though data might be collected only once a week. The skill has been worked on once and data are not being kept. The GAS form was reviewed; however, because no video was available for review, the consultant did not assign a GAS score.

Review of Postsecondary Goals

Next, the consultant reviewed the progress toward each of Tony's postsecondary goals. See the attached table for progress toward the goal using the three-point scale (1 = no progress; 2 = some progress; 3 = completed). Table 5.2 shows the ratings of progress toward postsecondary goals. Ratings of 2, some progress, were given at the first coaching session. Some plans had not been implemented and received no score.

Next Steps

The team made the following recommendations for the next coaching session, including adding the goals into Tony's IEP and obtaining more involvement from his team.

1. Adding the goals to the IEP, both the personal goals and the postsecondary goals
2. Getting Ms. Duncan, Mr. Hirn, and Mr. Jenkins involved with goal one
3. Getting Dr. Henry involved with goal two

This coaching session should take about 1 hour. The consultant hoped that Tony, Mr. Schall, Mrs. Blair, Ms. Hirn, Ms. Prater, and Tony's behavior specialist might attend.

1. To make this time as efficient as possible, please have the following done:
   - Make a short video of Tony working on each of the goals.
   - Collect the most recent data regarding each of the three goals.
   - Be ready to discuss ideas for the teaching plan and any tweaking of the plan that needs to be done.
2. In addition to discussing the progress on the individual goals, the consultant will also talk about the action plans for and progress with the postsecondary goals described below for Tony (Table 5.2).

Table 5.2 Tony's postsecondary goals and plans

Coaching 1 and Coaching 4 Post-secondary Goal Progress and Planning for Tony				
Goal	**Plan**	**Progress at Coaching 1 / Progress at Coaching 4**	**Coaching 1**	**Coaching 4**
1. After high school, Tony will work and/or take classes.	Mrs. Blair will work to get VR involved to provide any job or educational supports.	The vocational assessment has been completed.	2	3
	His teacher will ask the VR counselor to come to the coaching session.	OVR counselor attended.	3	3
	Tony will contact someone at SHEP (the Supported Higher Education Project) to learn about the supports he can receive if he decides to take college classes.	Tony applied for the TPSID program, submitted his recommendations, and has an interview for the program scheduled for March.	3	3
2. After high school, Tony will live at home until he transitions to a more independent living placement that provides community supports	Tony does not currently have a CLS worker through the Michelle P. Waiver. Tony is currently on the waiting list for the SCL waiver.			
	Mrs. Blair will talk with Tony's CLS case manager about how much CLS can help provide supports for independent living. Will get behavior specialist involved with working on goals and skills for going out in the community.	(coaching 1) Tony's case manager will add time management skills to his behavior plan. His case manager also offered to invite behavior specialist to next coaching session; (coaching 4) behavior specialist joined meeting by phone and states she will work with Tony on the suggested strategies.	2	3
3. After high school, Tony will use public transportation i.e., city bus or Wheels.	Mr. Schall will talk with Mrs. Flannery about teaching and practicing with Tony how to use public transportation or Wheels.	(coaching 1) Tony will go on outing in January to practice using public transportation; (coaching 4) Mr. Schall spoke to life skills teacher about upcoming practice opportunities in March.	2	2

(continued)

Tab. 5.2 (continued)

	Mrs. Blair will talk with Tony's CLS case manager about practice using public transportation with Tony out in the community.	Mrs. Blair will look into the application process for transportation * OVR will see if supported employment can help Tony learn how to utilize Wheels.	2	2
4. After high school, Tony will make financial decisions with help from his mother – work with teacher at school about using money.	Tony's mom is his financial guardian.			
	Mr. Schall will talk with Mrs. Flannery about teaching and practicing money management skills, including purchasing and budgeting, with Tony.	Mr. Schall and Mrs. Blair will ask OVR about support for developing money management skills. * VR says these skills can be worked on at the training program.	2	2
5. After high school, for leisure Tony will go to the movies and continue to participate in several sports teams.	Tony enjoys many different sports and currently plays on different Special Olympics sports team. Tony will continue to participate in sports teams.			
	Tony's CLS worker will take him to the movies and sporting events.	Trying to find a new CLS worker. May use the university Peer Buddy Program.		2
	The local university has a peer buddy program that might be a resource.	Tony signed up for the peer buddy program in Sept. and has a peer buddy.		3
6. After high school, Tony will have friends through a variety of activities.	Tony will try to make friends with his co-workers and others on his sports teams, co-workers.	Trying to find a new CLS worker. May use the Peer Buddy Program.		2
	Tony may join a peer buddy program through SHEP or go to the local YMCA and find friends through these activities.	Trying to find a new CLS worker. May use Peer Buddy Program.		2

Coaching 4

The consultant met with Tony, Mrs. Blair, Mr. Schall, the VR counselor, and his CLS worker for the final coaching session. Tony's behavior specialist was also able to join us by phone. The team discussed the progress of each goal for Tony. The team also reviewed the progress made toward each of Tony's postsecondary goals.

Observation and Discussion for Goal 1

For the first skill *When Tony is greeted by or sees someone, he will respond to or initiate a greeting and will follow up with a question at least twice per day with at least 90% accuracy*, the team watched a video of Tony and Mr. Schall practicing how to greet someone or respond to a greeting. Tony and Mr. Schall role-played a brief conversation consisting of a greeting, response, and at least one follow-up question. Mr. Schall

initiated the first greeting and then let Tony practice initiating. At this first attempt, Tony's voice was too low for Mr. Schall to hear. Mr. Schall discussed appropriate volume and different forms of greetings and let Tony try again. At this next attempt, Tony's volume was more appropriate. Throughout the role-play, Tony asked appropriate follow-up questions. The team reviewed the teaching plan. The skill is worked on at least once a day, and data are being kept with Google Docs. Tony has worked on this goal with Mr. Schall and other teachers. A review of progress using the goal attainment scale (GAS) form showed that Tony has exceeded his goal. Based on the video, he received a score of +1 because he can respond to a greeting and will follow-up with more than one question. To achieve a higher score, Tony can begin to ask more questions and will respond to or initiate greetings with different people, such as peers.

Observation and Discussion for Goal 2

For the second goal of *staying calm, acknowledging the person, and returning to his work/task with 100% accuracy when Tony feels that he is being confronted or corrected*, the team observed a video of Tony and Mr. Schall role-playing a work situation in which Tony's boss is correcting Tony in a stern voice. Tony remained calm when being corrected in the role-play and in the discussion about the goal. Mr. Schall and Tony discussed ways Tony could respond assertively in such a situation. Tony and Mr. Schall also discussed different strategies for staying calm including taking a time out to take a deep breath and picturing oneself as the eye of a storm to stay calm. Tony shared an instance in which, while working on the tech crew of a school play, Tony was given tasks to complete by his teacher in a stern voice. Tony states he stayed calm because he remembered that doing those tasks are part of his job and that is why he is there. Tony also shared an instance in which he felt a lot of pressure to do well during a softball game and states he gave himself a time out, took a deep breath, and then resumed playing. The teaching plan was reviewed. This skill is worked on daily with Mr. Schall, and other teachers and data are not being kept. A review of progress using the GAS form showed that Tony has met and exceeded his goal and received a score of +1.

Observation and Discussion for Goal 3

For the last goal of *starting and completing the task independently within the required timeframe with at least 80% accuracy once per week*, the team watched a video of Tony starting and completing a reading task given by Mr. Schall. Tony was instructed to read a passage and then answer three questions. Mr. Schall and Tony report he took 15 minutes to complete the task. Tony reports he "zoned out" at one point during the task but states he was able to bring himself back on task. The team discussed different ways to help Tony stay on task such as using a wrist watch with a timer set to vibrate every 5–10 minutes (depending on the task) or using a printout that Tony can use to self-monitor every 5 minutes by making a checkmark if he has stayed on task or an "X" if he has zoned out. The team also discussed possibly giving a reward if Tony is able to stay on task 100% of the time. This will be further

discussed by Tony and his mom. The team reviewed the teaching plan. This skill is worked on daily and data are being kept. This skill is worked on with Mr. Schall and other teachers. Based on teacher report and the video, the team determined that Tony is at the −0.5 level on the GAS form.

Postsecondary Goals for Tony

Next, the team reviewed the progress toward each of Tony's postsecondary goals. See Table 5.2 for the last coaching session ratings. Unlike the first coaching session where many plans were not yet initiated, all plans were in process during the final session. Almost half of the goals were achieved. For those areas that were in progress, the team talked about Tony learning how to contact the local transportation services to set up rides. The consultant also talked briefly about budgeting and spending. His vocational rehabilitation counselor will search for resources on teaching budgeting. These would be good goals to target at school, home, and out in the community.

After the coaching sessions, the following next steps were planned:

1. Make video of progress on each goal for final evaluation.
2. Continue to work on responding at an appropriate volume, asking more follow-up questions, and initiating greetings with different people.
3. Continue to practice calming strategies and teaching the difference between assertiveness and aggressiveness.

For the final assessment of Tony's progress, the consultant will make plans to call Mrs. Blair so she can join by phone conference to discuss the postsecondary goals and their accomplishment. The consultant also planned to take a few minutes to talk with Tony.

To make this time as efficient as possible, the consultant asked that the following be done:

- Make a short video of Tony working on each of the goals. If possible, email the videos ahead of time for a more efficient meeting.
- Collect the most recent data regarding each of the three goals and provide an example of each.

In conclusion, in this chapter, we described our process for adapting COMPASS for transition-age autistic youth. We also reported the success of COMPASS for achieving IEP goals and postsecondary goals. We concluded with a detailed case study of a student, Tony, and his outcomes. The case study illustrates that complex decision-making in all areas of life that need to be addressed during transition. Many individuals are often involved—teachers, pre-employment specialists, vocational rehabilitation counselors, Medicaid wavier personnel, case managers, and more. But the most important individuals are the autistic youth and young adults and their family members. We learned that the postsecondary goals for community living, employment, leisure, transportation, budgeting, etc. require specific planning and strategies that fall on the autistic student and/or caregiver to implement. Often these plans generated ideas and discussion that involved a network of services and people that required organization, communication, and follow-up.

COMPASS Profile

COMPASS Consultation

Download print-ready, use-ready Versions of many helpful forms at https://compassforautism.org/blank-forms/

COMPASS Profile
COMPASS Consultation

Tony R
Student Name

2004-02-02
Date of Birth

ABC school
School Name

Date of Consultation

Ms. Blair
Caregiver

Mr. Schall
Teacher

Lisa Ruble
Consultant

1. Likes, Strengths, Frustrations and Fears

	TEACHER	CAREGIVER
Likes/Preferences/Interests:	Horse Racing And Jockeys, Sports (He Plays Basketball, Flag Football, Softball, And He Has Run Track/Cross Country), Shows On the Paranormal.	Movies, Especially Spy Movies, Ghosts, Spies, Horse Racing, Pizza, Spaghetti, McDonalds, Hotdogs, Soft Taco Shells And Melted Cheese, Mac and Cheese, Ice Cream, To Watch And Play Sports
Comments:	Tony Loves Horse Racing and The Paranormal	
Strengths Or Abilities:	Tony Has A Great Deal of Knowledge About Horse Racing And Its History With Regards To The Triple Crown Races, Etc. He Seems to Have A Sharp Memory in those Areas Of Interest. Tony Is Very Kind and A Caring Person.	Tony Usually Has A Good Memory. He Is Good At Sports When He Actually Practices. He Is Usually Mature. Tony Has A Kind Heart.
Frustrations:	Tony's Primary Frustration Is Note Being Able To Participate In Marching Band. He Is Also Frustrated By Lack Of Attention From Girls His Age.	When He Gets Confronted, He Mirrors The Demeanor Of The Person Confronting Him (E.g., If They Yell, He Yells Back). When He Loses In Sports.
Comments:	Tony Seems To Ruminate About His With Not Being In The Marching Band. His Older Sisters Were In The Band; He's Been Unable To Participate Since He Had An Incident During The Summer Practice Sessions A Few Years Back.	
Fears:		Poisonous Spiders. Tony Is Not Afraid Of Much. However, He Tends To Not Like Being Wrongly Accused Or Being Spoken To Sternly. My Fear is That He Will Yell Back At The Wrong Person And Will End Up Hurt Or In Jail. I Also Don't Want Others To Take Advantage Of Tony.

2. Adaptive Skills

Directions: Please answer each item using the scale as it presently applies to the individual with ASD, with "1 " meaning "not at all a problem" and "4" meaning "very much a problem." Add examples and notes as desired.

SELF MANAGEMENT	**TEACHER**	**CAREGIVER**
1. Performing Basic Self Care Independently	1	2
2. Entertaining Self In Free Time	2	2
3. Changing Activities -- Transitioning	2	2
4. Sleeping	1	3
RESPONDING TO OTHERS	**TEACHER**	**CAREGIVER**
5. Following 1 or 2 Step Direction	2	3
6. Accepting “no”	2	2
7. Answering Questions	1	1
8. Accepting Help	1	1
9. Accepting Correction	2	3
10. Being Quiet When Required	1	2
UNDERSTANDING GROUP BEHAVIORS	**TEACHER**	**CAREGIVER**
11. Coming When Called To Group	2	1
12. Staying Within Certain Places – Lines, Circles, Chairs, Desks	1	1
13. Participating With The Group	3	3
14. Talking One At A Time	2	1
15. Picking Up, Cleaning Up, Straightening Up, Putting Away	2	2
UNDERSTANDING COMMUNITY EXPECTATIONS	**TEACHER**	**CAREGIVER**
16. Understanding Who Is A Stranger	1	2
17. Going To Places In The Community (Place Of Worship, Stores, Restaurants, Malls, Homes)	1	2
18. Understanding Safety (such As Streets, Seatbelts)	1	2
19. Managing Transportation (Cars/buses)	2	4

3. Behaviors*

Directions: Please answer each item using the scale as it presently applies to the individual with ASD, with "l " meaning "not at all a problem" and "4" meaning "very much a problem."

	TEACHER	CAREGIVER
1. Acting Impulsively, Without Thinking	2	2
2. Hitting Or Hurting Others	1	2
3. Damaging Or Breaking Things That Belong To Others	1	2
4. Screaming Or Yelling	1	2
5. Having Sudden Mood Changes	2	2
6. Having Melt Downs	2	1
7. Having A Low Frustration Tolerance; Becoming Easily Angered Or Upset	4	2
8. Crying Easily	1	1
9. Being Overly Quiet; Shy, Or Withdrawn	3	4
10. Acting Sulky Or Sad	2	1
11. Being Underactive Or Lacking In Energy	2	1
12. Engaging In Behaviors That May Be Distasteful To Others, Such As Nose-Picking Or Spitting	2	4
13. Touching Themselves Inappropriately	2	4
14. Engaging In Compulsive Behaviors; Repeating Certain Acts Over And Over	4	4
15. Hitting Or Hurting Themselves	1	1
16. Becoming Overly Upset When Others Touch Or Move Their Belongings	2	1
17. Laughing/giggling At Inappropriate Times	1	1
18. Ignoring Or Walking Away From Others During Interactions of Play	2	3
19. Touching Others Inappropriately	1	1
20. Engaging In Unusual Mannerisms Such As Hand-Flapping Or Spinning	4	4
21. Having To Do Things In The Same Exact Way Each Time	2	2
22. Having Difficulty Calming Themselves Down When Upset Or Excited	2	2

*Items are based on the Triad Social Skills Assessment

4. Social Skills

Directions: Please answer each item on a scale of 1-4 as it presently applies to the individual with ASD, with 1 meaning "not at all a problem "and 4 meaning "very much a problem." Please answer each item first in terms of the person's interactions with adults, and then with peers or classmates.

AFFECTIVE UNDERSTANDING/ PERSPECTIVE TAKING	TEACHER		CAREGIVER	
	With Adults	With Peers	With Adults	With Peers
1. Understand What Other People's Facial Expressions Mean?	2	3	2	3
2. Understand What Other People's "Body Language" Means?	3	2	3	3
3. Use A Wide Range Of Conventional Facial Expressions To Express Their (For Example, Raised Eyebrows To Express Surprise; A Scowl To Express Anger)?	3	4	3	3
4. Use A Wide Range Of Gestures Or "Body Language" To Communicate (For Example, Use An "OK" Hand Sign; Cross Arms When Angry)?	3	4	3	3
5. Understand That Other People Can Have Thoughts And Feelings That Are Different From Their Own?	2	3	2	2
6. Understand Other People's Perspectives In A Variety Of Situations (I.e., Put Themselves "In Another Person's Shoes")?	3	3	3	3
7. Understand What Makes Other People Feel Basic Emotions Such As Happiness, Sadness, And Fear?	2	3	2	2
8. Understand What Makes Other People Feel Complex Emotions Such As Surprise, Guilt, And Embarrassment?	2	4	2	2
9. Understand How Their Behavior Affects Or Impacts Other People?	2	4	2	2
INITIATING INTERACTIONS	**TEACHER**		**CAREGIVER**	
	With Adults	**With Peers**	**With Adults**	**With Peers**
10. Initiate Greetings To Familiar People On Their Own?	3	4	3	3
11. Invite Others To Join In Activities With Them?	2	4	2	4
12. Join A Group Of Peers Who Are Already Participating In Another Activity?	4	4	4	4
13. Ask Others In A Direct Manner For Something They Want?	2	4	2	2
14. Ask Others For Help When They Need It?	3	4	3	3
15. Start Conversations With Others?	2	4	2	3
16. Interrupt Others Appropriately?	4	3	4	4
17. Get The Attention Of Others Before Talking To Them?	4	3	4	4
18. Offer To Assist Others When They Need Help?	2	3	2	2
19. Offer Comfort To Others When They Are Upset Or Hurt?	2	4	2	2
20. Apologize In A Sincere Way For Hurting Someone, Without Being Reminded?	2	3	2	2
21. Compliment Or Congratulate Other People For Their Accomplishments Or Good Fortune?	2	3	2	2

RESPONDING TO INITIATIONS	TEACHER		CAREGIVER	
	With Adults	With Peers	With Adults	With Peers
22. Respond In A Socially Appropriate Manner When They Are Greeted By Others?	3	3	3	3
23. Respond In A Socially Appropriate Manner When Others Invite Them To Join An Activity?	2	3	2	
24. Respond In A Socially Appropriate Manner To Questions Or Requests From Others?	2	3	2	2
25. Respond In A Socially Appropriate Manner When Others Try To Start Conversations With Them?	2	4	2	2
26. Respond In A Positive Way to Compliments?	2	3	2	2

MAINTAINING INTERACTIONS	TEACHER		CAREGIVER	
	With Adults	With Peers	With Adults	With Peers
27. Interact Cooperatively With Other People (E.g., Sharing, Taking Turns, Following Rules)?	1	3	1	1
28. Have Conversations About A Wide Range Of Topics?	3	3	3	3
29. Talk About Things That Interest The Other Person?	4	3	4	4
30. Keep A Conversation Going By Sharing Information And Asking The Other Person Questions?	3	4	3	3
31. Ask For Clarification Or State Uncertainty During Conversations?	2	3	4	4
32. Stay On The Topic During Conversations?	4	3	4	4
33. Listen To What Others Say And Use This Information During Conversations?	3	3	3	3
34. Share A Conversation By Talking And Listening For About The Same Amount Of Time?	1	3	1	1
35. Maintain Eye Contact With Others During Interactions?	3	4	3	3
36. Speak In An Appropriate Tone Of Voice During Interactions (E.g., Not Too Loud, Soft, Mechanical, Or Sing-Songy?)	2	2	2	2
37. Smile To Be Friendly Or To Indicate To Others That He Like Something?	2	3	2	2
38. Respect The Personal Space Of Others During Interactions (I.e., Not Stand Too Close Or Too Far Away)?	2	2	2	2

FRIENDSHIPS	TEACHER		CAREGIVER	
	With Adults	With Peers	With Adults	With Peers
39. Understand What Others Do To Be A Friend?	4	4	4	4
40. Understand What They Can Do To Be A Friend?	4	3	4	4
41. Understand How Friends Are Different From Acquaintances?	2	4	2	2
42. Understand How To Make Friends?	4	4	4	4
43. Understand How To Maintain Friendships?	4	4	4	4

5. Communications Skills

Directions: Please describe how the individual with ASD lets you know the following communicative messages through words or actions. Indicate any method the individual uses to indicate the message. For example, if s/he does not use words, but instead takes you by the hand to request juice, you would select from the drop down menu "uses body or hand." If the individual uses words, you would select from the drop down menu "uses speech"; or if a combination of ways are used, select from the drop down menu the primary way the individual communicates the message. Rate how effective this method is using a scale of 1-4, with 1 meaning "very effective" and 4 meaning "not at all effective."

If the individual with ASD is conversational, feel free to only report on the areas that are problematic.

MAKING REQUESTS	TEACHER		CAREGIVER	
1. Food	Uses Speech	1	Uses Speech	1
2. Object	Uses Speech	1	Uses Speech	1
3. An Activity	Uses Speech	1	Uses Speech	1
4. To Use The Toliet	Uses Speech	1	Uses Speech	1
5. Attention	Uses Gestures	3	Uses Gestures	2
6. Help	Does Not Appear To Communicate For This Purpose	4	Uses Speech	3
7. Ask for leisure activity	Does Not Appear To Communicate For This Purpose	1	Uses Speech	1
8. Information	Does Not Appear To Communicate For This Purpose	3	Does Not Appear To Communicate For This Purpose	3
9. Choice	Does Not Appear To Communicate For This Purpose	3	Does Not Appear To Communicate For This Purpose	4

EXPRESSING REFUSALS	TEACHER		CAREGIVER	
1. “Go Away”	Uses Behavior	4	Uses Behavior	3
2. “No, I Won’t Do It” Or “I Don’t Want It”	Uses Behavior	4	Uses Behavior	3
3. “I Want To Be Finished” Or “I Want To Stop Doing This”	Uses Behavior	4	Uses Behavior	3

EXPRESSING THOUGHTS	TEACHER		CAREGIVER	
1. Greeting To Others	Uses Behavior	3	Uses Behavior	4
2. Comments About People/ Environment ,	Does Not Appear To Communicate For This Purpose	3	Does Not Appear To Communicate For This Purpose	3
3. Confusion or "I Don't Know"	Uses Behavior	4	Uses Behavior	3
4. Comments About Errors Or Things Wrong	Uses Speech	4	Uses Speech	3
5. Ask About Past Or Future Events	Does Not Appear To Communicate For This Purpose	3	Does Not Appear To Communicate For This Purpose	3
6. Agreement	Uses Speech	3	Uses Speech	3

EXPRESSING FEELINGS	TEACHER		CAREGIVER	
1. Angry/mad/frustrated	Uses Behavior	3	Uses Behavior	4
2. Pain/illness/hurt	Uses Speech	2	Uses Speech	2
3. Happy/excited	Uses Speech	1	Uses Speech	1
4. Hurt Feelings/upset	Uses Speech	1	Uses Behavior	1
5. Afraid	Does Not Appear To Communicate For This Purpose	3	Does Not Appear To Communicate For This Purpose	3
6. Sad	Uses Behavior	3	Uses Behavior	3

6. Sensory Challenges

Directions: Please put a check next to the item that pertains to the individual with ASD.

