Social Matters

Improving social skills interventions for Ontarians with Autism Spectrum Disorder

Autism ONTARIO
see the potential

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Autism Ontario has been the voice of people with Autism Spectrum Disorders (ASD) and their families since 1973, working to ensure that each individual with ASD is provided the means to achieve quality of life as a respected member of society. With thousands of members and supporters across the province, Autism Ontario is the largest collective voice for families whose children with ASD struggle to receive necessary clinical and support services to meet their unique needs.

This report can be downloaded from www.autismontario.com

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Plain Language Summary

The struggles that are encountered for those with Autism Spectrum Disorders (ASD) in learning appropriate social skills can be easily observed by parents and supporting professionals. Sean Barron, an adult with ASD, describes the social skills learning process this way: "Feeling at ease in social situations and having confidence in handling whatever comes my way were not things I learned in a single "A-ha!" moment of ultimate social transformation. It was, and continues to be, a process that unfolds in its own time, layer by layer." (Grandin & Barron, 2005, p. 81). We know the importance of social skills in our world. We know that learning social skills is a life long journey for all of us, but especially for those living with ASD. We also know that people with ASD can develop the social skills they need with the appropriate supports, education and practice.

As a provincial organization with chapters in busy city-centres, rural communities and many places in between, we at Autism Ontario felt well positioned to draw upon the knowledge of parents and community partners to begin to understand what social skills programming looks like across our province. We began our search by developing and posting surveys on-line to first understand what is happening in our communities. Some of our most interesting survey findings include:

With this knowledge, we sought to gain a better understanding of the variety of social skills programs being delivered across the province of Ontario, as well as to understand parent perceptions of these programs. We then reviewed the research on social skills interventions to determine what was considered best practise so that we could inform those responsible for developing social skills programs in Ontario.

Social skills interventions vary widely in Ontario

We found from our *Community Partner Survey* that social skills program providers are offering different models and interventions. There does not appear to be one consistent curriculum or model being used as a foundation for developing social skills programs. (Appendix A will describe some of the most frequent experts/models being referenced).

Many social skills programs in Ontario lack parent involvement and feedback

From our *Parent Survey*, we learned that less than half of the programs evaluated encouraged parents to monitor the effectiveness of their child's progress. Despite the lack of parent involvement in evaluation, parent satisfaction was still high in that 81% of parents identified that they were satisfied with their child's involvement in the social skills groups and would recommend their child's group to other parents.

Research on social skills interventions helps inform best practices

Within this document, we reviewed relevant research on best practices in social skills

programming. In this paper, we provide information about some of the most frequently referenced social skills experts and models. We describe how to critically evaluate and select appropriate social skills groups. We also share information about social skills program components that may be used by community partners when developing social skills programs.

Ongoing program evaluation is needed on teaching social skills

Although research on teaching social skills to people with ASD can provide some guidance for program development, at this time there are no definitive answers as to the best models or strategies to ensure program effectiveness. Therefore, it is important that those setting up groups and teaching social skills work in collaboration with parents and participants to systematically evaluate each program's impact on individuals in the group during and after the intervention. At intake, it is important to measure a participant's social knowledge, skills and abilities for later comparison.

Using this document as a guide in developing social skills programs

To promote the thoughtful selection of social skills models and teaching strategies that reflect what we do know about best practices, it is our hope that parents and professionals will use this document as a source of information and to promote discussion and new action to enhance social skills programming to better support individuals on the autism spectrum.

Social Skills Interventions for Persons with ASD

CONTEXT: WHY FOCUS ON SOCIAL SKILLS INTERVENTIONS?