SOUND/AUDITORY	TEACHER	CAREGIVER
Fails To Listen Or Pay Attention To What Is Said To Them	✗	✓
Reacts To Unexpected Sounds	✓	✗
Talks A Great Deal	✗	✓
Own Talking Interferes With Listening	✗	✓
Overly Sensitive To Some Sounds	✗	✓
Makes Self-Induced Noises	✓	✓

TASTE	TEACHER	CAREGIVER
Dislikes Certain Foods And Textures	✗	✓
Will Only Eat A Small Variety Of Foods	✗	✓

SIGHT/VISION	TEACHER	CAREGIVER
Does Not Make Much Eye Contact	✗	✓

SMELL/OLFACTORY	TEACHER	CAREGIVER
Sensitive To Smells	✗	✓
Reacts Defensively To Some Smells	✗	✓

MOVEMENT/VESTIBULAR	TEACHER	CAREGIVER
Moves Parts Of Body A Great Deal	✓	✓

VISUAL/PERCEPTUAL MOTOR	TEACHER	CAREGIVER
Has Trouble With Paper/Pencil Activities	✓	✓
Has Problems With Use Of Some Tools	✓	✓
Has Difficulty With Time Perception	✗	✓
Has Problems Organizing Materials And Moving Them Appropriately	✗	✓
Has Difficulty With Body In Space, Moving Appropriately	✓	✗

7. Sensory Supports

Directions: Please put a check next to the item that pertains to the individual with ASD.

SOUND/AUDITORY	TEACHER	CAREGIVER
Likes Music	✗	✓
Likes To Sing And/ Or Dance	✗	✓
TASTE	**TEACHER**	**CAREGIVER**
Has Definite Eating Preference	✗	✓
SIGHT/ VISION	**TEACHER**	**CAREGIVER**
Enjoys Watching Moving Things/ Bright Objects	✓	✗
Likes TV, VCR, Videos	✓	✓
Likes The Computer	✗	✓
TASTE	**TEACHER**	**CAREGIVER**
Enjoys Rocking, Swinging, Spinning	✗	✓

8. Learning Skills*

Directions: Please answer each item on the scale of 1-4 as it presently applies to the individual with ASD, with "1" meaning "can do independently" and 4 meaning "cannot do at all. "

	TEACHER	CAREGIVER
1. Clearly Understands The End Goal Of An Activity, Recognizes What They Must Do To Be Finished, And Persists On The Task	2	3
2. Realizes When They Are Running Into Difficulty And Has Some Way Of Letting Someone Know They Need Help	2	2
3. Once An Activity Is Under Way, Can Walk Away From The Individual And They Will Keep Working Until Finished, Maintaining At Least Fairly Good Attention To What They Are Doing	2	4
4. Finishes Work And Remembers On Their Own To Let The Adult Know (E.g., By Bringing Work To Adult, Calling Adult, Raising Their Hand)	2	4
5. Looks Forward To Earning A Reward, Knows It's Next, Work Toward It, May Ask For It Or Go Get It On Their Own When Work Is Finished	2	4
6. Is Able To Wait Briefly For A Direction (Anticipates That They Are About To Be Asked To Do Something), Is Able To Wait Briefly For Their Turn With A Toy (Anticipating That It's About To Return To Them), And/ Or Wait For Something to Happen	2	2
7. May Be Distracted By Outside Sights And Sounds Or Inner Distractions But Is Able To Refocus Attention To Work On Their Own After A Short Time And Without A Prompt Or Reminder From The Adult	1	4
8. When One Activity Is Finished, Will Look For Another To Complete	1	4
9. Can Organize Their Responses To Perform Tasks When Multiple Materials Are In Front Of Them	1	4
10. Recognizes When One Strategy Is Not Working And Tries Another Way	2	4
11. Recognizes Their Own Mistakes And Goes Back And Corrects Them	2	4

*Items are based on the Triad Social Skills Assessment

9. **Environmental Challenges**

Directions: Describe environmental challenges of the individual with ASD Environmental challenges are factors that interfere with the person's learning Examples are loud or confusing environments, lack of emotional support or lack of sociable coworkers.

	TEACHER	**CAREGIVER**
Social Interactions With Others:	Inability To Establish Positive Routines	Not Having Friends
Communication (Understanding Others And Expressing Self To Others):	Noisy Environment/ Chaotic; People Who Don't Know Tony And Misunderstand His Behavior	People Who Are Confrontational
Learning Skills (Knowing How to Complete A Task From Start To Finish At Home, School, Or Work):	Lack Of Personal Space; Changes In Routine	Activities Or Work That Require A Lot Of Attention

10. Environmental Supports

Directions: Describe environmental supports of the child/student Environmental supports are factors that facilitate learning Examples are positive routines, use of rewards, and use of visuals supports

	TEACHER	**CAREGIVER**
Social Interactions With Others:	Establish Positive Work Routines, Develop A Positive Relationship Built On Mutual Interests And Caring	People Who Are Calm
Communication (Understanding Others And Expressing Self To Others):	Uncluttered Environment, Visual Supports, Positive Sensory Breaks	People Who Speak In A Soft Tone, Not Authoritative Or Bossy
Learning Skills (Knowing How to Complete A Task From Start To Finish At Home, School, Or Work):	Timing Of Work Activities Is Adjusted	He Likes To Receive Praise

11. Summary of Concerns

Directions: Please list one or two concerns under each area that you have about individual with ASD as they pertain to succeeding at home, community, school, and work and being a competent person.

	TEACHER	CAREGIVER
Social and Leisure Skills		
1:	Making Friends	Making Friends
2:		Not Being Confrontational To People Of Authority
Communication Skills		
1:	Acknowledging Others	Expressing Disappointments
2:	Responding to Others	Talking To Peers/Friends
Learning Skills		
1:	Completing Work Independently In A Timely Manner And Without Prompting	Staying Focused
2:		Completing A Job Until It's Done
Adaptive Skills		
1:		Being More Independent

12. Future Planning

What will this individual be doing 5 years from now?

	TEACHER	CAREGIVER
Where Will This Individual Be Living? What Will They Be Doing There?	Not Sure	In A Residential Home Or Without A Supervisor. Possibly With Just CLS Supports. I Hope Tony Will Be Able To Take Care Of Himself By Doing His Own Cooking, Cleaning, Transportation To And From Work, Money Management, Etc.
What Kind Of Work Will They Be Doing?	Not Sure	Any Work With People That He Enjoys And Pays Reasonable Hourly Rate. He Will Need Appropriate Social Skills, An Ability To Complete A Task Without Zoning Out, Ability To See What Is Needed And Do It Without Being Told Each Time, Attention To Reasonable Detail.
What Skills Are Needed?	Not Sure	Movies, SOKY Sports, Attending Other Sporting Events (Horse Racing, Etc.), Group Activities (Rec. Dept. Therapeutic Programs, Jesus Parties, Etc.).
What Leisure/ Recreational Skills Will The Individual Be Doing?	Not Sure	Friends (If He Gets Any!!) Or CLS
With Whom Will This Individual Be Doing Activities?	Not Sure	
What Choices Will They Have About Their Life?	Not Sure	I Hope Tony Will Be Able To Make The Same Choices A Typical Boy His Age Can Make.
What General Community Survival Skills Will This Individual Need?	Not Sure	How To Respond In All Situations Appropriately (E.g., Don't Get Angry At Those In Authority); How To Get Around The City Independently (Bike, Bus); How To Keep Track Of His Own Stuff (Money And Other Valuables, Etc.); How And Who To Ask For Help When Needed.
Who Will Be Providing The Ongoing Supports For Them?	Not Sure	Case Manager?

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Chapter 6
COMPASS for Hope (C-HOPE) for Caregivers of Children with Autism and Behavior

Grace Kuravackel, Lisa A. Ruble, and Mallory Bopp

Overview This chapter reviews COMPASS for Hope (C-HOPE), an adaptation of COMPASS for supporting parents and caregivers of young children with autism and behavior. We also present research findings on collateral effects of C-HOPE, including reduced child behavior and parent stress and increased parent sense of competency. We provide a case study as an example.

Helping children with autism achieve their fullest potential is the primary goal of COMPASS. To achieve this end, we must effectively support the people who have the most interaction with and responsibility for the child. Recall that COMPASS is a multilevel intervention. Changes in child behavior and learning are the result of changes in what the caregiver, teacher, service provider, or other adults do to promote child learning. Also, the COMPASS model is based on understanding the balance (see Chap. 5) between risk and protective factors.

COMPASS assumes that a child's response to a specific challenge is determined by the strengths and weaknesses to meet the challenge. The child is successful in meeting the challenge when there is balance between risk and protective factors. Personal risk factors include biological vulnerabilities, including the diagnosis of autism as well as other common comorbidities such as attention problems, anxiety, or intellectual disability. Environmental risk factors can include family, school, and other community factors and life situations that impair development. People, for example, who may not understand autism and view behavior as the result of internal deficiencies from the child may be more likely to use punishment, creating environmental challenges. Risk factors, by definition, act as threats to development; they lessen the child's ability to respond, learn, and adapt.

On the other hand, protective factors enhance development. Protective factors provide the child with necessary resources to positively impact learning and

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_6

development. Personal resources include strengths and preferences; for children with autism, these may be memory, fine motor skills, special interests, and visual learning. Environmental resources, on the other hand, are those aspects outside of the child that serve to support and augment child learning. These resources can include intervention plans based on research; people who surround, support, and understand the child; and the organizational policies and services available for the child and family.

The COMPASS framework, while implemented most extensively in schools, is flexible and readily applied to other contexts, including homes and by caregivers who seek help to understand and address concerns of behavior. COMPASS recognizes that behavior does not occur in a vacuum and is the result of imbalance. When *in* balance, behavior can be positive and promote development, but when out of balance, behavior may be negative or interfering and deter development. When it is negative, blame is often put on the child or the caregiver. But in reality, it is a consequence of a mismatch between the child's protective factors and risk factors with the risk factors outsizing and outweighing protective factors. When behavior cannot be explained by underlying medical issues, we believe that behavior is best understood as an incongruity between the person and environment. To overcome this misalliance, the environmental risk factors must be compensated by protective factors. Competence as defined by Waters and Sroufe (1983) is when an individual "is able to make use of environmental and personal resources to achieve a good developmental outcome" (p.81). In the case of autism, we expand this definition from the individual to the people who support and surround the child – parents, caregivers, family members, teachers, therapists, and others. When the people around the child are equipped, they provide the necessary environmental resources and protective factors to support child competence and success. In this chapter, we focus on COMPASS for hope (C-HOPE) that is designed to understand and support positive behavior by reducing the mismatch and discord between the child and environment. Thus, we use the terminology "problem behavior" with an understanding that this is the consequence of a lack of environmental support.

To help understand and normalize the need for attention to environmental supports for children with autism, in comparison to children with other disabilities such as mental illness, learning disorders, and intellectual disabilities (Dixon et al., 2008; Dominick et al., 2007; Holden & Gitlesen, 2006), children with autism display more behaviors perceived as challenging. According to Matson et al. (2009), almost 94.3% of children and adolescents diagnosed with autism present with these challenging behaviors at some point in their lives. These findings suggest that the discordance between child and environment is greater for those with autism compared to other children with disabilities. When children have behavioral problems, there is also an impact on the quality of life. They experience fewer community outings, have less positive interaction with peers, and have less access to intervention and education (Matson & Wilkins, 2007).

Parents and families also are impacted. Compared to parents of typically developing children, parents of children with autism report a greater sense of helplessness when facing challenges of parenting and higher stress (Neece et al., 2012;

Ingersoll et al., 2016). We recently examined several child factors that could explain parent stress – intellectual ability, autism severity, adaptive behavior, language ability, and problem behavior to see which of the factors accounted for parent stress. When they were all combined in a single analysis, only child behavior explained parent stress (Krakovich et al., 2016).

The magnitude of behavioral problems and their impact on parents makes the need for interventions to support parents a priority. Parent training as an effective vehicle of change for decreasing challenging behaviors in typical children has been demonstrated through rigorous evaluation over the past 30 years (e.g., Barkley, 1997; Kazin, 2005; Lundahl et al., 2006; Reyno & McGrath, 2006; Webster-Stratton & Reid, 2010; Zisser & Eyberg, 2010). More than 50 years ago, Schopler and Reichler (1971) proposed that parents of children with autism could serve as "cotherapists" for their children (Short, 1984). This was a significant departure from usual care at that time when parents were often blamed for their child's autism, let alone viewed as an asset for promoting their child's learning and development. Since this time, parent-mediated interventions are established as an evidence-based practice.

In addition to reducing problem behavior, parent training and support has collateral effects of decreasing parent distress and marital conflict (e.g., Kuravackel et al., 2018; Russell & Ingersoll, 2021). This chapter will review C-HOPE and research findings on collateral effects, including reducing parent stress and increasing parent sense of competency. We provide a case study as an example of the C-HOPE intervention.

Introduction to C-HOPE

C-HOPE addresses behavioral challenges by enhancing environmental supports with the people most central and critical in the lives of children with autism – their caregivers, parents, and family members. While the basic behavior principles discussed in C-HOPE apply across the age span, C-HOPE is a parenting program designed to empower parents and caregivers to best help and care for their children between the ages of 3 and 12 years with autism. C-HOPE is comprised of eight sessions. Half are individual sessions with a COMPASS trained counselor or therapist, and the other half are professionally facilitated sessions with other parents. The overall objective of these sessions is to provide information, specific to the ways children with autism learn, and provide effective, evidence-based strategies to support behavior and learning. We adapted the intervention so that it could be provided using traditional face-to-face delivery or telehealth (TH) and tested its effectiveness. In the next sections, we describe our need and rationale for COMPASS as the process for decision-making and selection of goals and protective factors to offset the mismatch between behavior and environment.

Limitations of One-Size-Fits-All

If you have known one child with autism, you have known one child with autism. This is a common expression in the autism circle. The clinical heterogeneity is a defining feature of autism (Masi et al., 2017). This bears repeating because there is no magic bullet when it comes to behavior. We must recognize that the features of autism vary greatly from child to child, including intellectual impairment, social interactions, communication, and sensory processing skills (Behrmann & Minshew, 2015; Fombonne, 2005; Hao et al., 2020; Marino et al., 2020).

Figure 6.1 shows all the developmental domains that may vary across individuals with autism. About one-third to one-half of individuals with autism have intellectual disability. Individuals with autism may be very interactive, passive, or aloof. Communication skills range and about 30% of individuals may never develop spoken speech, while many individuals may be quite verbose. Motor skills differ; some individuals may be very agile and coordinated, and others may have difficulty using utensils, holding a pencil, or walking. Lastly, sensory preferences and challenges can also be expressed differently across persons. Some individuals may be indifferent to noise or fluorescent lights, while another person may have significant difficulty. Thus, each behavior plan must account for these differences.

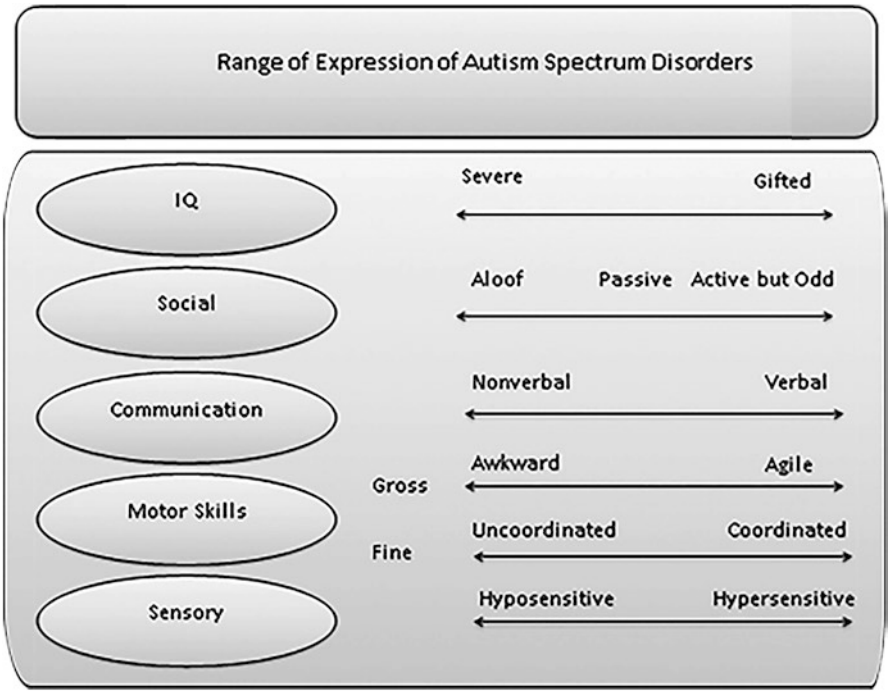

Fig. 6.1 The developmental domains the vary across individuals with autism

In addition to individual characteristics, variability in approach must also account for the interaction of specific treatment and skills being taught, parent and family variables, and cultural and environmental variables. Thus, the child's environment, including parent/caregiver preferences, strengths, and resources vary for each child must be considered. Given all these factors, it would be highly surprising and unlikely if any single intervention would be effective for all children.

Because of the need for individualization, we are guided by the evidence-based practice in psychology framework reviewed in Chap. 1 (EBPP; American Psychological Association (APA), 2006; McGrew et al., 2016). EBPPs consider the setting/ecological factors, the family/child with autism factors, and the clinician/service provider factors that need to be considered when developing any kind of intervention plan, including behavioral plans. Often, we only think about the function or purpose of a behavior and the operant behavioral techniques for increasing positive behaviors and reducing negative behaviors. This approach limits our decision-making about interventions to one factor, the evidence-based practice (EBP), while ignoring two of the other equally essential factors – the setting/ecological factors and the family/child with autism factors. Chap. 1 discusses the evidence-based practice in psychology (EBPP) framework that considers the overlapping influences necessary for effective clinical decision-making.

We adapted COMPASS for C-HOPE because we needed an intervention that community providers could implement that addressed challenging behavior. Initially, we reviewed existing parent support programs specific for families of with children with autism based on the EBPP framework (see Chap. 1). We were also interested in studies that included families from rural areas as well as urban areas because we wanted to ensure our intervention would overcome some of the issues related to access, such as distance and time required to travel and participate in person. In our review of the literature, some of the evidence-based parent programs lacked the flexibility and adaptability for application in rural areas, other programs were not individualized to the participating parent and child with autism (not based on EBPP), and yet others required costly certification training that limited accessibility and dissemination. Thus, we adapted COMPASS for C-HOPE.

COMPASS, which originated from the Minnesota Competence Enhancement Program (MCEP) developed by August et al. (1992), focuses on the individual's adaptation and resilience as viewed from a community-based prevention and intervention perspective, rather than a deficit-focused medical model which is prevalent within traditional treatments for psychopathology in clinical contexts. We believed that the EBPP framework that serves as the foundation for COMPASS could work as a parent training and behavior support intervention or C-HOPE.

COMPASS Framework as the Basis for C-HOPE

The EBPP framework and the MCEP model emphasize individualization and adaptation of instruction and therapeutic strategies. COMPASS is a process-based framework that provides an approach for the clinical decision-making needed to integrate information from three important domains outlined in EBPP (child/family factor, clinician factors, and the EBP). Because COMPASS focuses on the development of competence as a supportive factor and a buffer against challenges and failure, its focus of intervention does not simply involve reducing deficits, but instead, enhancing competence. COMPASS then goes beyond the narrow therapeutic scope of antecedent/consequence behavioral strategies to an understanding of the importance of ecological interventions. These interventions include people who have the most frequent interactions with the child (in all environmental contacts) and provide the necessary opportunity for naturalistic teaching, generalization, and skill maintenance. The EBPP framework and the MCEP model provide the foundation that allows COMPASS to emphasize individualization of teaching and therapeutic strategies.

A Collaborative Approach: Building Alliance Through Group Experience

C-HOPE is specific to the ways children with autism learn and provides information designed to empower parents. Figure 6.2 shows that when parents implement effective strategies, there is a reduction in behavior, which in turn decreases parent stress. But the counter is also true. When stress is high, the use of effective and consistent parenting strategies is more difficult to implement, which in turn results in more behavior. Thus, with C-HOPE, there is a tripartite focus – reduced child behavior, increased use of effective parenting strategies, and reduced parenting stress.

A unique dimension of this program, one that separates it from other parenting programs, is the emphasis we place on a collaborative, strengths-based approach with families. As a combined individual and group intervention, the opportunity to learn and share with other caregivers is intended to be therapeutic as well as educational. This approach requires that the facilitator(s) draws upon basic counseling skills that promote active listening and empathy. The facilitator(s) also has to be

Fig. 6.2 C-HOPE

aware of group processes for the purpose of promoting cohesion among members and to ensure that the goals and needs of the group are met.

While C-HOPE has structure, it is not intended to be "agenda driven." Instead, emphasis is placed on establishing and maintaining a therapeutic alliance with caregivers. A strong alliance with parents is critical to a good helping relationship and is associated with positive outcomes (Albanese et al., 2019; Russell & Ingersoll, 2020; Zuroff et al., 2010). Therapeutic alliance indicates agreement on what is established between a client and therapist (Goals), how it is discussed (Tasks), and the relationship between the counselor/therapist and client (Bordin, 1979). These dimensions are necessary for good work to occur whether it is in a group or individual session. In group sessions, it is important to ensure that the parents/caretakers are "rowing in the same direction" and working well together. Cohesiveness in group therapy is a form of alliance and is also critical to group members' success (Ryum et al., 2009).

A group format offers multiple advantages for families who have a child with autism. Although efficiency could be viewed as an advantage because multiple families are served at once, a group format is particularly powerful given that families who have a child with special needs have a unique understanding of the emotions and challenges that accompany such a role. A group format draws upon the concept of universality ("I am not the only one struggling"; Yalom, 1995) and offers the opportunity for families to also offer emotional support and to feel less isolation. Collectively, these families can offer helpful information for one another that typically transcends the knowledge base of any one facilitator. In other words, many families have a "lay of the land" for resources in the area and have ideas of how to work with the local schools and agencies, beyond sharing information they can offer one another support. As mentioned, many families who have a child with disabilities experience high level of distress and, compounding the situation, often feel isolated – issues especially pronounced for caregivers of children with autism.

Description of the C-HOPE Intervention

C-HOPE is manualized and available from the second author. Both group (four sessions) and individual formats (four sessions; see Table 6.1) make up C-HOPE. Group sessions are about 2 hours in duration, and individual sessions last about 1 hour. The C-HOPE curriculum includes activities that support parent-to-parent interaction as well as parent knowledge and skill. Prior to the start of the treatment sessions, parents complete the COMPASS profile (see Ruble et al., 2012) which is freely available online (compassforautism.org or in Ruble et al., 2012) and can be completed by parents. The profile guides the discussion for the first individual session and assists with promoting a holistic understanding of the child and clarifying the problem behavior and possible underlying communicative intent behind the behavior. Individual sessions primarily focus on developing, implementing, and fine-tuning the unique individualized behavior plans that target the identified problem behavior(s) and replacement skills for each child.

Table 6.1 Overview of C-HOPE session content

Session	Format	Focus of each session
1	Individual	Overview of C-HOPE and its goals, assessment and initial goal identification using the COMPASS profile.
2	Group	Introduction of parents and their child to the group based on an assessment of social, communication, and other behaviors. Discussion of unique and common characteristics of each child. Overview of cognitive theories of autism (central coherence, theory of mind, executive function) and how these relate to behavior, and local autism services and resources. The session is concluded with the introduction of a relaxation strategy.
3	Group	Direct education on principles of behavior and learning as well as proactive and reactive strategies.
4	Individual	Development of the child's personalized behavior plan using the COMPASS framework. Once the disruptive behavior is identified (behavior to decrease), the replacement skill(s) is generated (behavior to increase).
5	Group	Discussion of teaching strategies, positive behavior approaches to prevent disruptive behaviors, teach new skills, and respond effectively.
6	Group	Discussion of parents and caregivers as essential "environmental supports" for the child and the emotions associated with the diagnosis, parenting expectations, and transitions. A "wellness" package of activities designed to identify strategies for self-care and relaxation is reviewed.
7	Individual	Review of the individual behavior plan and how well it is working. Modifications to the plan may occur based on data tracking the child's problem behavior and new skills
8	Individual	Pertinent skills from previous sessions are reviewed. Progress toward the goals is examined and any modifications needed are implemented. Anticipated barriers that might arise related to the implementation of the behavior plan are discussed as well as possible proactive strategies to overcome these issues following the intervention.

The goal of group sessions is to provide basic information on autism and to help parents understand learning differences specific to autism, as well as how these learning differences impact behavior, socialization, and communication for their child. Theories such as central coherence (Happe et al., 2001; Happe & Frith, 1996), executive dysfunction (Pennington & Ozonoff, 1996), and theory of mind (Baron-Cohen et al., 1985, 2000) are discussed, and specific attention to the influence that these ways of thinking and learning can have on behaviors are considered.

Parental knowledge also includes understanding of evidence-based approaches for problem behaviors, such as functional behavior assessments including antecedent manipulation, changes in instructional context, differential reinforcement, and

self-management strategies (Schilling & Schwartz, 2004). After developing a common understanding and language (e.g., joint attention, antecedents, and consequences), parents are presented with antecedent and consequence strategies such as promoting and encouraging positive child behaviors and using environmental supports proactively to increase positive behaviors. Strategies are then written into a behavior plan specific to the child. Emphasis is placed on using positive behavior supports (i.e., environmental manipulations) designed to promote prosocial skills that are effective in reducing disruptive behaviors for children with autism (Iovannone et al., 2003; National Research Council, 2001). The environmental supports, behavior plans, consider the understanding of the antecedents or causes of behavior, making the behavior ineffective, teaching replacement skills that result in desired outcomes for the child, and rewarding positive skills.

In addition to the content described above, group sessions also target parent stress and coping skills. A variety of coping strategies for parental stress are presented, and parents are asked to identify what strategies they find helpful and what new strategies they would consider using in the future. Coping strategies include general stress reduction techniques, mindfulness-based interventions, and relaxation strategies that have been shown to have long-term positive effects on stress levels and psychological well-being of parents of children with autism (Cachia et al., 2016).

Evidence for C-HOPE

Preliminary research shows strong evidence for C-HOPE. C-HOPE has been tested in two studies. The first was a randomized wait list design that tested telehealth vs face-to-face delivery of C-HOPE. The second was a pre-posttest design that tested an online-only, self-paced approach where parents could access the training on their own time and meet virtually rather than in person with other caregivers (Kuravackel et al., 2018; Rodgers, 2018). Both studies examined outcomes of C-HOPE on primary variables of child problem behavior, parent competency, and parent stress. Secondary outcomes were group alliance and parent satisfaction. Results from the first study indicated significant pre- and posttreatment gains in the C-HOPE group with lower child problem behavior, higher parent competency, and lower parent stress as compared to the control group. Surprisingly, the telehealth modality was equally effective as face-to-face intervention, and no differences were detected regarding group alliance or parent satisfaction in either modality. Overall parent satisfaction was high across both telehealth and face-to-face modalities (Kuravackel et al., 2018). More information regarding the C-HOPE parent intervention is found in the "Encyclopedia for Autism Interventions" (Kuravackel & Ruble, 2020).

For the second study when C-HOPE was tested with the self-paced group sessions that were provided online and the individual sessions conducted using telephone, significant improvements were noted in parent stress and child behaviors compared to the baseline. No changes for parent competency were observed

(Rodgers, 2018). These findings indicate C-HOPE is an effective intervention for addressing child behavior and parent stress, with promise for also enhancing parent competency. To help illustrate C-HOPE and the activities, we present a case study.

C-HOPE Case Study

Relevant Background Information

CC is a 7-year-old male with a recent diagnosis of autism. He was referred to a specialty clinic, a regional autism center, for behavioral difficulties that involved intense meltdowns that consisted of aggressive outbursts and verbal expressions that were considered extremely "hateful" by his caregivers. These outbursts decreased in their intensity with medication; however, they continued to occur daily. He lives with his biological parents and his younger sister who is 6 years old. Family history is positive for schizophrenia and bipolar disorder. No current psychosocial stressors were reported. CC's early developmental milestones were within normal limits. His parents noted differences in behavior when he was in kindergarten and started to cry every day. No other triggers or stressors were reported during this time. His parents were quite distraught and were referred to a mental health practice where he was subsequently diagnosed with anxiety and ADHD; however, he was noted to have more social issues and trouble interacting with peers. Some sensory processing issues were also observed, and he began to receive weekly occupational therapy. He also received behavioral services. Finally, his physician referred him to be tested for autism. He received a conclusive diagnosis of autism from a private practice psychologist when he was 6 years old.

CC is in the second grade and currently has an Individualized Education Plan (IEP) which is based on the eligibility category of autism. His primary placement is general education. Based on his IEP, he receives extra test taking time and ability to take tests separately from others. He also receives some additional academic support and tutoring from a special education teacher.

Initial observations of CC indicated an active 7-year-old; his size and weight were appropriate for his age. He was quick to engage with the clinician and responded to all her questions with simple sentences that were mostly grammatically correct and intelligible. He was very object-oriented as compared to person-oriented, and his conversations were around his play interests and objects. He showed little interest in the clinician and did not engage in any reciprocal interaction. He was compliant and cooperative with the initial assessments; he showed a huge interest in art and presented the clinician with a copy of his art. He responded well to praise. He was very aware of his surroundings and oriented to persons, place, and time. His attention was adequate for the demands made on him. His overall insight into his behaviors was limited.

Due to the COVID-19 restrictions, a hybrid format of both in-person and telehealth sessions were utilized which was beneficial for the family, given that this significantly reduced travel time. In the following section, we describe the measures for implementation and to assess effectiveness and the details for each of the C-HOPE individual and group sessions.

Measures and Assessment Tools

Four tools were used to support the development of CC's intervention plan and the implementation of C-HOPE. Each is described.

1. Prior to the first session, his parent completed the COMPASS profile (Ruble et al., 2012), which is available online at www.compassforautism.org.
2. The outcome and alliance measures from the formal feedback system called the Partners for Outcome Management System (PCOMS; Duncan & Reese, 2015) were used at the start and end of each session. Specifically, the Outcome Rating Scale (ORS; Miller et al., 2003), the Session Rating Scale (SRS; Miller et al., 2003; Duncan et al., 2003), and the Group Session Rating Scale (GSRS; Duncan & Miller, 2007) were applied to monitor the level of distress of group members (ORS), therapeutic alliance in the group (GSRS) sessions, and therapeutic alliance in the individual (SRS) sessions.

   A. The Outcome Rating Scale (ORS): The ORS is a simple, four-item session-by-session measure designed to assess areas of life functioning known to change as a result of therapeutic intervention. These areas include (a) personal or symptom distress (measuring individual well-being); (b) interpersonal well-being (measuring how well the user is getting along in intimate relationships); (c) social role (measuring satisfaction with work/school and relationships outside of home); and (d) overall well-being. The ORS translates these four dimensions of functioning into four visual analogue scales which are 10-cm lines, with instructions to place a mark on each line with low estimate to the left and high to the right. The ORS is feasible for adolescents and adults. Parents completed the ORS at the beginning of each individual and group session. The ORS generates reliable scores. Coefficient alphas have ranged from 0.87 to 0.91 in validation studies and from 0.82 (Reese et al., 2009; individual therapy) to 0.92 (Slone et al., 2015; group therapy) in clinical studies.
   B. The Session Rating Scale (SRS): The SRS is a simple, four-item visual analogue scale designed to assess key dimensions of effective therapeutic relationships. The SRS measures client perceptions of the relationship with their therapist and of the session. The first three SRS items assess aspects of the therapeutic relationship based on a client's perceptions about being under-

stood and respected, relevance of session goals, and suitability of the therapist's approach (Duncan et al., 2003). The fourth SRS item measures a client's overall impression of the session.

The SRS is administered, scored, and discussed at the end of each individual session to get real-time alliance feedback from caregiver so that alliance problems can be identified and addressed efficiently (Duncan et al., 2003). Parents or caregivers complete the SRS after each individual session. Gillaspy and Murphy (2011) reported the average internal consistency of SRS scores across five studies equaled 0.92 (range 0.88–0.96). SRS scores also exhibit moderate evidence for concurrent validity with longer alliance measures; $r = 0.48$ with the Helping Alliance Questionnaire-II (Duncan et al., 2003).

C. The GSRS is a four-item visual analogue scale, designed to be a brief clinical tool to measure group-therapy alliance. The GSRS was completed by each participating caregiver at the end of each group session, to determine the quality of group alliance depending on treatment condition. The items are based on a response using a 10-centimeter line. The "relationship" aspect is assessed on a continuum of "I felt understood, respected, and accepted by the leader and the group" to "I did not feel understood, respected." The "goals and topics" aspect is assessed on a continuum of "We worked on and talked about what I wanted to work on and talk about" to "We did not work on or talk about what I wanted to work on and/or talk about." The acceptability of the approach used in the group is assessed on a continuum of "The leader and group's approach is a good fit for me" to "The leader and/or group's approach is not a good fit for me." A sense of overall fit is assessed on a continuum ranging from "Overall, today's groups was right for me. I felt like a part of the group" to "There was something missing in group today. I did not feel like a part of the group." Scores are summed out of a total possible score of 40 and averaged over the four group sessions for each participant and averaged across each treatment group per session. The GSRS shows evidence of concurrent validity, correlating with other individual alliance measures with coefficients ranging from 0.41 to 0.61 and Cronbach alphas ranging from 0.86 to 0.90 over four sessions (Quirk et al., 2013).

Table 6.1 reviews each C-HOPE session in sequence. As mentioned, there is a facilitator manual available that provides a detailed overview of each session, the necessary handouts and PowerPoint needed, and example scripts available from the second author. The case study provides a brief example of the implementation of C-HOPE with a caregiver. Also, at the beginning completed the ORS at the start of each session and the SRS for individual and the GSRS for group at the end of each session.

Individual Session #1 (Week 1)

As mentioned, at the start of each session, parents complete the ORS. The clinician (first author) explained the philosophy of C-HOPE and goals of the intervention, which are primarily to reduce child behavioral problems, improve parent competence (parenting strategies), and decrease parent stress. In advance of the first session, when possible, parents complete the COMPASS profile. If not, they may complete it during the first session. In this case, this is what CC's mother did. The COMPASS profile was reviewed with CC's mother, identifying his strengths, personal challenges, and environmental supports and challenges. Strengths noted for CC were his interest in art, being verbal, and possessing the expressive language that is often impaired with many children on the spectrum. He has good joint attention and imitation skills. Protective factors in the environment working for CC were his supportive parents and teacher. The medication that he was on for ADHD had helped improve his focus. Personal challenges noted for CC were his emotional regulation skills in that he continued to have meltdowns, at least one every day, when things did not go as planned; tantrums consisted of saying cruel, hateful statements such as "Wish you were dead" and "Wish you were not my mother/sister." Episodes also included crying loudly and refusing to comply with requests. Environmental challenges included lack of autism-specific supports, such visual supports to facilitate transition, and an organized and planned response to his behavioral outbursts and meltdowns.

The top behavior concern his parent expressed was tantrums or meltdowns. The session ended with explaining how to record on the Antecedent-Behavior-Consequence (ABC) Chart and the frequency chart. The session concluded with a discussion of preparing for the next session, which was a group session. CC's mother completed the SRS. Parent scores on the ORS, SRS, and GSRS throughout the 8 weeks are recorded in Table 6.2. Parent report from the first session on the ORS was 32, out of 40, meaning that his parent was reporting that all was not well with regard to individual, personal, social, and overall well-being. And the SRS was 34 out of 40 meaning that parent was reporting an average of 8.5 out of 10 on relationship factors with the clinician on variables of feeling heard, validated, and the overall method and approach of the clinician.

Table 6.2 Parent-reported PCOMS ratings

PCOMS ratings	1 Individual	2 Group	3 Group	4 Individual	5 Group	6 Group	7 Individual	8 Individual
ORS	32	32	32	32	36	36	36	38
SRS	34		36	40			40	40
GSRS		36			38	38		

Group Session #1 (Week 2)

In group session 1, all parents (three in total) completed the ORS at the start of the session. The clinician reviewed the schedule for the group session which included the following: (a) Completion of a group interactive activity, where each parent/caregiver completed a profile of their unique child with autism and used this to introduce their child to the group. This activity also helped demonstrate the heterogeneity of autism and the need for individualized treatment plans. (b) A review of the nature of autism, associated learning characteristics, and how to assess and evaluate therapies and treatments offered based on evidence. (c) A review of the ABC chart and frequency charts with the clinician and other group members. (d) Information on the role of stress in caregivers and the use of relaxation strategies to reduce stress. A muscle relaxation activity as a technique to reduce stress was introduced. The group concluded by completing the GSRS (Table 6.2). Overall, the ORS score was 32 out of 40, indicating an average of 8 out of 10 on the different categories assessed indicating parent-perceived issues, and the GSRS score was 36 out of 40, indicating progress in alliance with the clinician and the general direction of the session.

Group Session #2 (Week 3)

Parents began by completing the ORS. The focus of this session was on the application of behavioral principles in consideration of the core challenges of autism. The clinician referred to the iceberg model that is commonly used to explain how core impairments of social, communication, sensory, and repetitive behaviors play a pivotal role in leading to behavioral difficulties that are observed on the surface (like an iceberg), but must be interpreted because they underlie the meltdowns. The caregivers were referred to the COMPASS profiles of their child to better understand how these challenges were related to the behavior they had identified in their child with autism. After digesting the importance of understanding the function of behaviors, they were then familiarized with the concepts and use of reinforcement, rewards, and the role of punishment in increasing or decreasing behaviors. The session ended with a preferred relaxation activity and completion of the GSRS (see Table 6.2 for ratings of the ORS, SRS, and GSRS). Results from the ORS and GSRS were similar to the prior group session.

Individual Session #2 (Week 4)

CC's mother met with the clinician individually to further refine CC's personalized behavior plan to decrease tantrum behavior and replace the meltdowns with communicating his needs more appropriately. Again, using his COMPASS profile, the clinician with parent input identified that the lack of having clear expectations appeared to be related to his tantrums. Because of CC's social comprehension

difficulties, it was decided that it was necessary to teach him appropriate social behavior and expectation rather than assume that he understands. Thus because of his strengths as a reader and his like for art, a visual approach for teaching social cognitive skills was taken. The use of visual supports in intervention plans for children and adults on the spectrum are highly recommended as most individuals on the spectrum are visual learners. Visual supports are one of the common, psychosocial interventions recommended across the lifespan, for autistic people (Denne et al., 2017; National Institute for Health and Clinical Excellence [NICE], 2011). When used, visual supports have the potential to increase understanding, reduce anxiety, facilitate participation, support communication, and increase independence, thereby reducing the risk of challenging behavior and supporting inclusion (Baxter et al., 2015). Social stories (narratives) were selected as the approach. Social narratives are short stories that describe social situations in terms of relevant social cues and often define appropriate responses. For some students with autism, social stories have been successful in improving their responses to social situations within a short period of time (Gray & Garand, 1993). Thus, the behavior plan will first incorporate a social story explaining anger, identifying it, communicating the anger appropriately, and implementing a calming/coping plan and the positive social impression this choice of behavior will make. The second step was to help CC identify his own emotions and learn to express himself appropriately. Several strategies that use visual supports were used, such as video and a "feelings thermometer."

Another important aspect of the behavior plan was assessment of the antecedents preceding the behavior and how adults in the environment were responding to the behavior. From data on the ABC Chart, it became clear that CC was getting a lot of attention when he was engaging in negative behaviors. Attention ranged from suggesting alternative behaviors, urging, cajoling, to scolding. His mom shared that CC does get more attention when he is acting out because she is trying to "help him calm down." Discussion centered on how attention may inadvertently reinforce his behavior. The clinician referred to the recent group session about behavior that followed by something that is valued (a reward) is more likely to occur and be repeated. CC's mom expressed new insight into her behaviors when this was discussed.

The next step involved identifying barriers to the implementation of the treatment plan; barriers identified were "consistency" across caregivers and professionals involved in CC's life. Consistency in responding to behavior plans has frequently been stressed as an important parameter of effective child management (cf. O'Leary & O'Leary, 1977). To ensure consistency, CC's mother said that she would share the plan with his teachers and all other caregivers.

The session concluded with highlighting the importance of completing the ABC and frequency charts (see Table 6.3 for ABC ratings). For the fourth week, his mother observed that the behavior occurred seven times during the past week. This number has been consistent since the first week. In collaboration with his parent, a goal attainment scale was developed for CC. For more information on goal attainment scaling, see Chap. 5. It was determined that CC would reduce his negative behaviors by 25% each week and replace these behaviors by communicating his preferences and his emotions. Lastly, his mother completed the SRS scale. With the

Table 6.3 Parent-reported frequency chart

Frequency	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Problem Behavior	7	6	6	7	4	5	3	1
Replacement Behavior	0	0	0	0	4	2	3	5

ORS, his parent continues to report similar scores indicating difficulties in the areas assessed, possibly an impact of CC's behavior; however, the SRS showed significant improvement with a score of 40 indicating progress in alliance with the clinician and the general direction of the session.

Group Session #3 (Week 5)

This session focused on positive parenting strategies such as how to be "proactive" vs "reactive" and how to communicate expectations in a clear manner. CC's mom reported that she was familiar with many of these proactive strategies as they related to CC; however, hearing about them again with other parents played a role in reinforcing concepts and giving her opportunity to share her progress over the past week. The participants also reviewed autism-related supports, such as visuals that could be used as schedules to support children with a predictable timeline of activities that facilitated transition from one activity to the next. Almost all participants commented on the trouble their children had with transitioning, especially from a desired to an undesired activity. The group session ended with a relaxation routine and the completion of the GSRS. Results from the ORS and GSRS were 36 and 38, meaning definite improvement in parent-perceived issues on the ORS; alliance was a little down to 38 from 40 of the previous group; this could be because it was a group session vs an individual session.

Group Session #4 (Week 6)

This session was different from all other sessions. The focus in this session was being a parent and the unique journey that each parent faces when they have a child with autism. In this session, parents were able to understand that their own feelings of sadness, isolation, and/or guilt were a normal process in coming to terms with the realization that they may not experience the type of parenting that they expected. Through sharing with other parents, CC's mom felt that the group session helped "normalize" her experience, that she was not the only parent to feel "stress," and that this stress has taken a toll this has on her life like other parents. They also learned that taking care of one's stress was paramount to taking care of their families. This session as usual ended with a relaxation routine and the completion of the

GSRS. Results from the ORS and GSRS were similar the prior session, meaning not much changed in the perception of perceived difficulties and alliance.

Individual Session #3 (Week 7)

In this session, the clinician reviewed CC's behavior plan and progress with CC's mom. His mother reported that considerable improvements had been noted since the introduction of the behavior plan, especially in the first 2 weeks. Following the 2 weeks, frequency had increased to three times in the current week prior to this session, and the week was only halfway. In reviewing the behavior plan and discussing the antecedents and responses, both the clinician and CC's mother determined that CC was not motivated to follow the schedule and still had difficulty understanding the implications of his behaviors on others and himself. It was decided that a token system with a highly motivating reward was needed to keep his motivation going. It was also ascertained from the ABC Chart that his mother was using more verbiage after each meltdown and that ignoring was hard for her to do. The clinician explored with CC's mother how she felt when she ignored CC's negative behaviors. His mother reported that strong feelings of guilt would overcome her when she ignored him. The clinician validated her feelings and then sought her decision on how she wanted to proceed. It was decided that a token chart will be introduced. On a daily basis, CC would have the option of earning five tokens. At the end of the day, the tokens could be exchanged for a dollar amount as he was saving money for a game. His mother also decided to use positive self-statements regarding the impact of her behavioral responses such as "I am doing this to help CC" to counteract her feelings of guilt when ignoring him.