Over the past 25 years, research on best practices in early intervention for children with Autism Spectrum Disorders (ASD) has had an enormous impact on the creation of many excellent intervention programs across North America. Despite our own growing pains in implementing Intensive Behavioural Intervention (IBI) programs in Ontario, we can be proud to have a strong IBI program available to children who are most severely affected with autism (Perry et al., 2008). Since 1999, when the Ministry of Children and Youth Services (MCYS) created Regional Autism Intervention programs, IBI services have impacted on the growth and development of over 1,100 children with ASD and their families across the province (MCYS, 2007). The IBI program is offered in French in certain regions over the province.

We are now in a position to look beyond early intervention to create effective programs for children, adolescents and adults across the full spectrum of ASD. It is especially important to focus on social skills development given that this is the common challenge faced by all individuals with ASD, no matter what their language or cognitive abilities. As well, social skills are critical for meaningful integration and success within school and community life across the lifespan. A considerable body of research on teaching social skills has accumulated over the past three decades that can guide us in developing best practice guidelines. Although the following review will show that more research is needed in this area, the primary issue right now is how to inform parents, educators and professionals about the existing research findings to empower everyone in advocating for, and creating, effective social skills intervention programs, in both official languages.

SOCIAL SKILLS INTERVENTIONS

The purpose of this paper is to review social skills interventions for individuals with Autism Spectrum Disorders to inform best practice guidelines that will benefit parents, educators and professionals. Autism Ontario and the larger autism services community have identified a growing need for best practice guidelines for teaching social skills to persons with ASD. As well, the current state of social skills interventions in Ontario, as described below in our summary of the surveys we conducted with community partners and parents, showed that there is huge variability in what social skills services are being delivered, and in how the effectiveness of these social skills programs are being evaluated.

It is our intention in this discussion paper to explore three questions related to social skills interventions for persons with ASD in Ontario:

1. What social skills interventions are currently available across the province?
2. What are parents' perceptions of the social skills programs across the province?
3. What does the research literature on social skills interventions for persons with ASD have to say about best practices that might inform best practice guidelines?

Out of this analysis, we hope to provide guidance to parents and community partners on what are best practices for delivery of social skills interventions for those on the autism spectrum. At the very least, those who read this discussion paper will gain knowledge of up-to-date information on the state

of social skills programming in Ontario and what research has to say about best practices. At best, we hope this discussion will lead the way to a thriving collaboration between professionals, educators and parents in Ontario in creating effective social skills programs that are accessible to persons of all ages on the autism spectrum everywhere in Ontario in both official languages. And it is our heartfelt hope that out of these social skills programs, people with ASD experience meaningful and lasting growth in their social development, in social acceptance, and in creating lasting friendships.

What are Autism Spectrum Disorders?

Autism Spectrum Disorders (ASD), also referred to as Pervasive Developmental Disorders (PDD), are believed to be caused by neurological differences in brain development with possible genetic origins. Although there is significant research exploring the neurological and genetic causation of ASD, we are still a long way from truly understanding the cause for autism symptoms in any individual.

In 1943, the term "infantile autism" was first coined by Dr. Leo Kanner to describe the most severely affected children who showed extreme social withdrawal. Today, the *Diagnostic and Statistical Manual of Mental Disorders* (4th Edition Revised, American Psychological Association, 2000) used by physicians and psychologists to make diagnoses includes five variants of Pervasive Developmental Disorders: Autistic Disorder, Asperger's Disorder, Rett's Disorder, Childhood Disintegrative Disorder and, for those whose autism symptoms do not quite meet the criteria for one of those four disorders, Pervasive Developmental Disorder – Not Otherwise Specified. (For more information on PDD diagnoses see: www.autism-society.org/about-autism/diagnosis/diagnostic-classifications.html).

For all individuals with diagnoses under the PDD umbrella there is agreement that people with ASDs share challenges in three domains:

1. Social Interaction

Children and adults with ASDs have difficulty interacting with other people. This will likely include challenges in initiating, responding to or maintaining interactions or conversations, and will present differently depending on age and cognitive level of functioning. In the most severe cases, the individual will actively avoid interactions or may appear oblivious to others' presence. While at the other end of the spectrum, they will demonstrate a desire to interact, but lack the appropriate skills to make social interactions effective.