Individual Session #4 (Week 8)

In the last session, the clinician reviewed the behavior plan. CC's mother reported success. She noted that the token system was working well. Although the first few times when he had lost his token, he was better able to communicate his choices and feelings when things had not gone his way. This was a big improvement from saying hurtful things to his mom or lashing out. The goal attainment scale for the past week showed 80% improvement in using alternative positive behaviors (walking away, communicating his feelings, taking deep breaths). His frequency chart showed one behavior outburst (milder version, involved crying and stomping feet) which indicated an 85.7% decrease in meltdowns. The ORS and SRS are clearly higher, indicating the least perceived challenges in the four areas assessed and the maximum alliance with the clinician. His mother overall appeared to indicate higher alliance with the clinician during individual sessions. Frequency of behavior decreased from daily to just one over the entire week, with CC engaging in more adaptive replacement behaviors as indicated in the frequency chart.

Three-Month Follow-Up with CC

CC's mother reported sustained improvements in behavior with ups and downs often related to inconsistency, when reinforcements were no longer rewarding for CC, or contingency of these reinforcements needed some tweaking. Overall, she confirmed that she gained understanding that his behaviors could be managed by being proactive and using the recommended autism supports to prevent behavioral issues. She also had attained some mastery in understanding how parent behaviors could be modified when behaviors presented.

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Chapter 7
What Matters in COMPASS Coaching with Teachers: Method or Amount?

Lindsey Ogle and Lisa A. Ruble

Overview Providing teachers opportunities to obtain feedback on their teaching practices is critical for effective coaching. This chapter compares and contrasts different types (electronic or face-to-face feedback) and dosages (amount) of performance feedback and coaching in COMPASS and lessons learned.

We know from previous research on evidence-based practices (EBPs) that teachers need support not only in developing intervention plans targeted to student's individualized goals but in implementing them with fidelity (Sam et al., 2021). In the research and practice literature, the terms consultation and coaching are sometimes used interchangeably, but in COMPASS we define the initial meeting in which intervention plans are developed as the "initial consultation" and follow-up implementation support with performance feedback as "coaching." Coaching is an evidence-based method for improving teachers' implementation of high-quality intervention plans and EBPs (Beidas et al., 2012; Dunst et al., 2015; Kraft et al., 2018; Kretlow & Bartholomew, 2010; Ogle et al., 2023). However, many questions remain in terms of best practices in teacher coaching, such as how much coaching is necessary and does coaching have to occur in-person or can coaching delivered over the internet work equally well? The purpose of the chapter is to answer some of these questions.

Coaching is a complex intervention that requires training and practice to do well. In education, coaching is highly individualized to the specific needs of the teacher and usually focuses on discreet skills related to teaching quality and student progress over time (Beidas et al., 2012; Kraft et al., 2018; Kretlow & Bartholomew, 2010). An essential element that defines coaching is performance feedback and progress monitoring both on the quality of teaching and the students' responsiveness to that instruction in terms of engagement and goal attainment. Performance feedback encompasses quantitative data (e.g., adherence to the intervention plan and student goal attainment progress) and qualitative observations (e.g., engagement, enthusiasm, and tone). Research has shown that performance feedback that is

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_7

mostly positive is associated with the largest impact on behavior (Sleiman et al., 2020), so knowing how to deliver constructive criticism in such a way that empowers and encourages is a critical skill for coaches as it builds rapport and alliance (see Chap. 6 for more about alliance and its importance).

Autism-focused teacher coaching builds upon these foundational coaching skills and combines it with specialized knowledge of the characteristics of autism, evidence-based practice, and high-leverage practices that are critical to the development of effective educational programming for students with autism. However, developing intervention plans that best meet the specific learning needs of a student with autism is a process that requires refinement and adjustment overtime. Starting off with a high-quality intervention plan that incorporates evidence-based practices is an important first step, but even the most carefully designed plans will need to be adjusted to meet the changing needs and interests of the student. Coaching with performance feedback and progress monitoring can support this process by providing a structured way to evaluate change over time and creatively problem-solve personal and environmental challenges that may be limiting the student's potential.

Coaching with performance feedback and progress monitoring has long been accepted as an evidence-based professional development intervention as teachers who receive support in implementing high-quality intervention plans have improved adherence to the teaching plans and improved student outcomes (Brock et al., 2020; Hamrick et al., 2021; Ogle et al., 2023; Ruble et al., 2010, 2012, 2013, 2018). However, many questions remain regarding the relative effectiveness of specific frequencies (i.e., dosage) and modalities (i.e., type) of coaching in terms of teacher adherence and acceptability and student goal attainment outcomes. The purpose of this chapter is to present what we learned about the training (see Chap. 2 for more information about our training package) and feedback required for school consultants to implement COMPASS coaching sessions. We begin by reviewing coaching and how it is applied in COMPASS.

COMPASS Coaching

COMPASS is unique in that it is a comprehensive intervention that not only provides teachers and caregivers support in identifying individualized goals and developing high-quality intervention plans adapted to the personal needs of the student but also because it includes a system of supporting teachers in the implementation of those plans through coaching. COMPASS was originally developed to include four face-to-face coaching sessions to support teachers in implementing the intervention plans. We know that the initial meeting identifying goals and developing intervention plans is an essential element of COMPASS, but we have been focused in recent years on understanding the nature of support teachers need in implementing plans with high fidelity following the initial consultation session.

In standard COMPASS, four follow-up coaching sessions are generally scheduled roughly 4–6 weeks apart following the initial consultation, which should

ideally occur in the first 2 months of the academic year. The goal is to provide consistent, reliable, and helpful implementation support to the teacher and caregiver. To that end, each session follows a consistent format that involves the teacher, coach, and caregiver, if present, watching teacher-made videos of the implementation of each intervention plan together and using those videos as the basis for (1) rating the student's goal attainment progress for each skill on a five-point, goal attainment scale (e.g., −2 = present level, −1 progress, 0 = goal, +1 exceed goal, and +2 greatly exceed goal); (2) problem-solving any issues with implementing the intervention plans; and (3) adapting the plans as needed to the changing needs of the student. Viewing the videos together allows the teacher and coach to problem-solve more effectively. Often teachers will comment how they did not realize they were doing something in a certain way or with a certain frequency (e.g., excessively prompting the student without giving time to respond) which can aid in problem solving. This process is repeated for each of the student's goals and concludes with a coaching summary that outlines the student's goal attainment progress and what was changed in the intervention plans. To support the fidelity of implementation of the process, a COMPASS Coaching Guide (Appendix A) was developed for consultants outlining the steps of the coaching session in addition to a template COMPASS Coaching Report that summarizes what was observed on the videos, a summary of what was discussed regarding the intervention plans, and the student's goal attainment progress. A short one page Coaching Caregiver and Teacher Survey was also developed for consultant feedback. When in training, consultants received a summary of their fidelity of implementation of coaching (Appendix B) that evaluates adherence to the coaching protocol, GAS prorgress determined as rated by the consultees, teacher adherence to the teaching plan, consultant adherence to the coaching components, consultant coaching process skills, feedback from teachers and caregivers, and intervention plan feedback from the teacher.

COMPASS seeks to involve caregivers as much as possible in the implementation process and views caregivers as essential to the ultimate goal attainment success of the student. When parents and caregivers are involved in the education of their children, teachers often put out more effort to support students. To that end, caregivers are invited to attend all coaching sessions including by phone or through video calls. However, we recognize that this may not be possible for many caregivers, so regardless of whether the caregiver chooses to attend or not, they are still provided with a report of their child's goal attainment progress and a summary of what was discussed at the coaching session, including any changes that were made to the intervention plan. It is important to keep caregivers updated on what strategies are being implemented in the school setting so that caregivers are kept informed about their child's goal progress and changes to the intervention plan and are able to provide feedback on home and community progress and changes. This involvement improves teacher-caregiver alliance and ultimately student goal attainment outcomes (Ruble et al., 2022).

Research and Approach Behind COMPASS Coaching

COMPASS coaching incorporates the research-supported elements of performance feedback (Brock et al., 2020; Hamrick et al., 2021) and video self-reflection (Morin et al., 2019; Nagro & Cornelius, 2013) that together promote teachers in improving their instruction. However, the approach COMPASS takes to coaching is what sets it apart from other coaching methods. The goal in COMPASS coaching is to support teachers' self-efficacy and skill development through guided self-reflection and problem-solving. Focusing on improving teachers' self-efficacy in teaching students with autism is especially important research has demonstrated that increased self-efficacy is (a) positively correlated with student outcomes and teachers' successful engagement of students during lessons and (b) negatively correlated with stress (Love et al., 2020). Approaching coaching with the attitude of being an "expert" giving advice without regard for the teacher's point of view is generally poorly received by teachers, and this can inadvertently undermine the relationship between the coach and teacher (Ogle et al., 2023). In focus groups conducted prior to the development of the COMPASS training package, teachers and caregivers both discussed challenging experiences with consultants who disregarded their point of view (see Chap. 2). Simply put, no one responds well to having their knowledge and expertise minimized or ignored, and that is especially true of teachers and caregivers who have the most direct knowledge of and experience with the student. It is essential for coaches to approach the coaching session with empathy by demonstrating strong active listening skills, avoiding interrupting, asking relevant questions, and reinforcing the teachers efforts. This builds therapeutic alliance (Bordin, 1979; see Chap. 6 about therapeutic alliance) between the teacher and coach which then provides the foundation for work toward the shared goal of enhancing the student's goal attainment progress through improved teacher instruction.

Together, these research-supported components and approaches have been highly impactful in improving teacher and student outcomes in COMPASS (Ruble et al., 2010, 2013, 2018). Ruble et al. (2013, 2018) found that teacher's adherence significantly increases over four coaching sessions, and that adherence is associated with improved student goal attainment outcomes. This finding has been consistent regardless of the experience level of the teacher and the support needs of the student, suggesting that coaching in COMPASS is highly adaptable to the specific needs of the teachers and students (Ruble et al., 2010, 2013, 2018; Ogle et al., 2023). However, multiple face-to-face coaching sessions is a resource-intensive intervention, so we have been systematically investigating alternative approaches to reduce burden related to time and scheduling and increase efficiency. Specifically, we have compared and contrasted several methods of providing implementation support to teachers that include the essential components of video self-review and performance feedback on adherence to the intervention plans and student goal attainment outcomes.

Coaching Modality

Virtual Coaching

To begin to address the need for less resource-intensive coaching, we looked to web-based or virtual coaching. The advantage of virtual coaching was that it did not require the consultant to travel to the teacher. Also, it allowed other participants to attend who may not be at the school. For consultants who work in large rural districts or urban schools, time for traveling could be costly. Thus, to answer the question about modality, we designed and conducted two studies. For the first study, we compared face-to-face and virtual coaching versus a control group (Ruble et al., 2013). For the second study, we expanded our questions to include not only the modality of coaching but also the amount of coaching (Ogle et al., 2023). We review the findings in the following section.

The first study comparing virtual coaching to traditional face-to-face coaching and a control was done using a video conference software (Adobe Connect, Zoom, Skype, etc.) The virtual, web-based coaching implemented in the study consisted of the same activities completed in the face-to-face modality. The same overall structure of reviewing video of the instruction with the child, scoring goal attainment progress, and problem-solving occurred. Much to our surprise, no differences in teacher satisfaction, teacher adherence to the intervention plans, or child goal attainment outcomes were observed between the two different coaching modalities (Ruble et al., 2013). *These findings point to virtual coaching as a viable and effective approach for supporting teachers.*

Emailed Performance Feedback

Another option that has been explored in our research is how performance feedback is provided. We developed an electronic report that was emailed to teachers and compared outcomes to traditional face-to-face or virtual coaching. The feedback form (see Appendix C) that was completed by the coach after viewing the video included each goal and the corresponding goal attainment scale, a description of the intervention plans, a place to note what rough percentage of the intervention plan elements were observed in the video (e.g., 0%, 25%, 50%, 75%, or 100%), and a place for comments and suggestions. Nine community-based consultants were trained to implement COMPASS and help test the effectiveness of electronic feedback. Together, the nine consultants worked with 28 sets of teachers, caregivers, and students with autism of which nine received one coaching session or one performance feedback report, nine received two or four sessions/reports, and ten received no follow-up after the initial consultation. Results indicated that similar to virtual coaching, performance feedback delivered via an emailed report was shown to be equally as effective as face-to-face coaching in improving student goal attainment

outcomes (when compared to those who only received the initial consultation with no follow-up) (Ogle et al., 2023). This finding is preliminary and needs to be researched further, but it does have some important implications for practice as delivering electronic feedback through a report rather than having a meeting, whether face-to-face or virtual, takes considerably less time for both the coach and teacher and requires even fewer resources.

Choosing a Modality of Feedback

Given that our research shows face-to-face coaching, virtual coaching, and emailed performance feedback produce similar outcomes (Ruble et al., 2013; Ogle et al., 2023), the choice between them is up to the coach and teacher. Some may have a strong preference to meet face-to-face, while others would prefer the convenience of meeting virtually due to scheduling or travel challenges. Virtual coaching is a great alternative to face-to-face coaching as it follows the same format and still allows for the development of a close coach-teacher relationship and active problem-solving. Coaching is also an effective way to support teachers who may have less experience or be less confident in designing and implementing educational programming for students with autism. An experienced coach can use the time in coaching to train the teacher in EBPs and model a problem-solving approach that can be used for other students in the future. It may also be helpful for students with complex or more severe needs where it is anticipated that the intervention plans initially developed may need to be tailored over time to best meet the needs of the student.

However, teachers who are more independent and confident in their ability to problem-solve may prefer to receive an emailed report rather than have a meeting. A report is far less time-consuming for teachers and coaches and is a viable alternative to coaching while maintaining the essential elements of accountability through performance feedback that supports improved adherence to the intervention plans and student outcomes. It could also potentially be equally effective to use a mix of different approaches depending on what the teacher needs over time. For example, a teacher may want to start with coaching to get the problem-solving support in tailoring the intervention plan to the student's needs but then transitions to receiving a performance feedback report once an effective plan is developed that the teacher has higher self-efficacy in implementing. While our research confirms that it is essential that teachers receive implementation support following the development of the intervention plans during the consultation (Ruble et al., 2013; Ogle et al., 2023), ultimately the method used should be up to the coach and teacher as they appear to be equally effective. Thus, communicating the benefits and disadvantages of the different modalities when choosing a follow-up approach with the teacher is important.

Frequency and Dosage of Performance Feedback Matters in COMPASS

What has emerged in our research as impactful on both teacher adherence and student goal attainment outcomes is the number of opportunities (i.e., dosage) for performance feedback a teacher receives (Ogle et al., 2023). There is little agreement in the field at large about how much performance feedback and coaching a teacher needs to demonstrate high-quality instruction and positive student outcomes. In a meta-analysis investigating coaching efficacy, Kraft et al. (2018) found that 27% of studies reported 10 hours or less of one-to-one coaching, 23% reported 11–20 hours, and 23% reporting 21 or more hours. Despite this wide range, they found no consistent relationship between the amount of coaching received and the quality of teacher instruction or student achievement (Kraft et al., 2018). This lack of relationship was also found in a separate meta-analysis (Brock & Carter, 2017) which found no relationship between the duration of training and quality of teacher instruction. This is in contrast to Sleiman et al. (2020) meta-analysis across multiple settings (e.g., human service organizations, schools, retail stores, and restaurants) that did find a relationship between the frequency of coaching (daily or weekly) and improved outcomes ($d = 0.6$ for 81% of the studies; Md = 0.78; $n = 96$; large effect size). This finding of the importance of multiple coaching sessions was supported by yet another meta-analysis (Noell et al., 2014) that found that coaching that included performance feedback and self-monitoring was associated with improved student outcomes.

In our study, the highest outcomes were seen in those who received more than one opportunity for performance feedback in the form of an emailed report or face-to-face coaching session (Ogle et al., 2023). These students on average slightly exceeded their annual IEP goal set at the initial consultation (i.e., 0.23 mean GAS score). While having two or more opportunities for coaching was important, there was no significant difference found in those who received one opportunity for performance feedback and those who only received the initial consultation with no follow-up. This finding highlights the importance of receiving multiple opportunities for feedback over time; in our study, at least two coaching/feedback opportunities were critical. Students whose teachers received less than two opportunities for feedback on average did not achieve their IEP goal at the end of the school year. This same pattern was repeated for the teacher's adherence to the intervention plans. Thus, when making decisions about how much coaching or performance feedback to provide to teachers, it is important to provide at least two and ideally four opportunities that are no more than 4–6 weeks apart.

Conclusion

While high-quality goals and intervention plans are essential components of high-quality educational programming for students with autism, implementation support for teachers with performance feedback on their adherence to the intervention plans and student goal attainment progress is necessary to help students gain their full potential. On average, students whose teachers received two to four coaching sessions or electronic feedback not only attained their annual IEP goal but exceeded it. This was in stark contrast to those who did not receive any follow-up from the initial consultation or who received just one opportunity. On average, these students did not attain their annual IEP goal at the end of the school year. The method in which performance feedback is delivered by the coach (e.g., face-to-face, web-based, or electronic report) was not related to teachers' fidelity of implementation or students' goal attainment outcomes meaning that the decision between the modality for feedback be based on preferences of the coach and teacher. While these results are preliminary and more research is needed, the amount of support provided by the coach may matter more than the method.

Appendices

The COMPASS Coaching Guide (Appendix A), COMPASS Coaching Feedback Protocol (Appendix B), and COMPASS Emailed Feedback Form (Appendix C) are available to download and print for free on our website at:
https://compassforautism.org/blank-forms/

Appendix A: COMPASS Coaching Guide

Audio record coaching session – State names of those present and the date at the beginning of the recording
Check that the teacher and parent received the consultation or from the coaching report.

- Ask if there are any questions
- Ask if any changes have occurred, including any changes to the IEP

Ensure everyone present has a copy of the most up-to-date teaching plans and the GAS form

Repeat the following steps for all three goals

1. Watch the video of the implementation of the teaching plan with those present
2. Score the GAS form based on what was observed in the video. You can also provide a second rating if the teacher thinks that typical performance was not on the video.

3. Update the teaching plan:

(a) Ask teacher to walk you through the teaching plan and explain what was done or not done/what is working or not working and review Common Elements in the plan.
(b) Problem-solve with the teacher any additional personal and environmental challenges and supports that may need to be addressed, modified, added, or maintained.

Common Elements:
1. Meaningful, goal-directed activity
2. Obtain and maintain attention
3. Initial request from teacher/peer/environment is understood by child
4. Wait time of 3-5sec after initial request & between prompts
5. Clear reinforcement

4. Ask the following:

(a) Do you keep data on the skill?

☐ No (provide examples to teacher) ☐ Yes (review data)

(b) How many times a day/week is this goal worked on? _____

_____

(c) Who usually instructs the skill? ☐ Teacher ☐ Teaching Assistant ☐ SLP ☐ Peers ☐ Other

Have you trained the other person instructing this skill on the teaching plan? ☐ Yes ☐ No

After three goals have been reviewed

1. Ask the teacher (and caregiver if present) to complete the Coaching Survey.
2. Complete your Coaching Consultant Survey.
3. Confirm the date and time for the next coaching session.
4. Send Coaching Summary & Updated Teaching Plans to Caregiver and Teacher with a reminder of the date of the next coaching session.

COMPASS Coaching Report

Student: _____ Date: _____

Teacher: _____ Consultant: _____

Others Present at Coaching Session: _____

Communication Goal:

Observation of Video:

Discussion (Updates and changes made to the Teaching Plan):

Goal Attainment Progress Score from Video and Teacher Ratings:

Social Goal:

Observation of Video:

Discussion (Updates and changes made to the Teaching Plan):

Goal Attainment Progress Score from Video and Teacher Ratings:

Learning Goal:

Observation of Video:

Discussion (Updates and changes made to the Teaching Plan):

Goal Attainment Progress Score from Video and Teacher Ratings:

Future Plans:

COMPASS Coaching Caregiver & Teacher Survey

Please rate today's coaching session by circling a number on the line nearest to the description that best fits your experience.

I did not feel heard, understood, and respected	1 2 3 4 5 6 7 8 9 10	I felt heard, understood, and respected
We did not work on or talk about what I wanted to work on and talk about.	1 2 3 4 5 6 7 8 9 10	We worked on and talked about what I wanted to work on and talk about.
The consultant's approach is not a good fit for me.	1 2 3 4 5 6 7 8 9 10	The consultant's approach is a good fit for me.
There was something missing in the consultation today.	1 2 3 4 5 6 7 8 9 10	Overall, today's consultation was right for me.

Adapted from Johnson, Miller, & Duncan, 2000

Comments:

1. Are the teaching plans clear to you?

◯ Not at all clear ◯ Somewhat unclear ◯ Somewhat clear ◯ Very clear

2. Are the teaching plans relevant to the goals?

◯ Not at all relevant ◯ Somewhat irrelevant ◯ Somewhat relevant ◯ Very relevant

3. Are the teaching plans realistic to implement within the context of your classroom?

◯ Not at all realistic ◯ Somewhat unrealistic ◯ Somewhat realistic ◯ Very realistic

4. Are the teaching plans appealing to you? Do you like the teaching strategies in the plans?

◯ Not at all appealing ◯ Somewhat unappealing ◯ Somewhat appealing ◯ Very appealing

5. Are the teaching plans consistent with your values and teaching philosophy?

◯ Not at all consistent ◯ Somewhat inconsistent ◯ Somewhat clear ◯ Very clear

6. Are the teaching plans effective enough to help your student achieve the goals?

◯ Not at all clear ◯ Somewhat unclear ◯ Somewhat clear ◯ Very clear

Appendix B: COMPASS Coaching Feedback Protocol

A. **Abridged Protocol Checklist**

Instructions: Below are the steps that make up the abridged protocol for a COMPASS consultation. Check if the consultant:

1. Observe the student demonstrating each targeted skill/objective/goal with the teacher_____	☐
2. Review and rate the Goal Attainment Scale (GAS) form _____	☐
3. Complete the COMPASS Coaching Form for each objective _____	☐
4. Complete Post-Coaching Surveys _____ _____	☐
5. Complete Coaching Summary & Send to Teacher and Parent _____	☐

B. **Goals & GAS Scores**

Instructions: Insert the text for the three goals identified during the consultation. GAS is rated on a −2 to +2 scale with 0 meaning that the student achieved the goal. Teaching Plan Adherence is rated on a 0–4 scale: 0 = No components implemented, 1 = 1–25% implemented, 2 = 26–50% implemented, 3 = 51–75% implemented, 4 = 76–100% implemented. Common Elements total score

	GAS scores			Teaching plan adherence	
	Teacher	Consultant	Supervisor	Consultant	Supervisor
Communication Goal:					
Social Goal:					
Independent Learning Goal:					

C. **Fidelity Checklist (Coaching Adherence)**

Instructions: Below are the components of the COMPASS coaching session. Mark with an "X" the following boxes for the elements that occurred during the coaching session.

	Consultant	Supervisor
1. *We reviewed the consultation/coaching written summary report and answered questions.*		
2. We reviewed the most current teaching plan and updated the written plan to reflect current teaching strategies for each objective.		
3. We evaluated the goal attainment of the child's most current level of progress on the skills.		
4. After the observation of each skill, the consultant began the discussion by asking the teacher about thoughts on what was observed.		

	Consultant	Supervisor
5. We discussed at least one idea (what teaching methods to keep in place or what teaching methods to consider changing) for each objective.		
6. If the student was not making as much progress as desired on an objective, we discussed the student's personal challenges that might be impacting progress on skills.		
7. If the student was not making as much progress as desired on an objective, we also discussed the student's environmental challenges that might be impacting progress on skills.		
8. To counter the personal challenges related to an objective, we identified at least one personal support (e.g., a reinforcer, strength) to continue to use, add, or adapt in the teaching plan.		
9. To counter environmental challenges related to an objective, we identified at least one environmental support (e.g., instructional method, visual support) to continue to use, add, or adapt in the teaching plan.		
10. We discussed other environmental factors (student, teacher, or caregiver related) that might be helping or hindering the student progress either directly (health issues) or indirectly (home or classroom issues) on accomplishment of the objective.		
11. We reviewed and rated the GAS Form for each objective the teacher/student demonstrated.		
12. We obtained the rating of the student's most consistent and representative level of progress over the past two-week period.		
13. For each objective, we discussed how often the skill is taught, if data are being kept, and problem solved any data collection issues.		
14. We discussed generalization plans (e.g., who else is working on this skill with the student; where else does the student practice this skill; how is information being shared with other school personnel about this skill) for each objective.		
15. The overall tone set by the consultant during the session was collaborative (e.g., positive tone; positive feedback: "I think you're doing a good job in the classroom"; providing information; initiating joint activities: "Let's focus on social problems right now").		
16. The overall tone set by the consultant during the session was empowering (e.g., the consultant asked open-ended questions to encourage teacher problem solving and self-reflection; the consultant helped to develop teacher confidence in ability to impact change).		
Total score	**/16 %**	**/16 %**

D. **Coaching Process Skills Checklist**

Instructions: Teachers, consultants, and supervisors have rated the following items on a scale of: 0: Not present, 1: Attempted, 2: Competent, 3: Superior

The consultant…	Consultant	Supervisor
1. Shared feedback, information, and resources only after the teacher shared her/his thoughts and ideas		
2. Acknowledged the teacher's point of view		

The consultant…	Consultant	Supervisor
3. Identified important points regarding the teacher's needs and directions		
4. Summarized, paraphrased, and clarified		
5. Pursued issues assertively		
6. Reinforced the teacher's efforts		
7. Actively listened (e.g., maintained eye contact, nodded head, uses "uh huh" and non-verbal types of communication)		
8. Was empathetic, accepting, and broad-minded		
9. Asked relevant questions (clear, concise, open)		
10. Avoided interrupting, asking misdirected questions, and wandering off topic		
11. Demonstrated accurate knowledge of the teacher and student (e.g., student need and progress, classroom curriculum and routines)		
12. Demonstrated accurate knowledge of assessment and intervention techniques		
Total score		

E. **Session Rating Scale**

Instructions: Teachers rated the session on a 1–10 scale (10 being the most positive). Adapted from Johnson et al., 2000

		Parent	Teacher
Relationship:	I felt heard, understood, and respected.		
Goals or Topic:	We worked on and talked about what I wanted to work on and talk about.		
Approach or Method:	The consultant's approach is a good fit for me.		
Overall:	Overall, today's session was right for me.		
Comments:			

F. **Intervention Plan Feedback Scale**

Instructions: The teacher rated the three teaching plans developed on a scale of 1= Not at all to 4 = Very much.

	Teacher
1. Are the intervention plans clear to you?	
2. Are the intervention plans relevant to the goals?	
3. Are the intervention plans realistic to implement within the context of your classroom?	
4. Are the intervention plans appealing to you? Do you like the teaching strategies in the plans?	
5. Are the intervention plans consistent with your values and teaching philosophy?	
6. Are the intervention plans effective enough to help your student achieve the goals?	
Total score	

G. **Summarized Supervisor Feedback**

Areas of Strength:

Areas for Growth:

Appendix C: COMPASS Emailed Feedback Form

GOAL ATTAINMENT					
-2 Present level of performance	**-1** Progress	**0** Expected level of outcome (GOAL)	**+1** Somewhat more than expected	**+2** Much more than expected	**Rating**
Comments:					
INTERVENTION PLAN					
Who/ Where/ When: **Materials:** **Data System:**					
Teaching Plans			**Describe what was observed/ not observed**		**Adherence Rating**
Pre-Teaching Activities: **Teaching Sequence:** **Plans for Maintenance, Self-Direction, & Generalization:**					____ _____% of intervention plan components implemented.
Comments:					

Note: Teaching Plan Adherence Rating: 0 = No components implemented, 1 = 1–25% of components, 2 = 26–50% of components, 3 = 51–75% of components, 4 = 76–100% of the components

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Part III
New Directions for Implementation Science with COMPASS and Better School-Based Outcomes

Chapter 8
COMPASS for Middle School Mental Health

Kristin M. Rispoli and Gloria K. Lee

Overview The purpose of this chapter is to describe an innovative application of COMPASS for promoting mental health in adolescents.

Mental Health and Autism

Mental health difficulties, including anxiety and depression, affect a large portion of autistic youth (Hudson et al., 2019; Kerns et al., 2020; Simonoff et al., 2008). Both anxiety and depression relate to poor academic and social outcomes (Kim et al., 2000; Pellecchia et al., 2016) and suicidality in children and adolescents with autism (Horowitz et al., 2018). Adolescence is a time of major transition, often accompanied by the onset of puberty. Physiological, physical, and social changes set the stage for increased vulnerability to mental health difficulties in some youth. Anxiety and depression are among the most common mental health concerns in adolescent youth, with prevalence estimates ranging from 4% to 9% in all children and increasing nearly twofold in adolescence (Bitsko et al., 2022). In 2020, Kerns and colleagues published the first population estimate of mental health conditions in youth with ASD ages 3–17 years (N = 42,383) and found 77% of these individuals were diagnosed with at least one mental health condition (i.e., anxiety, depression, behavior problem, Tourette syndrome, ADD/ADHD, and substance abuse disorder) and 49% experienced more than two conditions. These estimates are similar to previous population estimates (Totsika et al., 2011).

Autistic youth often experience receptive communication challenges and associated delays in information processing (Wallace et al., 2016) and expressive language difficulties, such as appropriate expression of emotional distress that interfere with mental wellness (Rattaz et al., 2013). For a population that likewise relies on

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_8

predictability and routine as ways to maintain well-being, physical, physiological, and personal changes are often markedly disruptive and further contribute to increased vulnerability to emotional difficulties. The most recent and global example of such change is the COVID-19 pandemic, which interfered with youths' routine functioning across the home (Colizzi et al., 2020) and school settings (Manning et al., 2021). Some estimates suggest that rates of mental illness doubled during the pandemic (Molano, 2021) and youth with autism experienced more long-lasting emotional difficulties compared to other youth with special needs (Toseeb & Asbury, 2023).

Despite the well-established prevalence of mental health needs among all youth, more than half of these individuals in the United States and worldwide lack sufficient services (Ghafari et al., 2022; Whitney & Peterson, 2019). Schools are a highly accessible, no-cost resource for youth and their families, and are ideally situated to respond to the significant need for increased mental health services (Whitney & Peterson, 2019). Though schools are the primary provider of youth mental health services (Greenberg et al., 2017), they are often under-resourced and have recently experienced profound demands as a result of the COVID-19 pandemic.

Evidence-based treatments to address mental health needs in youth with autism are primarily available through private, specialized providers. This service gap creates barriers to critical support. These students are also sorely underrepresented in autism research, which largely focuses on students in the early grades and in more recent years, those preparing to transition out of high school (Gelbar & Volk, 2017).

Social-Emotional Learning and Mental Health

Given the large proportion of youth with mental health needs who are not adequately supported and schools' high level of access to youth and their families, there is a need for models that efficiently promote mental health and effectively do so for youth with autism. The COMPASS model is a mechanism by which efficient and effective mental wellness supports can be integrated into school programming for autistic youth by building upon existing school-based frameworks. Fortunately, a framework already exists to guide schools in fostering student prosocial behavior and mental wellness: social-emotional learning (SEL).

SEL is the process by which evidence-based practices are applied to promote social-emotional and academic growth in students. Family-school-community partnerships are a core component of SEL, with the intent to establish meaningful collaborations to serve students in current contexts and the future (CASEL, 2022). SEL is centered on five key skills: self-awareness (understanding one's emotions, personal goals, and values), self-management (regulation of emotions/behaviors), social awareness (perspective taking, empathy, and compassion), relationship skills (communication, cooperation, and conflict resolution), and responsible social and behavioral decision-making (Weissberg et al., 2015). In a seminal meta-analysis, Durlak et al. (2011) cited positive effects of 213 SEL programs on students'

social-emotional competence and academic performance and a reduction of behavioral and emotional concerns. Accordingly, 27 US states have adopted K-12 SEL standards and nearly all states provide some support for implementing SEL in classrooms (Dermody & Dusenbury, 2022).

Social-emotional learningis universal by design or intended for all students. In the multitiered service systems used by schools, universal programming will likely benefit approximately 80% of all students. The remaining 20% will require additional, targeted, and intensive support, and autistic youth often fall within this group. Likely due to the general format of traditional SEL, which fails to account for the unique deficits in social communication, interaction, and behavioral and cognitive flexibility characteristic of autism, youth with autism make limited progress in SEL programming (Wong et al., 2015). The consequences of failing to achieve adequate social-emotional competence in these youth are severe, including high rates of internalizing difficulties (e.g., anxiety and depression; Kerns et al., 2020) and poor academic and social outcomes (Pellecchia et al., 2016). Given the difficulties in self-regulation and social awareness, characteristics of autism, these youth require specialized and adapted individualized support to complement existing, universal SEL programs.

Provision of Tier 2 and 3 Mental Health Supports Via COMPASS

In US school systems, the Multi-Tier System of Supports (MTSS) framework is supported by the Individuals with Disabilities Education Act (IDEA, 2006) to differentiate the levels of support needed to ensure students with disabilities have equitable access to the general education curriculum. MTSS facilitates a proactive approach to identifying and supporting students with academic or behavioral needs with early assessment and interventions. Key components include universal screening of all students early in the school year; tiers of interventions that can be amplified in response to levels of need; ongoing data collection and continual assessment to inform decision-making; wholistic supports for students' social, emotional, behavioral, and academic success through prevention and intervention efforts; schoolwide approach to expectations and supports; and parental involvement (Strein et al., 2003).

Tier 1 (universal or primary) constitutes interventions or instructions that encompass 75–90% of students. This structural level has the goal of building positive relationships between staff and students, using tools such as proactive classroom management strategies. Much of SEL implementation occurs at the Tier 1 level, including efforts such as direct instruction on SEL competencies and embedding SEL values into schoolwide behavioral expectations (CASEL, 2022). The Tier 2 (secondary) level encompasses services for about 10–25% of students. An example offered in this tier is small "lunch buddy" groups designed to support social skill

gains. The Tier 3 (tertiary) level provides the highest level of support and is intended to serve less than 10% of students. Services offered are often individualized supports and can include assistance from outside agencies, such as behavioral counseling or family therapy.

Given that SEL services in schools are largely concentrated at the Tier 1 level and are not designed to address the unique and complex socio-emotional needs of youth with autism, the COMPASS model is well positioned to provide individualized support at Tiers 2 and 3 level for autistic youth and can complement existing universal SEL programs. When adapted to address mental health (COMPASS-MH), COMPASS targets mental health needs by engaging relevant stakeholders across the school and home settings, including special education teachers, parents, other school mental health professionals, and when appropriate, autistic youth. COMPASS, by design, addresses the core needs of autistic youth, including social, communication, and behavioral challenges, in addition to specific mental health concerns. Therefore, COMPASS-MH promotes an individualized and specialized approach that is still embedded in the school service system. COMPASS-MH teaching plans can be integrated across all tiers of service provision at a level that matches the youth's needs. This individualized approach is important when supporting SEL competencies in autistic youth, given evidence that auxiliary skills, namely, executive functioning, are associated with SEL in this group (Berard et al., 2017; McKown et al., 2009). Moreover, teachers, parents, and other practitioners are supported in using evidence-based practices to address SEL competencies, promoting skill transfer from a trained consultant to the individuals who interact most frequently with the youth.

Evidence-based treatments to address mental health needs in youth with ASD are limited and primarily available through private, specialized providers. This service gap creates barriers to critical care for youth with autism whose families lack the time, proximity, or financial resources needed to access these specialized supports. COMPASS facilitates the provision of evidence-based practices, typically only accessible through specialized providers, by forming meaningful collaborations between school professionals (e.g., ASD consultants, special education teachers, and social workers), parents, and students. School-based consultants are trained to deliver an evidence-based model for promoting interdisciplinary and interagency collaboration that reduces barriers to care by empowering school providers and families with knowledge and a model for efficient use of resources. In the following section, we briefly review the COMPASS model and its empirical support and then introduce the emphasis on family school collaboration central to the COMPASS-MH adaptation to address social-emotional competence of autistic youth in the middle school grades.

COMPASS is a research-supported model for collaboration between special education teachers of youth with autism, their parents, youth themselves, and other relevant professionals. Stakeholders work together across a comprehensive consultation and coaching process in which youth individualized education program (IEP) goals are adjusted to promote implementation of evidence-based teaching plans that

target key needs. COMPASS is implemented in schools across a full school year, beginning with the initial, 3-hour consultation session and followed by four, one-hour coaching sessions. (See Fig. 8.1 for an illustration of the COMPASS-MH team.)

Results of randomized controlled trials of COMPASS in elementary and high school grades indicated effect sizes between 1.1 and 2.1 on students' IEP goal attainments in social, communication, and work/learning skills (Ruble et al., 2012, 2018). An important facet of the COMPASS model is its focus on promoting collaboration between key stakeholders for youth with ASD. Accordingly, parent-teacher alliance is associated with positive outcomes following COMPASS (Ruble et al., 2019b) underscoring the importance of parental involvement in mental health intervention for these youth (King et al., 2014).

COMPASS is widely applicable across autistic youth given the use of a broad consultation framework to develop individualized teaching plans and inclusion of established community providers, when needed, for expert support. Inclusion of community ASD experts promotes deep collaboration across systems and addresses barriers in access to mental health care by providing coordinated support through students' educational home (school). ASD expert involvement is time- and resource-efficient, promoting sustainability and ongoing impact by transferring skills to school- based providers. Thus, the application of COMPASS to address social

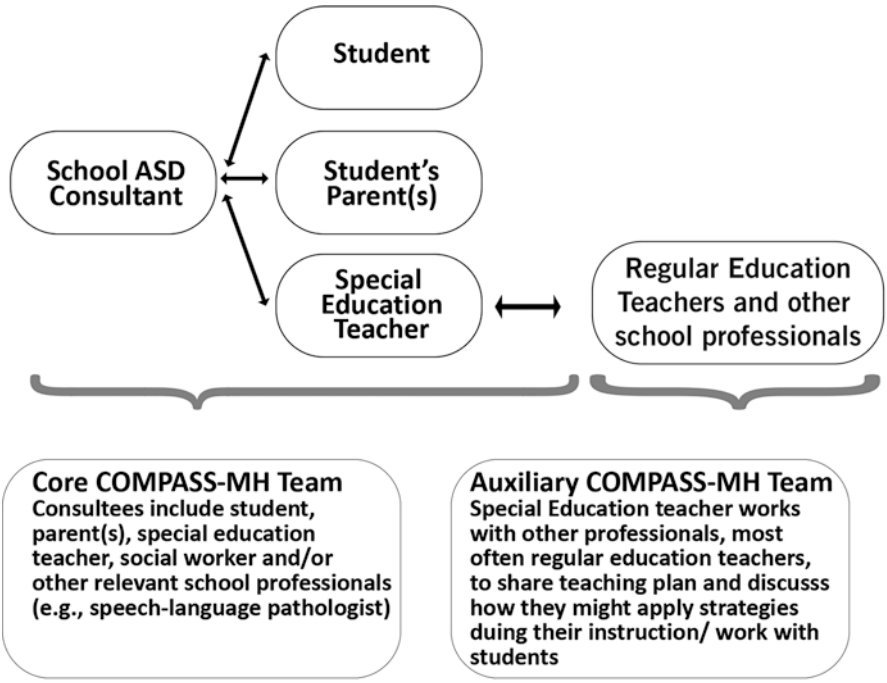

Fig. 8.1 COMPASS-MH team

emotional competence for students with ASD is adaptable to the individual needs of youth. Overall, COMPASS-MH can increase access to behavioral health services by fostering multidisciplinary, coordinated care via students' educational homes.

Family School Collaboration to Promote Mental Health in Youth with Autism

An important facet of the COMPASS model is its focus on promoting collaboration between key stakeholders for students with ASD. These stakeholders include teachers, caregivers/parents, and other school professionals (e.g., social workers, counselors, and psychologists). Relationships between teachers and parents have long been established as critical to academic outcomes (e.g., Henderson & Mapp, 2002) and mental health (King et al., 2014). Indeed, parent-teacher alliance is associated with skill gains following COMPASS (Ruble et al., 2019b). A large body of literature has examined family-school partnerships, characterized by youth-centered approaches that include cooperation, collaboration, and coordination across school personnel and parents/caregivers to promote student outcomes (Garbacz et al., 2015; Sheridan & Kim, 2015). These approaches are associated with myriad of positive outcomes for students, including increased prosocial skills (Menting et al., 2013), positive interactions with peers, and increased self-regulation (Neitzel & Stright, 2003). Sheridan et al. (2019) reported moderate effects of family-school partnership interventions on children's mental health and social-behavioral skills. COMPASS-MH is aligned to the components of family-school partnerships, including (1) shared roles and responsibilities between families and educators; (2) active collaboration; (3) the targeting of both home and school contexts in intervention activities; and (4) multidirectional flow of communication (Garbacz et al., 2015).

The COMPASS-MH program enhances opportunities for parental engagement in COMPASS through required attendance (in person, or virtually) at all coaching meetings (optional in other applications of COMPASS) and participation in virtual psychoeducation about supporting student and family mental health needs. Psychoeducation is provided to ensure that parents understand basic concepts related to social-emotional learning and coping skills to promote mental wellness in youth and across the entire family system. Intentional inclusion of parents in coaching is expected to strengthen parent-teacher alliance through repeated, regular, and collaborative engagement of parents in treatment planning and teaching skills implementation. There is an increased focus on skill transfer to parents to increase continuity of teaching strategy use across the school and community settings, where opportunities to support healthy coping and mental wellness are often present.

Brief Introduction: COMPASS-MH

COMPASS-MH is a curriculum that is built upon the original COMPASS model (Ruble et al., 2012, 2019a) and adapted to focus on the promotion of SEL skills and mental wellness in the adolescent years, when mental health issues are often exacerbated for youth. By targeting the core SEL skills of social awareness, relationship skills, decision-making, self-awareness, and self-management, as well as cognitive, behavioral, and emotional self-regulation skills associated with mental wellness, COMPASS-MH intends to build social-emotional competence and reduce negative behaviors and emotions (McKown et al., 2009) across a school year. Expected long-term effects of COMPASS-MH are increased protective factors (e.g., social skills) and reduced mental health concerns such as anxiety and depression.

COMPASS-MH uses a more intentional focus on parental engagement than in previous applications of the COMPASS model to promote positive family-school partnerships, a cornerstone of SEL, and to support skill attainment across contexts in both the school and home settings. Specifically, it is necessary that parents attend all coaching meetings across the school year, in which the COMPASS-MH team discusses the use of teaching strategies and youth progress toward goal attainment. This level of participation is optional in other iterations of the COMPASS model. Moreover, parents are invited to participate in self-directed, virtual psychoeducation about supporting youth and family mental health needs. This component is intended to ensure that parents have adequate foundational knowledge about the purpose and importance of SEL, how they can support SEL skills in the home and community settings, and how to promote healthy coping among autistic youth and across the entire family unit.

COMPASS-MH Components

The COMPASS-MH intervention is composed of four basic components. The first component is consultation which consists of one 3-hour or two 1.5-hour sessions. Consultation sessions occur within the first 2 months of the school year and include a parent, teacher, youth (optional), and relevant school professionals involved in supporting SEL skills. Consultation is guided by information already provided by the parent and teacher in the COMPASS-MH Profile (student's current SEL skills and needs). Responses are combined in the COMPASS Joint Summary (COMPASS Profile) and used to guide discussion across each SEL area during consultation. Consultants facilitate collaborative goal setting and teaching plans for each needed SEL area. IEP quality is subsequently improved with the introduction of specific, measurable goals linked to evidence-based practices in supporting social-emotional competence. Improved IEP quality is associated with increased gains on students' IEP goals following teaching plan implementation (Ruble et al., 2010). See Chap. 3 for more information about IEP quality.

Teaching plans are the second component of COMPASS-MH. Using the Joint Summary form (COMPASS Profile), consultants collaboratively establish/revise youth IEP goals in SEL to reflect shared understanding of strengths/weaknesses and create teaching plans to support each goal. Consultants incorporate evidence-based strategies in teaching plans, using resources such as the National Professional Development Center on Autism Spectrum Disorders (http://autismpdc.fpg.unc.edu) and Ohio Center for Autism and Low Incidence: Autism Internet Modules (OCALI; http://www.autisminternetmodules.org). These resources are shared with parents and teachers and linked to student's specific goals in SEL skills, socialization, and emotional regulation. Goals and teaching plans are documented by the consultant and shared with teachers and parents to guide plan implementation.