1. Communication

All individuals with ASD have qualitative difficulties in how they communicate, both verbally and non-verbally. These challenges will range from a lack of language and gestures in the most severe cases, to the use of complex language that may be odd or inappropriate in those who have Asperger Syndrome (AS) or high functioning forms of Autistic Disorder (AD) where speech and intellectual abilities are within the normal range.

2. Behaviour

For individuals with ASD of all ages and abilities, they may show one or more highly

repetitive and often non-functional behaviours (e.g., hand-flapping, spinning objects). This could also include inappropriate and/or inflexible routines within daily activities or play or a highly restricted range of interests within play or conversation.

While all individuals with ASD have some sort of difficulty in each of these areas, the specific difficulties vary from person to person. It is important to remember that no two individuals will share the exact same pattern of difficulties. This is why autism is now commonly referred to as a spectrum disorder to represent the broad range of abilities and challenges found among those with autism.

What are the social challenges faced by Individuals with ASD?

Preschool

Social challenges for most children with ASD are detectable in early childhood or even infancy (Wicks-Nelson & Israel, 2006). For those with autism, problems with eye contact, responding to their name, sharing attention and imitation skills are some of the earliest signs of social challenges. These signs may persist, especially for those with more severe cognitive challenges, and they may remain socially indifferent or even socially avoidant. At the other extreme, toddlers and preschoolers who receive a diagnosis of Asperger's Disorder or Asperger's Syndrome (AS) or Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) may have social challenges that initially go undetected because they are very similar to the behaviours seen in typical children going through the "terrible twos" (for example, defiance, tantrums). What may distinguish children with ASD from typical two-year-olds is the extreme social inflexibility, insistence on sameness, and severe tantrums or "meltdowns" associated with change in routines, transitions or any situation where the child is not able to control the situation or get what he or she wants. These highly inflexible patterns that lead to meltdowns are quite common in children with ASD of all ability levels. For verbal children, such as those with AS and High Functioning Autism, their inflexibility often shows up as a strong need to control and direct the play or activities of siblings and peers, and they may be unwilling to follow someone else's direction or example. The impact of extreme inflexibility and frequent and persistent upsets is to stigmatize and further isolate the child from peers and potential friends.

School-Age

Without effective early social intervention, the problems of early childhood are likely to persist and may escalate with the increased social demands of school. Children with ASD often have limited play abilities and show minimal interest in play with peers. However, when there is interest in peers, which is more typical in children with some language development, these children usually lack the appropriate skills to initiate play, to respond to the play invitations of peers, or to learn to play through observation of peers. Their attempts at social interaction may be immature and may include intrusions into personal space, inappropriate touching or even aggression. For many children, their confusion about the social world and failures in interacting or making friends may lead them to avoid social interactions altogether. When they do have friends, their friends tend to be very accommodating children who acquiesce to their need to control play. Maintaining friendships as they get older can be very challenging given that typical children become less tolerant of the one-sided nature of the friendships, especially when the conversational skills of the child with ASD are limited or the topics of conversation are restricted to special interests that don't match the peer's.

Adolescence

As children with ASD move into junior high and high school, they are likely to be increasingly isolated from peers. For those who have severe autism or significant cognitive challenges, they are likely to persist with the same interests and play patterns of early childhood, which may lead to stigmatization amongst peers. However, the school's efforts to create an environment of acceptance and inclusion may help to minimize stigmatization and increase the potential for peer friendship. For those with higher language abilities, they may have greater awareness of their differences and greater potential for learning how to fit in. However, it is common that by adolescence they will have experienced social rejection or bullying, as well as the social anxiety that would naturally accompany these stressors. Anxiety Disorders or Obsessive Compulsive Disorders are more likely to be diagnosed in adolescence, to some degree a product of the increasing social pressures. Not surprisingly, these teenagers gravitate toward spending more time with adults who encourage them in their special interests, or they spend more time on their own, strengthening their knowledge or skill in areas of special interest or ability.