The third COMPASS-MH component consists of four 1-hour coaching sessions. These coaching sessions include all consultation participants (i.e., teacher, parent, and student if applicable) and occur periodically (typically every 4–6 weeks) throughout the rest of the school year. COMPASS-MH consultants review data collected by teachers and parents to determine success of the teaching plan and observe video recordings of teacher/parent implementation to determine fidelity of plan implementation. Teaching strategies and/or goals are refined as needed to maximize outcomes. In traditional COMPASS, parents are invited to participate in coaching sessions. In COMPASS-MH consultants encourage regular parent participation in these sessions, since parents are also expected to implement teaching strategies in the plan in the home and community settings, and thus should be active contributors in receiving feedback, determining progress, and making adaptations to the plan during coaching sessions.

The fourth COMPASS-MH component is parent psychoeducation. Virtual, self-directed training via an online learning system includes instruction on SEL skills, mental health needs of youth with autism, how to support SEL skills at home, and skills for effective family coping. Each module includes videos, slide presentations, resources, and parent self-assessments. Parents complete the training at their own pace throughout COMPASS-MH. Consultants provide two periodic virtual check-ins to address questions and elaborate on concepts addressed in the psychoeducation curriculum.

The purpose of the parent psychoeducation program is to help parents and caregivers familiarize themselves with the social-emotional learning skills targeted through regular SEL programming in schools and to develop knowledge of how to provide specialized support to bolster these skills for autistic adolescents. Parents are not assessed on their use of the program but are encouraged to continue to stay engaged through automated, weekly email reminders to complete each module. The program is designed to be completed in the month prior to the initial COMPASS-MH consultation session, but parents never lose access to the program and can return to the information as they progress through coaching, or after.

COMPASS-MH Case Example

The COMPASS-MH intervention capitalizes on the foundational foci of the COMPASS model – shared discussion and decision-making – to identify critical SEL skills predictive of successful adult outcomes, which are often missing from the IEPs of autistic youth. In their evaluation of 20 IEPs of a high school sample of autistic students, Findley et al. (2022) found that most IEP goals focused on academic skills (see Chap. 3). Alternatively, while 90% of IEPs identified a need for developing students' social skills, less than 25% of these students' IEPs included a social goal. COMPASS-MH addresses the need for increased focus on SEL skills associated with personal and social success in autistic youth.

The following case study ("Isaac") is presented to illustrate the use of COMPASS-MH. The case was created by the authors and informed by their experiences working with multiple autistic youth, and therefore does not reflect specific details of a single individual.

Background and Presenting Concerns

Isaac Laghari is a 13-year-old autistic, cisgender adolescent. He lives at home with his mother, an accountant; his father, a medical assistant; and his older sister (16 years old, not autistic). Isaac was described by his parents as quiet and easily irritated by everyday frustrations. Isaac was most often triggered by difficulty with schoolwork and competition. In addition to ASD, Isaac was diagnosed with a reading disability in fifth grade and struggled with reading fluency and comprehension. Though not attributed to a disability, Isaac also had difficulty with algebra. His grades were described as low average, with the lowest grades often occurring in English language arts and math.

Isaac was respectful and generally followed directions in classes; however, he became explosive when he had trouble with in-class work or was told he answered a question incorrectly during group participation. Explosive behavior often consisted of calling the teacher a derogatory name, using explicit language, and destroying his schoolwork. He also became explosively angry during physical education and competitive games in academic classes when he felt that another peer or team broke the rules, or when he and his team lost the competition. This concern was echoed by Isaac's parents, who reported that he had been asked to leave three of his soccer games this season following angry outbursts on the field directed toward fellow players and referees. These outbursts occurred approximately one time each week and resulted in an office referral in school on two occasions during the current trimester. Moreover, Isaac often became "stuck" on the perceived cheating behavior or loss and would engage in frequent arguing with teammates and persons in authority (e.g., referees and teachers) to emphasize his perspective about the perceived transgressions.

At home, Mrs. Laghari reported similar outbursts occurring during homework time. She noted that homework time often devolved into a "screaming match" between her and Isaac and that his homework was often incomplete as a result. Isaac and his father often "butted heads," and his father noted that he felt Isaac needed to "toughen up" and deal with his frustrations quietly.

Socially, Isaac identified a few classmates as friends, though his parents noted that his interactions with the classmates were limited to school. Isaac reportedly indicated an interest in spending time with friends outside of school but was unsure what they would do or how to arrange for such an event. In recent weeks, Isaac's parents noticed that he became more withdrawn, often indicating that he did not want to leave the house when the family was planning an outing. They noted that he has limited interests, and his previous interest in building hobby cars seemed to wane more recently. Isaac's algebra teacher noticed that his outbursts seem to be getting more frequent and observed that peers often stare and make comments under their breath after the outbursts. He further noted that Isaac was often alone when walking to class.

COMPASS-MH Team

Given concerns with his outbursts in class and difficulty managing his mood, Isaac's ELA teacher, Ms. Barry, consulted Isaac's special education teacher, Mr. Reid, about how she could support Isaac's success. Mr. Reid, knowing that these concerns were long-standing for Isaac, reached out to the school ASD consultant, Mrs. Jones, who was recently trained in the COMPASS-MH program. Mrs. Jones first reviewed Isaac's IEP to familiarize herself with his learning profile and current IEP goals. She also consulted Mr. Reid to understand the nature of the concerns. After gathering preliminary information, Mrs. Jones determined that the COMPASS-MH program would be a helpful avenue by which the entire team could collaborate to address Isaac's needs. Mrs. Jones asked the school social worker, Ms. Lenz, to participate in the COMPASS-MH process along with Isaac's parents and Mr. Reid. Ms. Lenz worked with Isaac one time per week to address social skills and support coping skills.

COMPASS-MH Consultation and Coaching

Mrs. Jones first asked Mr. and Mrs. Laghari and Mr. Reid to complete the COMPASS Profile form (available online at compassforautism.org). This form served as the basis for understanding Isaac's unique profile of strengths and areas for growth related to his mental health at home and at school. Isaac and his parents were asked to complete the freely available Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1997 and Patient Health Questionnaire-9 (PHQ-9;

https://adaa.org/find-help/treatment-help/self-screening) to screen for symptoms of anxiety and depression. Mrs. Jones also reviewed Isaac's most recent Re-evaluation Report conducted 1 year prior to re-assess Isaac's eligibility for special education. Finally, Mrs. Jones consulted Mr. and Mrs. Laghari and Mr. Reid to discuss whether it might be appropriate for Isaac to attend and collaborate with the team on developing goals and teaching strategies to support his social-emotional and mental health goals. The group agreed that this would be appropriate, and Mrs. Jones and Mr. Reid met with Isaac to solicit his feedback. Together, they determined that Isaac would attend the final 10–15 minutes of each meeting, as he felt strongly about being involved in the process but recalled that long meetings in which details of his behavior were discussed often led to increased feelings of inadequacy.

Review of the re-evaluation (school) report revealed that Isaac demonstrated average cognitive ability but was reported by his teachers and parents to struggle with executive functioning (e.g., task management, self-monitoring, and self-awareness) and adaptive skills (i.e., communication, socialization, and tasks of daily living). The report also revealed parent- and teacher-reported concerns with externalizing issues.

Consultation Meeting

Prior to the meeting, Mrs. Jones reviewed responses to the COMPASS profile form submitted by Mr. and Mrs. Laghari and Mr. Reid. Throughout the consultation meeting, Mrs. Jones led the group in discussing their responses to each domain covered in the profile, including social, communication, behavioral, and emotional functioning. She led the group in discussion of how their responses compared to findings of Isaac's school evaluation report and responses on the SCARED and PHQ. Additionally, Mr. Reid presented the school's social-emotional learning (SEL) learning standards, and the group discussed Isaac's current skill levels in relation to each standard, as well as what strategies were used regularly in classes to support these skills.

As the group discussed Isaac's strengths and areas for continued growth, Mrs. Jones made notes on themes in the information provided by each stakeholder, as well as possible target skills for the teaching plan. After all domains were reviewed, Isaac was invited to join the group. Mrs. Jones then summarized the discussion and invited Isaac and the others to comment on any inaccuracies. Mrs. Jones also invited Isaac to provide additional information that he felt was important to add to the discussion. Following the summary, Mrs. Jones led the group in identifying three goals to address that aligned with SEL standards. The group agreed that self-awareness and self-management, relationship skills, and social awareness were three SEL skill areas for which Isaac required higher-level (i.e., Tier 2 and Tier 3) supports than were provided through SEL lessons delivered in his regular education classes (i.e., Tier 1).

After the meeting, Mrs. Jones completed the COMPASS Joint Summary form with measurable, objective goals related to each of the targeted skills (see Table 8.1). She used Psychometric Equivalence Tested Goal Attainment Scaling (PET-GAS; Ruble et al., 2012) to establish clear criteria for measuring Isaac's progress, ranging from present level of performance (−2) to much more progress than expected (+2). She submitted the form to all stakeholders and asked for their review and corrections. Once finalized, the teaching plan became active, and all who were responsible for implementation began to use the plan to promote Isaac's SEL skills. Mr. Reid updated Isaac's IEP with the goals established in the teaching plan to ensure they were documented as part of Isaac's educational program.

Coaching Meetings

Mrs. Jones scheduled the first coaching session 1 month after the initial consultation meeting. All team members were invited to attend and discuss Isaac's progress on goals. Three additional consultation sessions occurred approximately every 6 weeks across the remainder of the school year. Isaac's progress was assessed at each meeting using data obtained throughout the monitoring period. Data included teacher and parent observation, school performance data (e.g., rates of homework completion), and progress monitoring on goal attainment.

During each of the four coaching meetings, Mrs. Jones invited all participants to contribute their observations and data related to each of Isaac's three goals and provided feedback and support for teaching strategy implementation. Per the plan established at the outset of the COMPASS-MH process, Isaac attended the last 10 minutes of each coaching meeting, allowing him time to hear Mrs. Jones' summary of what was discussed, contribute his own perspective, and talk with the group about any plans for adjusting the plan in the future.

For space purposes, the description of each coaching session is focused only on the self-awareness and self-management goal. In a typical COMPASS-MH coaching session, all three goals would be discussed, and progress would be monitored using the same process described below.

At the first coaching session, held in January, Mr. Reid reported that Isaac had approximately one outburst per week in his class over the past month. Isaac's parents provided a video of Isaac completing his homework one evening in which he somewhat successfully used a self-monitoring system to evaluate his attention to the task and use of breaks when he was feeling overwhelmed. The video depicted Mrs. Laghari providing Isaac with a prompt to refer to the self-monitoring checklist every few minutes and a reminder that he could ask for help when Isaac appeared to become agitated during a math problem.

Table 8.1 SEL-focused goals and teaching strategies for Isaac

SEL skill area	Goal	Persons responsible for implementation	Teaching strategies
Self-awareness and self-management	Isaac will demonstrate self-awareness of his frustration regarding homework by taking a break or asking for help in 75% of occurrences of agitation per homework session	Isaac, Mr. and Mrs. Laghari, and Ms. Lenz	Isaac will use a self-monitoring checklist reminding him to take a break/ask for help when needed Mr. and Mrs. Laghari will provide verbal prompts to use the self-monitoring checklist as needed Ms. Lenz will complete emotional identification exercises using visuals to help Isaac increase self-awareness of signs of agitation
Relationship skills	Isaac will demonstrate good sportsmanship skills (i.e., accepting loss, refraining from outbursts when others do not follow rules, encouraging teammates who perform poorly) during physical education, competitive games during academic classes, and on his soccer team, in 80% of the competitive event	Ms. Lenz, Mr. Reid, and Mr. and Mrs. Laghari	Ms. Lenz will provide direct instruction about how to demonstrate positive behaviors during competition Ms. Lenz will develop a coping strategy menu with Isaac and engage him in practice exercises to engage his coping strategies Mrs. and Mr. Laghari will provide Isaac with a visual reminder of his coping strategies when he is experiencing frustration over others' performance during competition
Social awareness	Isaac will use positive conflict resolution skills when experiencing conflict with a peer or adult, in 75% of opportunities	Ms. Lenz, Mr. Reid, and Mr. and Mrs. Laghari	Ms. Lenz will provide direct instruction in conflict resolution Mr. Reid will use video self-monitoring to record Isaac role-playing positive conflict resolution skills with a peer following direct instruction on these skills Mr. and Mrs. Laghari and Mr. Reid will use modeling and verbal prompting to help Isaac gain adaptive social conflict skills

Mr. Laghari voiced concerns that the number of steps contained on the self-monitoring checklist made it difficult for Isaac to use efficiently throughout his homework sessions. The team accordingly worked to reduce the number of items on the checklist to those considered critical for skill building. Using both the verbal input and review of recorded data, the group agreed that Isaac made expected progress and achieved a score of 0 on the PET-GAS (Ruble et al., 2012, 2022) for his goal.

At the second coaching session held in March, Ms. Lenz noted that Isaac's ability to independently identify coping skills he can use when working through difficult school assignments increased steadily over the past several weeks. Mr. and Mrs. Laghari described improvements in homework time, noting that Isaac required fewer prompts to remain calm and persevere with his work when he experienced frustration. However, Isaac continued to require reminders to use his self-monitoring tool during homework completion. Mr. Reid noted that outbursts in class remained at a rate of approximately 1 per week. Together, the team agreed that Isaac made expected progress (PET-GAS score of 0) on his goal.

In May, at the third coaching session, Isaac was described as making considerable improvements at home. His parents noted that something seemed to "just click" with his use of the self-monitoring system, and he was independently completing his work with little to no frustration each night. Mr. Reid likewise described decreases in the duration of outbursts observed in classes. He noted that at times, Isaac appeared to begin experiencing frustration but would stand and stretch his arms and then return to his work with little disruption. Ms. Lenz reported increases in Isaac's self-awareness. She noted they just began to discuss the role of automatic thoughts in anxiety and how these thoughts can affect behaviors. Given the progress noted, the team agreed that Isaac's progress was somewhat better than expected (PET-GAS score of +1).

During the final coaching session, held in early June, Isaac's parents reported some slight increases in agitated behavior at home. They noted that it was typical for Isaac to experience increased activation as he anticipated the transition into the summer months. However, they reported continued improvement in Isaac's independent homework completion. Isaac was now initiating and completing his homework without prompting. He also regularly checked his grades using the school's online portal and discussed his plan for addressing any grades below a "C." Ms. Reid reported that Isaac was struggling to identify automatic thoughts he experienced before and during homework difficulties but that he was demonstrating increased understanding of the connection between thoughts, behaviors, and emotions. Mr. Reid indicated that Isaac's outbursts in class decreased to approximately one time every 2 weeks. Collectively, the group agreed that Isaac's progress was somewhat better than expected (PET-GAS Score of +1).

During the final coaching meeting, Isaac's parents shared a video of him completing homework with increased independent use of the self-monitoring

checklist. Mr. Reid shared Isaac's recent grades and homework completion rates, noting steady increases in several subject areas. Mrs. Jones prompted the group to discuss how they could continue to support Isaac's self-awareness and self-management skills in the future. They agreed that the goals should be revisited the following fall and adapted as necessary for Isaac's IEP given his skill level at that time. Mr. and Mrs. Laghari reported they enrolled Isaac in a summer social skills group meant to support these skills in adolescents. Isaac expressed some hesitancy toward attending the group but noted that he enjoyed feeling less stressed during homework and was willing to give the group a try. The team committed to using a combination of report, observation, and product review to assess Isaac's progress with his goals in the upcoming academic year.

COMPASS-MH Parent Psychoeducation

Simultaneous with the initial data collection and consultation session, Isaac's parents were invited to access the COMPASS-MH online parent psychoeducation program. This program provided four informational modules including Social-Emotional Learning Overview, Support for Social-Emotional Functioning in Autistic Youth, Positive Behavioral Supports for Youth with Autism, and Coping as a Family. Included in each self-directed module was a narrated power point presentation, self-reflection questions, and a discussion board for parents to anonymously post and discuss questions related to each topic. One ASD consultant in the school district was assigned as the parent training facilitator and was responsible for monitoring and providing responses when needed to the discussion boards.

Next Steps for COMPASS-MH

The building of evidence-based intervention is imperative in providing services that can benefit the population of study. COMPASS has accumulated strong evidence in supporting social, communication, and work/learning skills (Ruble et al., 2012, 2018) as a consultation-based mechanism to establish individualized goals and integrate evidence-based practices for students with ASD. Mental health issues are a persistent issue in school settings (Rattaz et al., 2013) and have been exacerbated by recent social stressors such as the pandemic (Colizzi et al., 2020) and school shootings (Gregory & Park, 2022). Given resource scarcity that often impedes the quantity and quality of available mental health services (Knapp & Wong, 2020), innovative methods of service delivery must be utilized to capitalize on existing resources. By training school personnel and families to partner and

implement individualized teaching strategies to boost SEL skills in autistic students, COMPASS-MH seeks to increase available supports for mental health across the school and home settings without adding significant costs (e.g., time and resources). To determine if this goal can be fully realized, systematic implementation and evaluation are necessary.

Next steps for COMPASS-MH include feasibility testing parent components and evaluation of its overall efficacy when implemented by school-based consultants in diverse school settings. Research is needed to understand effects of the program on students' mental well-being and social-emotional goal attainment. Future research should also identify potential mechanisms of action, or mediators, of intervention effects such as parents' knowledge gains following psychoeducation and alliance with the school consultant, as well as fidelity of implementation of teaching plans. There is also a need for information regarding implementation factors including acceptability, appropriateness, feasibility, and costs of the program. With additional research support, we hope that COMPASS-MH will promote collaboration and coordination of care among school providers, families, and students to efficiently promote mental health and reduce the need for extended cost- and time-intensive therapies.

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Chapter 9
COMPASS Across Settings

Lisa A. Ruble, Bryan M. Parsons, John H. McGrew, and Bernie Hoffman

Overview This chapter describes an innovation for COMPASS called CAST—COMPASS Across Settings (CAST), a recasting of COMPASS that includes the same coaching support provided to teachers but expanded to include all individuals (student, pre-employment specialists, caregivers) working in concert to produce successful transitions.

Effective transition is measured by what happens after school. Life after school includes being involved in the community, making friends, pursuing hobbies, working, learning, and living a full life—goals we all wish to achieve. COMPASS emphasizes a holistic view of outcomes and quality of life (QOL) and the need for interventions based on shared decision-making and co-creating goals and plans. COMPASS also aims to reduce ableism by rethinking "good outcomes." In other words, redefining success in adulthood means dismantling the traditional conceptualizations of "normal" adult social development and independence as the markers of a successful outcome. Using a normative view discounts, misrepresents, and underestimates the accomplishments of autistic adults and ignores the impact that environment has on success or failure. At its base, COMPASS acknowledges that competency comes from the interaction between a person and environment. When personal and environmental challenges are counterbalanced and outweighed by personal and environmental supports, competency and success is achieved (see Fig. 9.1).

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Fig. 9.1 COMPASS balance

In Chap. 5, we presented our results of COMPASS for transition-age youth. Our results led to a need that we address in this chapter. We describe an innovation designed for more direct support to caregivers and autistic youth for implementing plans related to goals following school. We begin this chapter with an overview of what is known about transition outcomes for autistic youth and reasons related to poor outcomes. We conclude with a description of COMPASS Across Settings (CAST), a recasting of COMPASS that includes the same coaching support provided to teachers as described in Chap. 5, but expanded to include all individuals working in concert to produce successful transitions, that is, the youth to the extent they are involved and able, the primary caregivers, and pre-employment transition specialists. CAST is offered to begin to counter the pervasive problem of segregated services which is endemic to our social service system. For example, rather than creating integrated goals and intervention plans that take into account the total person, the usual approach is separately, within each service silo, to create segregated goals and plans consistent with their particular service area. Rather than serving the total person, then each service serves segregated parts of the person aligned to different categories of need. Vocational rehabilitation creates plans for increasing or enhancing employment or postsecondary school education, Medicaid waiver programs create goals, and placements concentrating on behavior and adult daily living

skills within day programs and residential settings, mental health centers focus on addressing comorbid mental health needs, and medical systems focus solely on physical health needs. In part, this segregated service system derives from legal barriers in prescribed regulatory responsibilities (e.g., VR is responsible for employment; the Department of Education (DOE) is responsible for schooling), siloes in funding sources (DOE, VR and Medicaid all have separate budgetary rules, with restrictions on how money can be spent or mixed), and further exacerbated by specializations in worker training and separate drivers for oversight and implementation of different social services (segregated offices, independent supervisory systems, different paperwork requirements, distinct quality indicators). CAST directly addresses this segregation by deliberately integrating school, employment, parent/caregiver, and youth goals and interventions.

The period of transition that begins at age 16 as defined by the Individuals with Disabilities Act (2004) is a critical time for effective, authentic, and purposeful shared decision-making and planning for maximizing the balance between personal and environmental challenges and supports. But many studies, including participant voices from stakeholders such as self-advocates, caregivers, teachers, administrators, and adult service providers indicate that when measured across a wide range of outcomes, we are falling short of efforts for shared decision-making and intentions of an efficient and effective hand-off that results in healthy, personalized, and optimal QOL outcomes in transitioning from school to adult services for autistic students.

Autistic individuals transitioning into adulthood face various barriers and challenges in domains including education, employment, adaptive functioning, activities of daily living, and social relationships (Wisner-Carlson et al., 2020). A recent analysis of Rehabilitation Services Administration data (Roux et al., 2020) identified service issues as one explanation of the poor outcomes. The data revealed that autistic students received much fewer job-related services during transition compared to same age peers without autism. Most importantly, the odds of employment were significantly higher if services were provided. According to the National Autism Indicators Report: Transitions into Young Adulthood (2015), approximately 26% of young autistic adults did not receive services to aid in employment, furthering education, or living independently. Young adults with autism are less likely to attend 2- or 4-year colleges than other disability groups (i.e., specific learning disability or speech/language impairment) (Wei et al., 2013). In fact, Howlin et al. (2013) found that only 28% of autistic individuals received education beyond high school. Even those few that do attend college often face difficulties adapting.

Given this lack of support, it is unsurprising that the net employment rate for young adults even with *high-functioning* autism is 37.57% (Smith et al., 2015). A key challenge for young autistic adults is obtaining competitive integrated employment (Schall et al., 2020). The 2017 National Autism Indicators Report revealed that 54% of young autistic adults worked in segregated settings without pay, whereas only 14% worked in integrated settings with pay.

To understand where improvements need to be made, research from a national sample across the US illustrates the depth of the problem. For autistic adults,

employment rates range between 4 and 12%. When Shattuck et al. (2012) analyzed results from 2007 to 2008 (wave 4) of the 10-year National Longitudinal Transition Study-2 (NLTS2) that followed 11,276 students from 12 special education disability categories, including 500 adults with autism aged 19–23 who were no longer in school (from the original 920 at wave 1), they found that most had not participated in employment or education activities immediately following high school.

Participation rates during the first 2 years after leaving high school were particularly low and, importantly, were predictive of remaining unemployed or not enrolled in college in later years. For individuals from low-income households, disengagement was even higher. Moreover, when compared against similar-aged adults with other disabilities, individuals with autism had the lowest participation rate for employment and the highest rate of no activities. In addition, a higher percentage of autistic individuals had goals that required assistance or specified a noncompetitive future job setting, e.g., sheltered workshops (39%), compared to students with speech/language impairment (2.3%), learning disability (1.0%), or intellectual disability (20%). In fact, across all 12 disability categories, competitive employment goals were lowest for autistic youth and young adults (22%). Follow-up analysis of the NLTS2 wave 5 data (n = 620 individuals with autism) confirmed that postsecondary employment for those aged 21–25 was lowest for individuals with autism compared to other disability groups (Roux et al., 2013).

In addition, those with autism fare poorly on other postsecondary outcomes. Sanford et al. (2011) found that compared to 11 other disabilities, individuals with autism had the second lowest percentage of living independently (12%). Individuals with autism were also more likely to be living with parents even after controlling for the level of support needs and demographics (Anderson et al., 2013). Furthermore, this pattern of low levels of independent living extends into middle adulthood (Farley et al., 2018; Atsmon & Lowinger, 2019). Even though few live independently, youth and adults with autism wish to live independently when asked through interviews and focus groups (Cheak-Zamora et al., 2016; Giarelli et al., 2013). Cheak-Zamora et al. (2016) identified several reported barriers to independent living, including insufficient financial funds, lack of needed support in daily planning, fear of loneliness, and healthcare providers' negative opinions of feasibility. Autistic individuals living with family reported additional hindrances to accessing services which subsequently lends itself to underusage of outside services and higher levels of unmet needs. Those who did achieve independent living tended to be White, from higher household income, and had lower support needs (Chiang et al., 2013; Shattuck et al., 2012).

Sanford et al. (2011) also found that individuals with autism had the lowest percentage of friendships (48%) compared to 11 other disability categories. Orsmond et al. (2013) used data from the National Longitudinal Transition Study 2 to compare social participation among young adults with autism versus young adults with intellectual disability, emotional/behavioral disability, or learning disability. The results revealed that young adults with autism were "significantly more likely to never see friends (38.6%), never get called by friends (47.2%), and never be invited to activities (48.1%)" as compared to the other disability groups. Moreover, they

were 3–14 times more likely to report feeling socially isolated. Orsmond et al. (2013) identified predictor variables for less social participation, which included lower conversational ability, poorer functional skills, and living with a caregiver. As autistic individuals transition into college, they face unique social demands and report high levels of loneliness related to challenges with social skills and understanding (Jobe & White, 2007).

These poor post-school outcomes can be linked in part to the quality of the IEPs developed during school. We evaluated IEPs of students in the COMPASS-T RCT at the beginning of the school year using Indicator 13 (see Chap. 3), a state performance indicator of transition requirements as a guide. A major area of weakness noted in the transition IEPs was a disconnect between IEP goals and postsecondary goals. Just 22% of IEPs had a goal related to education/training postsecondary goals, and 25% had a goal related to employment and independent living. Participation of the student or an outside agency in the IEP meeting was noted in less than 25% of IEPs. These findings suggest a need for better-linked IEP and postsecondary goals, better coordination with outside agencies, and more student involvement.

Altogether, these findings indicate that the promise of transition for persons with autism and their families as a coordinated set of activities to facilitate the seamless movement from school to post-school activities, including postsecondary/vocational education, integrated employment, adult services, independent living, or community participation is not being kept. The disparities in outcomes highlight the need to improve the planning process and coordination of services for postsecondary outcomes of transition for all students.

To improve the planning process, we need to understand the potential reasons behind poor transition outcomes. Although no single cause explains the poor outcomes for students with autism, one critical problem is the lack of evidence-based transition planning interventions that coordinate services across providers. Recall that students whose teachers received COMPASS-T (Chap. 5) made significantly more progress on their IEP goals based on goal attainment ratings, with a very high effect size ($d = 2.1$) meaning their progress was more than 2 standard deviations above the students who received their typical special education program. But also recall that despite gains in IEP goal attainment, parallel gains in postsecondary outcomes were absent, a finding that serves as the impetus for this chapter.

To understand what happened, we analyzed postsecondary goals and the plans to accomplish the goals. We learned that the successful implementation of the plans was based on ability to follow through. Figure 9.2 shows who was responsible for implementing the plans. We found that students and parents, not schools, were the identified people in charge of putting the plans in place for all outcomes—work/school, living, transportation, budgeting, leisure, and friendships. We believe that poor outcomes were related to the failure to provide many parents and students with needed additional hands-on navigation and support (e.g., difficulty with filing paperwork for transportation assistance or matriculation at postsecondary school). In fact, schools were only involved in 50% of the plans, and their involvement was minimal.

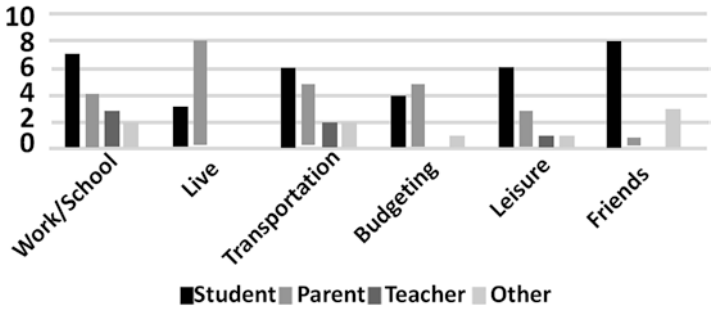

Fig. 9.2 Implementers of plans by domain. (Reprinted by permission from Springer: Ruble et al. (2019)

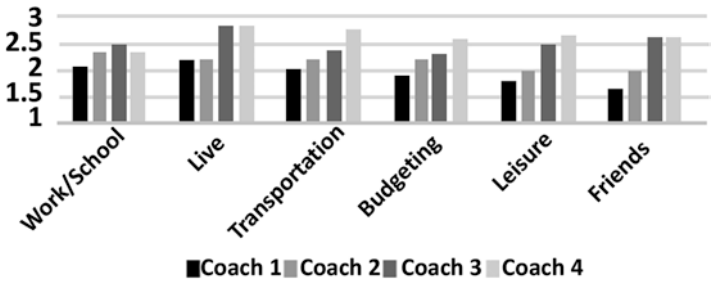

Fig. 9.3 Goal progress by domain. (Reprinted by permission from Springer: Ruble et al. (2019))

The second figure (Fig. 9.3) also shows the need for repeated support through coaching. It took at least four sessions for most of the plans to be implemented. Thus, one limitation of transition planning and implementation not addressed through COMPASS-T was a need for better coordination; integration and support of home, community, and school goals; and plans to meet the goals. Thus, we believe the critical problem was the lack of coordination between caregivers and community-based services, reinforcing the need for school-home coordination and an implementation process requiring repeated coaching.

We identified additional caregiver and teacher factors that were related to student outcomes. We evaluated the relationships between parent and teacher perceptions of student outcomes on their goals with objective measures of postsecondary and IEP goal progress rated by the researchers. We also looked at transition planning quality, parent activation (i.e., empowerment), and parent-teacher alliance (Table 9.1).

We learned that caregiver perceptions of transition planning quality and teacher alliance matter. Both were important and impacted *postsecondary and IEP goal progress, further emphasizing the need for good planning and high-quality parent-teacher communication and interaction*.

Parent activation or empowerment partially underlay these findings, correlating with parent report of teacher alliance ($r = 0.49$, $p < 0.01$) and with transition

Table 9.1 Parent and teacher report of IEP and postsecondary outcomes

	PR postsecondary progress	PR IEP progress	TR postsecondary progress	TR IEP progress
Parent report of IEP progress	0.70***			
Teacher report of postsecondary progress	0.23	0.13		
Teacher report of IEP progress	0.08	0.55**	0.42*	
Parent report of transition planning quality	0.48*	0.47*	0.25	0.02
Parent activation	0.44*	0.22	0.58**	0.12
Parent report of teacher alliance	0.56**	0.51*	0.45*	0.14
Researcher rated IEP progress	0.33^	0.31^	0.47*	0.48*

Reprinted by permission from Springer: Ruble et al. (2019)
PR parent report, *TR* teacher report
***$p < 0.01$; **$p < 0.01$; *$p < 0.005$; ^$p < 0.01$

planning quality ($r = 0.74$, $p < 0.001$). Also, teacher perceptions of postsecondary goal accomplishment correlated with parent activation, further emphasizing the importance of teacher-parent coordination; students who had parents with better knowledge, skills, and persistence regarding their child's needs made more progress.

These results and those above demonstrate the importance of student and caregiver initiation, problem-solving, follow through, and communication with teachers and service providers. But achieving the skills that are necessary for and underlie positive postsecondary outcomes should not be underestimated. Difficulties in coordination across service sectors make transition planning, which is already a challenge, an especially vulnerable and stressful time for autistic individuals and their families given their new role of navigator and coordinator of services (Snell-Rood et al., 2020). Unlike school services that have a single point of service coordination, adult services bring a complex set of challenges as individuals and families must learn to navigate a different set of procedures and guidelines for accessing housing, healthcare, income, social supports, and employment. *The anticipated and eventual loss of essential entitlements afforded by the public-school system and the reality of a fragmented, under-resourced, and ill-equipped system of care for adults is overwhelming for caregivers and students (*Wong et al., 2020*). The stress experienced by caregivers is exacerbated by the unmet behavioral health needs of their child during transition (*Wong et al., 2020*).*

State and local policies governing public services for individuals with disabilities encounter coordination problems due to the complex set of needs, agencies, and procedures required. For example, as the delivery of public services for individuals with disabilities has evolved from state institutions to community-based care, state governments are finding that maintaining relationships and coordination with nongovernmental stakeholders is increasingly necessary (Agranoff, 2013). Although public schools often have a single point of service coordination in special education,

providing a hub for engaging private organizations in a community is more problematic. Coordination problems are exacerbated by several factors. Among other things, a lack of shared goals and beliefs, inadequate resources, and the absence of mutual trust between public schools and community stakeholders can hinder coordination (Parsons, 2018, 2020) explaining in part poor transition outcomes (Snell-Rood et al., 2020).

In a survey of public and private organizations involved in special education in three Virginia regions, we found evidence of public schools and community stakeholders embedded within networks of service coordination (Parsons, 2018, 2020). Using social network analysis, we found that private organizations that specialize in autism and/or behavioral health occupy central positions as "intermediaries" in these networks. Given the finite resources public schools often face in delivering special education services, these intermediaries can provide and/or connect expertise, resources, and information across a complex system. These networks resemble what scholars refer to as "bridging structures" because intermediaries act as bridges that connect otherwise diverse and disparate actors and organizations. While this suggests that some level of coordination exists, especially when it comes to leveraging information and expertise, collaboration requires further development of mutual partnerships. In the same survey, respondents reported that collaboration was hindered by limited resources, which fostered an environment of competition between organizations. The coaching embedded within CAST has the potential to enhance collaborative relationships in these networks by creating frequent, working relationships between schools, parents, and community stakeholders.

The promise that transition planning should facilitate families' abilities to access services so that a personalized and seamless plan based on the needs, preferences, and strengths of the whole person with autism is maximized to the fullest extent possible is far from being realized. Yet, we believe that the lessons learned from our promising and innovative transition planning intervention, COMPASS-T, when enhanced can address the need for a more hands-on approach with COMPASS Across Settings (CAST). With funding from the Institute of Education Sciences (Grant # R324A230008), we will begin to address these issues with CAST.

CAST

How Does CAST Augment COMPASS-T for Improved Postsecondary Outcomes?

Overall, we identified segregated services as a key problem negatively impacting attainment of both IEP and postsecondary goals, specifically (1) the *lack of integration in identifying common goals across school, home, and community settings* and (2) the *lack of integration in identifying and implementing consistent interventions to achieve common goals across settings*. Poor transition planning characterized by

isolated services that lack integration of goals and interventions across school, home, and community settings has been identified as a critical barrier to transition success (Hagner et al., 2012; Snell-Rood et al., 2020). This insight lead to the development of CAST. With respect to IEP goals, although we were able to show strong effects ($d = 2.1$), there was no attempt made to reinforce or generalize gains made at school to the home and community settings. Moreover, IEP goals were not necessarily developed to support the skills needed to achieve postsecondary goals, especially as related to employment. With respect to postsecondary goals, there was little improvement, and this was in part due to failure to systematically provide coaching support to parents and students similar to that provided to teachers and to a lack of coordinated support from teachers and community actors (all the responsibility fell on the parent and student). Thus, we propose CAST as the vehicle to provide better integration across school, home, and community settings for both the identification of appropriate and linked IEP and postsecondary goals and coordinated interventions. To counteract this lack of integrated planning and services, CAST includes, in addition to the standard support for the teacher within the classroom, a home (caregiver/student-directed) and community-based component (vocational rehabilitation-directed via pre-employment transition services: Pre-ETS).

Our empirical findings echo critical feedback from our stakeholder focus groups (Snell-Rood et al., 2020) that identified a need for a coordinator/navigator to support parents with decision-making and implementing action plans for the attainment of postsecondary goals and foundational IEP goals—a finding also reported by others (Hedges et al., 2014). As noted in the last section, coordination among stakeholders across different service systems—education, housing, and vocational rehabilitation, to name a few—is essential to successful postsecondary transitions. In public policy research, the term *polycentric governance* is often used by scholars to describe the challenges of integrating policy goals and implementation across complex systems (Hedges et al., 2014). To govern these complex systems, stakeholders must overcome issues of resource scarcity, conflicting goals, and trust to integrate and implement policy goals (Agranoff, 2007; Agranoff & McGuire, 2003). For example, prior research highlights similar challenges associated with community-based care services for individuals with disabilities, which involves complex systems of public and private organizations. Postsecondary transition planning for adults with autism often encounters similar coordination problems.

Our belief is that CAST has the potential to improve both the coordination among stakeholders involved with successful transition planning for students with autism and the outcomes for students. If our approach with CAST is successful at improving coordination and student outcomes, it is generalizable to other states because federal law requires pre-employment services in high school and other student populations. In a subsequent survey of public and private educational organizations in three Virginia regions, we examined the factors that contribute to collaborative relationships between stakeholders in special education. Using social network analysis, we found that collaborative relationships were formed based on shared policy beliefs/goals, trust, and the presence of other mutual, collaborative partnerships. Another way to think about these findings is that the presence of multiple,

overlapping working relationships fosters a collaborative environment where mutual trust and goal setting is possible. We believe that CAST will provide a framework for helping stakeholders establish a shared understanding of the problems, goals, and appropriate interventions.

CAST builds upon and combines three validated interventions tested in randomized controlled trials (RCTs) and 20 years of work with four NIH-funded studies on COMPASS, COMPASS-Transition (Chap. 5), training in COMPASS (Chaps. 2 and 7), and C-HOPE (Chap. 6). As introduced in our first book, COMPASS provides an alternative framework for conceptualizing, assessing, and intervening to improve outcomes in autism based on a transactional approach that we introduced in Chap. 5. COMPASS accounts for the intersection between the individual, family, school, community, and economic resources, that is, the critical interactions between autistic individuals and their environments.

Although the original COMPASS, COMPASS-T, and C-HOPE interventions focused on different populations, like CAST, all were built on the COMPASS framework. Unlike traditional behavioral consultation, which focuses on isolated problems interfering with disparate and often disconnected educational goals, COMPASS incorporates a holistic and ecological perspective that targets the pivotal skills underlying autism (social communication; self-direction) that impact other areas of development. Table 9.2 compares our previous versions of COMPASS and the targeted consultee and outcomes. Lastly, we have confidence in our ability to support and coach individuals and families because of our prior work with a parent-mediated version of COMPASS called COMPASS for Hope (C-HOPE; Chap. 7). C-HOPE focused on young children, but in the home setting with parents and was designed for children with behavior. We tested C-HOPE in a randomized controlled trial, and results showed it was effective for decreasing child behavior ($p < 0.001$), increasing parent competency ($p = 0.02$), and decreasing parent stress ($p < 0.001$).

COMPASS-T, like the original COMPASS, focused on the school setting but for high school students. CAST, however, seeks to bring all key players together, including pre-employment specialists (Pre-ETS) with emphasis on postsecondary goal attainment. CAST coordinates services across the school, home, and community (employment) settings, integrating services and supports.

Table 9.2 Comparison between interventions. Shaded boxes represent target elements

	Primary Consultee Target				Primary Student Outcomes		
	Teacher	Parent	Pre-ETS	Student	IEP goal attainment	Post-sec goal attainment	Home & comm goal attainment
COMPASS	■	■			■		
C-HOPE		■					■
COMPASS-T	■			■	■		
CAST	■	■	■	■	■	■	■

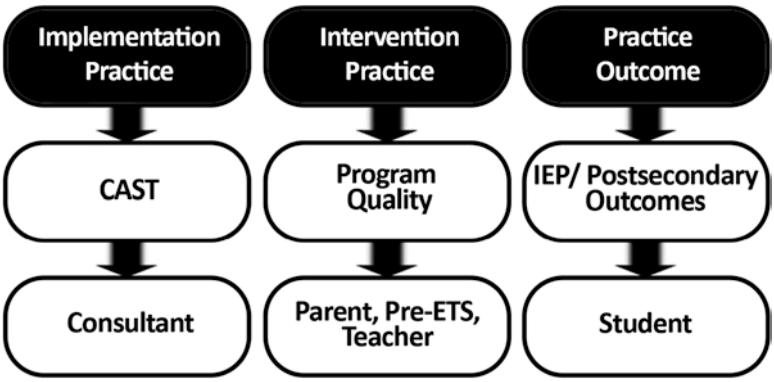

Fig. 9.4 FEBIIP

CAST as an indirect intervention delivered to students via teachers, parents, and employment specialists focuses on improving transition planning and outcomes through coordinated alliance across all key players and settings and use of evidence-based practices. A consultation intervention is a multilevel evidence-based practice and adaptations can occur at the policy/organization, consultant, teacher, Pre-ETS, parent, and student levels. We have applied Dunst's and Trivette's framework for evidence-based implementation and intervention practices (FEBIIP) as a model to understand COMPASS (Fig. 9.4; Dunst & Trivette, 2012) and discussed consultant, teacher, and child factors that predict child outcomes in our book *COMPASS and Implementation Science* (Ruble & McGrew, 2015).

The FEBIIP includes three levels of assessment that differentiate between the three critical actors in consultation: the consultant, the consultees (parent, teacher, Pre-ETS), and the client (student). The first level is quality assessment of the implementation practice, or what the consultant does to impact the second level of the intervention practice or what the teacher, parent, and service provider do as a result of the consultant's actions. This second level, the actual intervention, then impacts the practice outcome from the three consultee actors. These multilevel aspects account for the complexity within a consulting intervention such as COMPASS. For example, in prior research on COMPASS, we showed using serial mediation that COMPASS has an indirect impact on student IEP outcomes through changes in what the teacher does (i.e., teacher adherence) and in the identification of pivotal goals (i.e., IEP quality) (Wong et al., 2018).

Student goals are individualized and based on an ecological assessment using the COMPASS profile (see Chap. 5 for a case study example) and input from the team and student. Further, like COMPASS-T, goals emphasize social communication and learning or work behavior skills and are individualized for each student. Overall, COMPASS supports the complex decision-making process for personalized transition planning, and goals are linked directly to the IEP.

COMPASS in all of its versions is designed to bring together the people with the most frequent interactions with the student—parents, teachers, therapists, etc.—to

jointly identify the key social, communication, and independent work/learning skills that have a pivotal impact on other areas of development. For example, a skill such as initiation impacts asking for help, starting a work task, and making social greetings. These pivotal goals must be identified and carefully crafted for the individual student and an evidenced-based intervention plan developed and modified based on the student's needs, preferences, and strengths.

COMPASS CAST explicitly embraces and applies an evidence-based practice in psychology (EBPP) approach (McGrew et al., 2015; see Chap. 1), combining identification of the best empirically supported intervention with a consideration of the student's needs and preferences, together with the personnel and general resources available within the school, home, and community. CAST begins with the same initial 3-hour joint session used in all versions of COMPASS. The session sets the stage for shared decision-making by allowing for discussion between the team on future plans and goals for training, employment, postsecondary education, leisure and social activities, residential living, budgeting, and transportation or moving about in the community—the same discussion that starts COMPASS-T. Further, like COMPASS-T, the student's challenges and strengths related to social skills, adaptive/self-management, communication, problem behaviors, learning skills, and sensory sensitivities and preferences are reviewed using the COMPASS profile for adolescents and adults. This discussion helps pinpoint critical social, communication, and work behavior/learning goals and informs the intervention plans (e.g., within schools, these are the teaching plans) that are generated for each goal. Following this initial consultation are four additional sessions that are also consistent with the coaching described earlier and provided in our other versions of COMPASS.

COMPASS coaching incorporates evidence-based features including performance feedback monitoring and progress monitoring, lasting about 1 hour. Each session is standardized and allows for assessment of student goal attainment and modification/self-reflection on the implementation of the intervention plans (see Chap. 7).