Adulthood

The challenges of adolescence persist into adulthood and are exacerbated by growing demands for independence beyond high school and, in most cases, fewer supports or services for building social connections and friendships (as pointed out in our past publication, *Forgotten: Ontario Adults with Autism and Adults with Aspergers*). As identified in our *Forgotten* report, socialization challenges include, "being overwhelmed by the presence of too many people, and/or by noise. They may be unable to concentrate sufficiently to learn new skills or participate in group activities. All of the above can lead to misunderstandings, frustration and behavioural issues" (2008, p. 11).

In the *Forgotten* report, it is suggested that, for some individuals with ASD, they may not have received a diagnosis until their late teens, meaning that they may have struggled through adolescence and early adulthood without appropriate services. As well, some young adults may have received an incorrect diagnoses or a diagnosis that no longer fits their profile. Without an appropriate diagnosis, the individual may not have access to any social skills interventions. To date, we have very little information on adult social skills programming for those with ASD.

Community Partner and Parent Surveys on Social Skills Interventions

The *Parent* and *Community Partner Surveys*, described below, were developed by our Potential (RCP) Programme staff (formally known as Realize Community Potential Program). The questionnaires were then refined by our Knowledge Project consulting team, Dr. Jim Bebko and Jessica Schroeder. The *Community Partner Survey* was posted on Survey Monkey from December 2010 to March 31, 2011, while the Parent Survey was posted for the month of March, 2011. For the *Community Partner Survey*, the Potential staff across the province made contact with professionals in their communities to invite them to participate in our on-line survey. Parents were informed of the *Parent Survey* through chapter e-newsletters and postings on the Autism Ontario website. No demographic information was requested from respondents through these surveys, although responses to certain questions about service providers allowed us to determine the general location of about 46% of respondents. With this information, we were able to determine that both the *Community Partner Survey* and *Parent Survey* had respondents in the sample well distributed from across the province.

Although the surveys did not include a question that identified respondents as Francophone, certain answers suggest that some responses originated from Francophones. Autism Ontario has an online survey designed to identify the needs of the francophone ASD community. To date, 134 Francophone surveys have been completed. A summary of responses related to social skills is summarized below.

COMMUNITY PARTNER SURVEY RESULTS

Based on this *Survey*, which had 80 Ontario community partners responding from across the province (i.e., both publicly-funded and privately-funded agencies, all of whom provide social skills training programs to people with ASD and other developmental disorders), the following observations were made.

Characteristics of those served

About half of the social skills program providers were serving children between the ages of 6 to 18, with less than 25% of respondents providing services to adults, and only about 10% of agencies providing services to individuals of any age. Virtually all of the 80 responding Community Partners were serving individuals with ASD in their social skills groups. However, many of these providers also served people with a variety of other diagnoses or individuals with ASD who had co-occurring disorders. About 45% served individuals with learning disabilities, cognitive impairments, and Attention Deficit Hyperactivity Disorder. Approximately 15-20% of providers served individuals with conduct disorders, mood disorders, and undiagnosed behaviour challenges.

Format of Social Skill Program Delivery

Approximately 70% of service providers reported that their social skills programs were delivered in a group format or a combination of a group and individual format, with less than 10% providing individual social skills training and 15% incorporating a parent or family component. In terms of the frequency of social skills training, 55% provided weekly training sessions, while 16% had daily sessions, 13% provided a few sessions per week, and 28% provided social skills groups

during summer camps and March breaks. Forty-five percent of providers kept waitlists for social skills programs. Of those with waitlists, 45% reported waits of one to three months, 45% had waits of 4 to 12 months, and 10% had waits from 13 months to over 2 years.

Curriculum Models and Influences

As to the specific curriculum used within social skills interventions, there was a wide range of responses. Two well-known teaching paradigms, Applied Behavioural Analysis (ABA) and Relationship Development Intervention (RDI) (see Appendix A) were indicated as influential by 14% of respondents. Some respondents (less than 8%) reported using the curriculum models of experts such as Tony Attwood, Jed Baker, Carol Gray, Brenda Smith Myles, and Michelle Garcia Winner. However, 16% of respondents indicated using other teaching approaches that had not been listed in the *Survey* (for example, play-based language intervention, etc.). Seventeen percent used multi-modal approaches, while 33% (the majority) used non-specific approaches without curricula (for example, play groups, sports activities, general activities, social clubs, participant-guided groups).

When asked which professionals influenced their program design, it was clear that program providers did draw on the expertise of recognized professionals, with Carol Gray (58%) and Tony Atwood (52%) having the most influence. Jed Baker (34%), Brenda Smith Myles (34%) and Michelle Garcia Winner (31%) were also reported as an influence.

Social Training Targets

The top-rated social skill targets reported by Community Partners in an open-ended question were: conversation skills (58%), teaching of emotions (54%), group play including turn taking (45%), and social cognition (31%). Teaching of all other target behaviours was reported by fewer than 23% of Community Partners.

Teaching Methods

With regards to the methods used to teach social skills, the majority of service providers reported that they emphasized direct teaching of rules and conventions (for example, how to greet someone) and skills based training (78% and 68% reported respectively). Within direct teaching approaches, the following tools were used: visual aids (64%), video modeling (64%), naturalistic techniques (91%), peer training (68%) and parent training (used in 10-30% of the sessions). Other approaches that were used include: didactic instruction (lecture style; 33%), video feedback (36%), drama therapy (27%), and cognitive behavioural therapy (12%).

Staff Training on Social Skills Interventions

The majority of Community Partners reported that they received training on how to run social skills groups (89%) and on the use of visual supports (87%). Although training on other techniques was somewhat less frequently reported, (video modeling, 63%; parent and peer training, 74% each; and naturalistic techniques, 69%), it was heartening to see that many programs did provide training on these components.

Program Evaluation

Of the 62 Community Partners who responded to questions about evaluation, approximately 75% indicated that they used some form of program

evaluation. The three most common measures reported were parent satisfaction questionnaires (67%), participant satisfaction questionnaires (48%), and direct skills assessment by program staff (55%).

Challenges to Service Delivery

Although the service providers reported a variety of challenges associated with running social skills programs for individuals with ASD, such as cost and time constraints (25%) and divergent interests and motivations of participants (3%), the most common challenge was in meeting the diverse client needs associated with variations in age, level of functioning, diagnoses, and skill levels at intake (62%).

Program Success

In response to an open-ended question, Community Partners attributed their social skills intervention success to a range of factors, with the top three factors being the use of naturalistic strategies that promote skill generalization (29%), quality of staff (25%), and parent involvement (19%).

SUMMARY OF COMMUNITY PARTNER SURVEY RESULTS

50% of social skills programs offered were serving children between the ages of 6 to 18, while less than 25% offered programs for adults

70% of social skills programs were offered in a group format (or combo of group and individual)

58% of programs focused on conversational skills, with other targets being: teaching of emotions (54%), group play including turn taking (45%), and social cognition (31%)

89% of those leading social skills groups received training

87% of the programs used visual supports in their interventions

75% of the programs used some form of program evaluation

62% of the programs most common challenge was in meeting the diverse client needs associated with variations in age, level of functioning, diagnoses, and skill levels.