During school-based coaching, teachers and students provide a video or artifact (e.g., grades and diaries) to determine progress using psychometric-equivalence-tested goal attainment scaling (PET-GAS; Ruble et al., 2012). PET-GAS controls for outcome factors that may result in biased comparisons such as the level of difficulty of the skill, measurability of the skill, and standard distance between the benchmarks. After progress is determined, a discussion of the implementation of the teaching plans ensues. Supportive problem-solving occurs based on performance feedback and fidelity monitoring. As noted in Chap. 5 about COMPASS-T, we obtained focus group feedback from community-based stakeholders of parents, individuals with autism, teachers, administrators, public policy makers from the state vocational rehabilitation, development disability services, special education, and Medicaid and applied the findings to our adaptation of COMPASS. Issues noted across stakeholders were the lack of adequate planning that included understanding

of autism, the need for interventions that could be effective across the spectrum, the establishment of clear goals, intervention plans, progress monitoring of and accountability for the success of the plans, understanding of community services based on multiple opportunities of sharing and learning, and frequent communication and coordination between all the key players. Essentially our adaptation of COMPASS-T expanded the identification of pivotal goals to include a discussion of the postsecondary goals at the start of the session and the IEP goals that would be needed to support and link to the postsecondary goals. We also invited students to complete a self-assessment of skills and areas of learning and to participate in the consultation. Their participation was particularly crucial when their IEP placement recommended attending a general education program full time. Often, they were the ones responsible for providing data (diaries, videos) and input on the implementation of the plans for IEP and postsecondary goals.

In conclusion, CAST is an innovation that helps meet the need for improved transition planning that results in a more coordinated and collaboratively based personalized transition plan generated by key stakeholders and reinforcing a shared understanding of the critical issues, goals and requisite interventions, while providing ongoing coordinated autism consulting support to providers, families, and the students to achieve the goal of a seamless transition. *Given that segregated service planning and delivery is the norm, leading to uncoordinated and generally poorly integrated services, for both goals and plans, CAST is unique in providing a planning and coaching platform for integrating the critical targeted service sectors involved in transition (school, home, and VR: Pre-ETS) at the individual student/family and community level.* This integration and coordination of planning and service provision offers several examples of innovation. Specifically, the CAST platform (1) can support integrated goal setting across settings (with ecological informed planning) and (2) can create best practice plans using an EBPP approach, to meet goals that account for the unique needs of students and providers (teachers, parents, Pre-ETS) while accounting for the specific needs and resources available within each setting. In addition, it provides (3) ongoing support to monitor, adapt, and implement the goals and plans via coaching. Another contribution is the coordination of action and integration of goals and intervention strategies across multiple critical stakeholders acting together. There are few to no interventions that attempt to integrate interventions across even two settings or organizations that (4) explicitly integrate home and school goals and planning for IEPs—whether for transition or for non-transition IEPs and postsecondary planning. Similarly, there are few to no interventions that successfully (5) integrate community (e.g., vocational rehabilitation) and school goals and planning for IEP or postsecondary planning. Future research on innovations such as CAST is necessary for improved postsecondary outcomes. With funding from the Institute of Education Sciences, CAST will be evaluated empirically for its effectiveness in improving post-secondary outcomes of autistic young adults.

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Chapter 10
Teachers Supporting Teachers: Training Teachers to Implement COMPASS with Peer Coaching

Becca Stayton and Lisa A. Ruble

Overview Rural schools often face challenges accessing autism coaching support. The purpose of this chapter is to describe an innovation of peer coaching with COMPASS for enhancing teacher support and student IEP outcomes.

Access to evidence-based autism intervention and support is often difficult for many families throughout the United States, especially those who live in rural or underserved areas. Approximately 19% of the US population lives in rural areas, and more than 9.3 million students in the United States attend rural schools (Showalter et al., 2019). It is estimated that 1 out of 44 children has autism (Maenner et al., 2021) and that the rates of autism in both rural and urban areas are similar (Antezana et al., 2017). Thus, almost every school in the United States can expect to have students with autism.

Although families in both rural and non-rural areas often face shared difficulties regarding access to professionals and services for autism, those from rural communities face numerous challenges unique to their situation that impact their ability to access quality support (Murphy & Ruble, 2012). One of the most salient challenges is less availability and access to evidence-based practices for obtaining a diagnosis and accessing intervention (Scarpa et al., 2020). In a study by Drahota et al. (2020), findings revealed that rural communities have fewer autism providers compared to more populated communities. Without an adequate number of providers, access to effective interventions is virtually impossible. Additional common barriers include geographic distance from autism resources; overall low socioeconomic status, including the financial means to obtain services; high unemployment rates; low parental education level; and less knowledge of autism (Antezana et al., 2017; Ashburner et al., 2016; Fountain et al., 2011).

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0_10

Challenges accessing high-quality interventions extend to schools and the teachers who work in rural schools. Schools in rural areas have trouble recruiting and retaining high-quality teachers and administrators, experience high poverty, have less early screening for students with disabilities, have diminished access to educational resources, and are often located in remote and sometimes difficult-to-reach geographic areas (Showalter et al., 2019). As a result, rural special education teachers may have limited access to professional development and training opportunities (Skyhar, 2020).

Schools are an ideal context for addressing gaps in evidence-based support because all children in the United States have access to public schools regardless of geographic location, income, disability status, home language, or background (Every Student Succeeds Act, 2015; Family Educational Rights and Privacy Act, 1974). Importantly, when compared to other service delivery settings, US public schools provide students with autism the most support and intervention services (Bilaver et al., 2016). Thus, schools are a safety net where teachers and other school providers deliver a sizable number of services to children with autism. If schools can be targeted as the place and source of high-quality, evidence-based autism interventions, helping teachers overcome barriers of access to supports that improve their teaching skills and student outcomes can help children broadly and widely.

School practitioners require quality intervention tools and effective training to deliver evidence-based support to students. One strategy to address teacher access to highly valued and effective professional development opportunities for high quality teaching is consultation (García & Weiss, 2019). While consultation is a common practice in schools, it is limited in rural schools because of shortages of trained consultants. Thus, innovating COMPASS consultation by developing cost-effective and sustainable approaches for teacher support is needed.

Coaching

Consultation and coaching are tools that educators can utilize to not only improve the use of evidence-based practices (EBPs), but assist with implementation of those EBPs. Effective coaching results in proactive interventionists and better problem solvers. Teacher coaching is a proactive implementation support because it results in improved teacher instruction and student outcomes (Dunst et al., 2015; Kraft et al., 2018). Effective coaching based on research involves the provision of performance feedback for improving teaching quality and student progress through self-reflection (Brock & Carter, 2017; Kraft et al., 2018). Interventions that utilize a coaching component increase teachers' use of EBPs for students with autism (Ruble et al., 2010, 2013, 2022a, b; Sam et al., 2021). After receiving coaching, teachers of students with autism demonstrated higher ratings of fidelity in skill implementation along with improved student outcomes (Pas et al., 2016; Ruble et al., 2013; Tekin-Iftar et al., 2017). Coaching can be successfully and effectively provided using both

web-based or face-to-face modalities (Ogle et al., 2023; Ruble et al., 2013; Tunc-Paftali & Tekin-Iftar, 2021).

But how much coaching is needed? The amount of coaching teachers receive widely varies and appears to matter. In a meta-analysis conducted by Kraft et al. (2018), it was revealed that 27% of studies reported 10 or fewer hours of one-to-one coaching, 23% reported 11–20 hours, and 23% reported 21 or more hours. A recent study Ogle and colleagues (2023) found that more opportunities for teacher coaching led to higher goal attainment for students with autism, and this was with only 4 hours of coaching in total. Thus, COMPASS provides a feasible and effective bundled strategy of a clinical practice combined with improving the use of EBPs through effective implementation.

Peer Coaching

Because rural schools often lack autism trainers, a novel answer is peer coaching and support. Peer coaching is a solution that overcomes the barriers of access to specialized consultation and coaching support for rural or underserved school settings. Peer coaching is defined as a process in which two or more colleagues work together to improve their skills by observing the targeted behaviors of their partners and providing feedback (Kurtts & Levin, 2000). Peer coaching may be even more helpful in reducing the disparity of quality intervention services for students with autism in underserved areas, as it requires fewer financial and personnel resources. Peer coaching improves professional relationships by increasing fidelity in intervention delivery and facilitating the development of shared language and understanding, the transfer of new skills into practice for teachers, and instructional change (Hsieh et al., 2019; Joyce & Showers, 2002; Kohler et al., 1997; Showers, 1985). Further, teachers may feel more comfortable being observed and receiving performance feedback from a peer teacher (Edwards & Steed, 2021) rather than a consultant that is often external to the school system. Peer coaching is promising for improving teacher effectiveness and increasing student outcomes (Johnson et al., 2017) in part, because of the opportunity for feedback based on clinical supervision techniques. Supervision or feedback allows partners to collect detailed observation data regarding specific teacher behavior (Munson, 1998). Showers (1985) advocated for teachers to coach each other and noted that teaching teams should make themselves familiar with the new skills they are to master; have access to other teachers for purposes of feedback, observation, and conferencing; and be open to experimentation and willingness to refine their skills throughout the coaching process.

Peer coaching has been efficacious in settings ranging from early-childhood classrooms (Edwards & Steed, 2021) to high school classrooms (Pearce et al., 2019). Preschool teachers who participated in a peer coaching program that targeted student-teacher interaction showed more gains than teachers who did not participate in the peer coaching program (Johnson et al., 2017). Much of the research

conducted on successful peer coaching in the education setting has been with pre-service teachers and general education teachers (Britton & Anderson, 2010; Loman et al., 2020; Lu, 2010; Pearce et al., 2019). However, there is a paucity of research in the utilization of peer coaching techniques for teachers of students with autism. This calls for innovations that reduce barriers in underserved and rural areas related to professional development and support for students with autism.

The Collaborative Model for Promoting Competence and Success (COMPASS)

COMPASS is a manualized consultation and coaching intervention for preschool- to high school-aged students with autism that has been proven effective in three randomized trials for improving child social, communication, and learning outcomes in both rural and non-rural schools (Ruble et al., 2010, 2013, 2018). Recently, an independent team from Australia replicated findings that COMPASS improves child outcomes (see Chap. 4). COMPASS involves the creation of individualized goals and intervention plans for students with autism through a joint session with a caregiver and the student's teacher that is facilitated by a trained consultant. The creation of goals and intervention plans for students are informed by the COMPASS Profile (Ruble et al., 2012), which is completed by the student's caregiver and teacher separately. The COMPASS Profile (available online at www.compassforautism.org) obtains information regarding the student's adaptive skills, problem behaviors, social and play/leisure skills, communication skills, sensory challenges and supports, learning skills, environmental challenges and supports, and other concerns that may impact the student's success. This process facilitates a shared understanding of the student between the teacher and the caregiver to create goals and teaching plans that improve the student's quality of life.

COMPASS includes a structured coaching framework, in which four coaching sessions are scheduled approximately 4–6 weeks apart following the initial goal setting and intervention planning consultation. Coaching within COMPASS allows teachers to receive performance feedback regarding intervention plan implementation (adherence) and make necessary adjustments to assure student goal attainment (progress monitoring). The amount of coaching teachers receive is important in COMPASS. Ogle and colleagues (2023) found that students whose teachers received two to four COMPASS coaching sessions either attained their individualized education plan (IEP) goal or exceeded their goal, unlike students whose teachers received no coaching or only one coaching session.

All prior studies of COMPASS relied on trained consultants to deliver the intervention. However, adapting COMPASS for peer coaching in rural schools could help mitigate some of the challenges associated with access to autism trainers and consultants where availability of highly trained consultants is often not feasible.

Peer Coaching Adaptation of COMPASS

Because COMPASS was originally conceived, developed, and tested with consultants in mind, adapting the intervention for peer coaching is a necessary and critical first step. To help guide the adaptation process, there are conceptual frameworks available. The Replicating Effective Programs (REP; Kilbourne et al., 2007) and the Framework for Reporting Adaptations and Modifications-Enhanced (FRAME; Stirman et al., 2019) are useful resources for guiding the process for detailed consideration of various aspects of what might be adapted. Often the adaptation process includes additional input using focus groups to obtain stakeholder feedback (see Chap. 5). When an existing intervention such as COMPASS is modified into an innovation such as a peer adaptation of COMPASS, input from classroom teachers is critical.

The REP framework helps address the research-to-practice gap by highlighting the necessity of quality training and evaluation methods for discriminability and reliable replication and overcoming issues of community-implemented interventions that often result in lower effectiveness compared to researcher-implemented studies. We cannot assume that if we train teachers to implement COMPASS or any of its derivations or innovations, that the training is enough. For example, we must take into account many factors such as time for training, administrator support for learning a new intervention, monitoring the quality of the implementation of the intervention, and adjusting the intervention based on the needs of the specific school and teachers. REP has four phases that account for the various levels and considerations related to training in a new practice: (a) pre-conditions, (b) pre-implementation, (c) implementation, and (d) maintenance and evolution. Once adapted, an intervention must be assessed for fidelity of intervention delivery, impact on child outcomes, and the costs of intervention implementation. Further, REP indicates the importance of pilot testing an adapted intervention, as it is critical to gather information regarding the intervention package's feasibility, acceptability, and functionality, along with any problems that arise before widespread dissemination. It is necessary to assess components such as feasibility, acceptability, and functionality when testing a new or adapted intervention to close the research-practice gap more quickly, as interventions such as COMPASS could greatly benefit students, teachers, and caregivers if they were more readily available and feasibly delivered. Feedback from pilot testing can help researchers make appropriate revisions to the intervention package before substantial time and resources have been spent.

The peer adaptation of COMPASS can also be informed by FRAME, which was created by Stirman et al. (2019) for guiding specific adaptations and identifying the considerations needed to maximize fidelity, feasibility, and effectiveness. FRAME provides a method to characterize and describe specific modifications that are made, why those modifications are made, and the process of adaptions and modifications. The peer COMPASS adaptation described below further considers components of FRAME by addressing other factors broadly such as the skills needed for implementation, barriers to implementation, and appropriateness of the intervention.

Focus groups, along with feedback from a pilot test of the peer coaching COMPASS intervention package, help inform necessary refinements for the adaptation. Due to the importance and value of stakeholder (e.g., special education teachers, school administrators, and caregivers of students with autism) input, focus groups help provide information on the perceived feasibility of a peer coaching innovation for COMPASS and challenges that could arise in its. This stakeholder feedback can be used to inform peer coaching adaptions that can be characterized with FRAME, while the training process is supported by REP for pilot testing.

Model for Testing an Adapted Peer Coaching Approach to COMPASS

Following the peer coaching adaptation of COMPASS, we outline seven steps to fully test the adapted intervention (see Fig. 10.1).

To acquire necessary background knowledge, teachers engage in pre-training activities (Step 1) followed by a 1-day COMPASS consultation training (Step 2). The first COMPASS training focuses on conducting the initial COMPASS consultation with the child's caregiver using materials tested previously and informed by the focus groups (see Chaps. 2 and 7). Following consultation training, teachers participate in a guided implementation of the initial consultation with a trained COMPASS consultant for support and feedback (Step 3). Next, teachers facilitate an initial consultation independently and receive feedback on delivery from a trained COMPASS consultant (Step 4). Teachers then attend a 1-day COMPASS coaching training (Step 5), followed by a guided coaching session with the same caregiver and the trained COMPASS consultant (Step 6). Once teachers reach 80% of fidelity of intervention delivery (including coaching and consultation), they facilitate the peer

Fig. 10.1 Peer COMPASS adaptation training process informed by REP

coaching independently without the consultant present (Step 7). The next session describes each of the steps in the sequence in more detail.

Step 1: Teacher Pre-training

Due to the necessary prerequisite knowledge and skills required to implement COMPASS, teachers engage in recommended pretraining activities such as gaining knowledge on autism and consultation before attending COMPASS training. Knowledge of autism includes understanding the characteristics of autism and the challenges students with autism face. Understanding of EBPs includes learning about high-leverage practices such as reinforcement, prompting, and visual supports. Successful implementation of COMPASS also relies on proficiency of additional skills. These skills include writing high-quality goals and individual education plans, developing evidence-based intervention plans using the COMPASS framework, and understanding consultation, coaching, and process skills. Process skills include, but are not limited to, skills such as active listening and acknowledgment of others' points of view (see Chap. 2).

COMPASS developers have published numerous research articles that inform pre-training activities. To obtain the goals listed above, teachers complete modules that are freely available and previously tested, frequently used EBPs within COMPASS (Ruble et al., 2022a). Consultation and coaching techniques tested in COMPASS (see Chap. 7), writing high-quality goals and Goal Attainment Scales (GAS) (see Chap. 5), and writing high-quality intervention plans (see Chap. 2). Modules that cover autism, along with EBPs, can be accessed at no cost (e.g., through the Autism Focused Intervention Resources and Modules (AFIRM) website or the IRIS Center website).

Step 2: COMPASS Consultation Training

Following the completion of the pretraining activities, teachers attend a 1-day COMPASS consultation training. Teachers gain a deeper understanding of COMPASS, its theoretical underpinnings, and its effectiveness. They will also learn how to conduct the initial COMPASS consultation, using the completed COMPASS Profile to collaboratively identify pivotal social communication and learning goals, create measurable goals in these domains, and generate evidence-based and personalized intervention plans adapted to the specific student and their learning situation.

Step 3: Guided Initial Consultation Implementation

After teachers complete the COMPASS consultation training, they are paired with another special education teacher, ideally a teacher that works within the same school. During the first semester of the school year, special education teacher pairs attend each other's initial consultations or audiotape the consultation for asynchronous sharing. The student's teacher, a peer teacher, caregiver, and a trained COMPASS consultant meet for the initial consultation. A trained COMPASS consultant leads the initial consultation while teachers observe. The student's teacher will be offered opportunities to lead discussions during the initial consultation (e.g., lead the discussion on the social goal) using a graduated guidance approach. As is typical during an initial COMPASS consultation, the completed COMPASS Profile provides the needed background information for identifying and developing three individualized goals that are later used to create a Goal Attainment Scaling (GAS), along with intervention plans for the goals. Teachers are responsible for documenting the goals and teaching plan for their student and updating the IEP with the goals.

Step 4: Teacher Implements Consultation Independently

After observing the initial consultation process, teachers facilitate an initial COMPASS consultation for a student on their caseload with supervision and feedback from a trained COMPASS consultant. The trained COMPASS consultant provides assessment data on the fidelity of the delivery of the COMPASS consultation, including feedback on the quality of the intervention plans and goals. Once the teacher and caregiver complete an initial consultation, teachers will obtain feedback from the trained consultant until they meet 80% fidelity of implementation independently. Consultant trainees were able to exceed 80% fidelity in consultation adherence and process skills after one session each of feedback for the initial consultation and the first coaching session in previous COMPASS studies (Ruble et al., 2022a, b and Chaps. 2 and 4). The peer teacher works alongside the consultant and learns to use the fidelity tools and feedback procedures.

Step 5: COMPASS Coaching Training

Once teachers provide an initial consultation, they complete the COMPASS coaching training. Teachers learn about the COMPASS coaching process, along with the importance and effectiveness of coaching. Teachers receive instruction on how to write Goal Attainment Scales (GAS) with practice and feedback. Lastly, they learn the strategies for effective coaching and how to provide meaningful performance feedback to peer teachers with student progress monitoring using GAS.

Step 6: Guided COMPASS Coaching Implementation

Similar to the initial consultation, a trained COMPASS consultant models the first coaching session with the peer coach. The final three coaching sessions are expected to be implemented independently without the trained consultant, but with the peer coach who has reached fidelity after training. For monitoring fidelity of the peer coach, the COMPASS consultant reviews audio/video clips along with COMPASS goals, GAS, and teaching plans. Teachers video record the implementation of the COMPASS teaching plans developed during the initial consultation for their student. Teachers upload their videos to the COMPASS online platform (www.compassforautism.org), where their peer coach can access the videos for feedback. Based on prior COMPASS studies, at least four opportunities for peer coaching sessions take place. During coaching, the teacher and peer coach watch the videos of the teacher's implementation of the intervention plans, discuss adherence to the teaching plans, rate student GAS progress, make any necessary changes to the teaching plans, and problem-solve any additional adaptations to teaching plans.

Step 7: Independent Implementation of COMPASS

When teachers have reached fidelity in implementing all components of COMPASS (e.g., initial consultation, developing goals and teaching plans, and conducting coaching sessions), they will be prepared to implement the COMPASS process independently, eliminating the need for an additional trained COMPASS consultant. This allows for feasible and sustainable caregiver-teacher collaboration and inclusion of other stakeholders (such as the general education teacher or speech pathologist) to feasibly put evidence-based supports in place for students with autism.

Overcoming Implementation Barriers

Despite the benefits of peer coaching, schools must consider organizational and leadership supports necessary for effective coaching. While access barriers to effective consultation and coaching occur both in rural and nonrural schools, rural schools may be particularly impacted. These challenges include but are not limited to relationship issues such as a lack of continuity and/or trust between coaching professionals and teachers (Cappella et al., 2016; Shernoff et al., 2015). In small schools, consultants and teachers may experience dual relationships and interactions not only at work but also in the community. These dual relationships may have an impact on effective coaching. Organizational barriers include time constraints, lack of buy-in by leaders and staff, competing job demands, financial costs, and little incentive to participate in innovative practices such as coaching (Cappella

et al., 2016; Kilbourne et al., 2007; Schultz et al., 2015). These obstacles, while a part of all schools, may exacerbate the adoption of innovative practices such as coaching in rural schools and are important to consider when introducing a novel practice in a new setting. As reviewed, the REP implementation science model helps guide assessment of preconditions important for an innovation such as COMPASS with peer coaching.

Conclusion

Teacher coaching is a beneficial tool that educators can leverage to be a more proactive problem-solving process that leads to better student outcomes. However, the way in which coaching in the school setting is typically structured is not always feasible in educational settings with limited resources, such as rural schools. Peer coaching, or teachers-coaching-teachers, addresses some of the accessibility barriers that schools may face when implementing coaching strategies. Peer coaching for COMPASS is a promising innovation to an evidence-based intervention that has been shown to lead to positive goal attainment outcomes for students with autism.

Peer coaching holds promise for increasing the feasibility and accessibility of COMPASS. Because a trained consultant is not needed throughout the entire process, this innovation of the original COMPASS implementation guidelines offers scalability. Further, such adaptation to COMPASS would reduce the cost and resources needed, while improving student outcomes. Peer coaching using the COMPASS framework maintains the core ingredients and benefits of COMPASS, including ensuring opportunities for meaningful caregiver input into goal setting and intervention planning, establishing measurable goals that reflect the QOL outcomes for students with autism, creating intervention plans adapted to the personalized strengths of the student, and providing effective coaching that includes performance feedback and progress monitoring.

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L. A. Ruble, J. H. McGrew (eds.), *COMPASS and Innovative Education for Students with Autism*, https://doi.org/10.1007/978-3-031-31395-0