PARENT SURVEY RESULTS

The *Parent Survey* was designed, developed and implemented using the same method as the *Community Partner Survey*. The survey was advertised on-line to parents and caregivers of children with ASD across Ontario who had previously attended one or more social skills groups. As mentioned, information about how to access the *Survey* was distributed through local Autism Ontario Chapters in their e-news and the link to the survey was also accessible on the Autism Ontario website. In total, 134 parents responded to the *Survey*. Of these respondents, 90 parents completed the *Survey* in full. The total number of programs described by these 90 parents was 214. Parents were asked to comment on up to four different groups in which their child(ren) participated. Ninety parents responded to the parent satisfaction portion of the *Survey* and described 164 different social skills groups. For the following analysis, we chose to treat each of these evaluations as independent to allow for the variability in individual parent response across their child's social skill group experiences.

Why do parents put their children in Social Skills Groups?

Most parents indicated that they chose to put their children in social skills groups because of their concerns for their child's social and friendship development. A small proportion of parents were responding to recommendations from professionals. In only 7 cases (out of 118) was it clear that social skills groups were offered within the child's school.

What factors are parents looking for when choosing a Social Skills Group?

Of the 127 responses to this question, most parents reported that they first considered the reputation of those who were delivering the program and then whether the program targeted social skills that were of relevance to their child. Other factors they considered included: whether the program schedule worked for them, the model being used for intervention, and the location and cost of the program. Related to location, 75% of parents said they would be willing to drive no more than 30 minutes to get to a social skills program. Most parents wanted programs delivered on weekday evenings, on weekend days, or during summer camps or school break times.

Perceived Benefits of Social Skills Interventions

The five top benefits that parents were hoping to achieve for their children (in order of importance) included: (1) making friends, (2) learning conversational skills, (3) learning to interact appropriately with peers, (4) learning group play skills such as turn taking, and (5) general social skills.

Intake Process

Most social skills programs had minimal requirements at intake, with 18% of parents reporting no intake process. For most programs, a parent interview was all that was required. Some programs had registration forms and parent questionnaires, but very few had intake screening assessments or pre-service interviews with participants to assess social skills.

Focus of Social Skills Groups

Social skills groups ranged in length from 4-12 sessions. Parents perceived that the main focus of social skills groups was predominantly for friendship development and learning group play skills. Other social targets were reported less frequently, including general social skills, conversational skills, managing conflicts, and training in emotions.

Parent Involvement in Monitoring or Evaluating Social Skills Training Program

Of the 134 programs evaluated by these 90 families, only 45% of the time parents were encouraged to monitor the effectiveness of their child's progress. Of those who gave specifics about how they evaluated progress (54%), the majority was asked to complete formal questionnaires (65%) or to conduct informal monitoring (35%).

Parent Perception of Intervention Effectiveness

Parents' perceptions of effectiveness were variable across the social skills groups within which their children participated. On most measures of success, the majority of parents (56 %) indicated that their children benefitted "adequately" from the social skills groups. On several measures of specific social skills (for example, trying new activities, getting along with others, initiating conversations, peer interaction skills), a significant proportion of parents (25% or higher) reported that the program results exceeded their expectations. However, on several measures, including maintaining relationships, making friends and self-regulation, there were decidedly low ratings in parent perception of effectiveness. This is not surprising given that many complex social skills underlie these larger social goals; it may not be realistic to expect significant change on these larger goals within the short time span of a social skills program. Despite this, most parents reported good overall outcomes for their children.

Parent Satisfaction

Of the 134 programs evaluated for parent satisfaction, parents were satisfied 81% of the time with their child's involvement in the social skills groups and would recommend their child's group to other parents. It is noteworthy that 30% of parents did not complete the satisfaction portion of the *Survey*, leaving us to wonder what non-responding means. One speculation is that non-responders were constrained in expressing dissatisfaction given concern that any criticism might jeopardize participation in the existing programs. On the other hand, these parents may not have been interested in evaluating program effectiveness given that these groups provided general benefits that were highly valued no matter what gains their children did or did not make, such as play opportunities for their child, brief respite, and opportunities to meet other parents of children with ASD, potentially leading to friendships outside of the social skills groups.

Barriers to Social Skills Group Effectiveness

Parents identified a wide range of barriers that impeded their child's involvement in social skills groups, with the top five barriers being location, cost, schedule, fit within the group (related to age-appropriateness, functioning level, diagnoses) and child's interest in participating. Of the 21 families who reported being on waitlists, more than half (57%) had waited over 7 months, suggesting that for some families, program availability is a barrier. As well, many families (40%) reported being denied access to a social skills group, most often due to age or group incompatibility. This suggests that there may be insufficient social skills group options that meet the diverse needs within the ASD community. Although 'language' was not included in the list of barriers, one parent noted that they chose to respond to the survey although their child was not involved in a social skills group. The reason for lack of involvement was that no group was available for their child because he is either too young or no group was available in his mother tongue (French). Results from a survey of Francophone needs, provided below, also identified 'language' as an important barrier.

SUMMARY OF PARENT SURVEY RESULTS

For only 45% of social skills programs evaluated were parents encouraged to monitor the effectiveness of their child's progress.

For 56% of social skills programs evaluated, parents reported that their children benefitted "adequately" from the social skills groups, while for 27 % of the programs, parents felt their children exceeded their expectations in skill development.

For 81% of social skills programs evaluated, parents reported that they were satisfied with their child's involvement in the social skills groups and would recommend their child's group to other parents.

SOCIAL SKILLS INTERVENTION AND FRANCOPHONES IN ONTARIO

The following presents results of Autism Ontario's online survey *Sondage des besoins des familles francophones de l'Ontario* and input from members of the *Comité consultatif provincial pour les services en français* as it relates to social skill interventions.

To date, 134 parents have responded to the survey; 92% of respondents have children with ASD under the age of 18. Of that 92%, 25% have children from 0-5 years, 56% have children from 6-13 years, and 11% have children from 14 to 18 years of age.

When asked which programs they access and in which language, parents indicated the following related to programs of a social nature:

- 86% access social skills programs in English and 32% access them in French;
- 85% access specialized leisure activities in English and 35% access them in French;
- 62% register their children to English summer camps, whereas 53% register their children in French summer camps; (Note: at least one third of the respondents reside in the Ottawa region where a local organization has offered a camp for Francophone children and youth with ASD for the past ten years).

Additionally, parents indicated that they do not access the following services as they are offered only in English:

- Specialized leisure activities: 48%
- Applied Behaviour Analysis (ABA), a structured, evidence-based approach used to teach a wide range of skills, including social skills: 20%
- Although "social skills group" was not a choice listed, one parent identified it as a service not accessed because it is only available in English

52% of parents identified a number of services they would like to see available in French, with almost half the services relating directly to social programs, leisure activities or camps.

40% of parents identified concerns related to social matters, including bullying and its sub-sets.

Parents identified the following as the three major factors preventing them from accessing services in French in their community:

- Availability of services: 70%
- Cost: 36%
- Distance: 30%

In addition, parents identified the following factors affecting access to French language services: lack of awareness about services available in French in their community, lack of specialized programs designed for children with ASD or for different age groups or levels of ability, additional costs related to providing support for their child to attend programs and waiting lists.

Some parents access programs and events provided by Autism Ontario. When asked which Autism Ontario resources, they would like to access in French, parents who responded identified the following social activities:

- Leisure activities (80%)
- Athletic events (78%)
- Social events for the family (76%)

- Camp subsidies (64%) therefore providing social opportunities

The lack of French language services was consistently mentioned in the parents' responses and comments. Distance, cost and lack of time were also important factors affecting parents' ability to access programs, even when available in English. In terms of costs, parents added that cost does not only apply to registration costs but also to the cost of providing support for their child to attend. In addition, it was underlined that the cost of private, skilled professionals to run the programs affected how long a program could be offered.

The lack of qualified staff able to provide quality services in French also affects availability of programs. Regional services providers, French language school boards, and community agencies, all experience this unfortunate reality. In general, English positions, which are much more numerous than Francophone positions, are easier to fill, which creates additional pressures on an already over-taxed system. In addition, the large geographical area that agencies must serve contributes greatly to their lack of ability to provide services or ongoing services. This means that Francophones are at a constant disadvantage and often have to wait longer for services. For example, Northern Ontario has a very high concentration of Francophones but also represents over 1,000 kms from one end to the other. Time spent in travel and the reality of Northern Ontario winters significantly reduces service provision.

Even in areas of the province where there is a greater concentration of Francophones, there is a significant lack of programs offered in French. If offered in English and parents choose to register their child, the question of language comes up. Attending an English program creates additional pressure for Francophones with ASD and their parents in terms of learning and generalization of material covered. This pressure is increased further for immigrant children and youth with ASD where a third language may be spoken in the home. Attending an English program is much more complicated than simply speaking English. Adapting to English involves adapting, to a certain level, to the culture as well, a significant chore for children and youth already struggling with communication and social interaction.

The ability to deliver quality programs in French is also affected by a lack of quality curriculum available in French. Very little is available in French. Although some documentation has been translated into French, the time it takes to translate, the lack of agreement on French terminology and failure to have the translation verified by experts in the field of ASD severely affects the availability of quality material in French. Service providers are committed to providing quality services in French and will attend English training events in the hopes of increasing the tools available in providing quality services but new tools are only useful once translated into French. Often they are translated as the program is being delivered. Given that service providers specialize in the field of autism and not in translation, the quality of translation varies significantly. Further, the cost of professional translation and the lack of financial resources to access this service mean every individual service provider is responsible for its own translation. This pulls even more resources from direct services to clients as translation takes time, often a significant amount of time.

In conclusion, there is a clear and pressing need for quality programs targeting social skill development for Francophone children and youth with ASD. There are also a number of important factors that must be addressed to ensure access.

SUMMARY OF LITERATURE REVIEW OF SOCIAL SKILLS INTERVENTIONS

Why does science matter in choosing social skills interventions?

The diversity of approaches to teaching social skills to children with ASD presents a challenge for parents, educators and professionals. How does one choose what interventions will be best suited to meet the needs of a particular child or group? We are recommending that a scientific evidence-based approach be used when choosing or designing any social skills interventions for children and adults with ASD. However, when it comes to choosing social skills interventions, finding evidence-based approaches may not seem so important or even feasible given the limited number of programs available in most communities. Parents are simply trying to find any program that has the potential to help their child function better in the social world and often do not have the luxury of being choosy.

Despite limited existing options and constraints on resources to create new options, it is crucial that parents and educators are aware of what intervention components have been demonstrated through research to be effective in teaching social skills. With this knowledge, parents and educators will be able to advocate for, or create social skills programs that have the best chance of making a real difference to people with ASD in developing social understanding and social skills.

How do we evaluate social skills intervention programs?

We can see from our *Community Partner Survey* results that many service providers are interested in and are attempting to evaluate their interventions. Most programs are currently using indirect assessment measures, such as parent or participant satisfaction ratings or ratings of perceived program effectiveness. These ratings reflect the rater's opinions, expectations and judgments of the effects of the intervention and do not necessarily reflect actual improvements in the behaviours and skills of the person with ASD. In contrast, direct assessment of program success involves direct observation comparing skill level often before, during and after intervention to measure actual skill improvements within the training setting and generalization to other natural settings where the social skills are needed. Although satisfaction measures are critical, direct measurement has the advantage of objectively monitoring behaviour change over time and allowing the instructors to make timely decisions to modify, discontinue or add new interventions when progress is slow. Although it requires more work to evaluate programs through direct measurement and it is not always easy to arrange direct observations that are not contrived or obtrusive, we know that with direct assessment professionals, parents and participants can be more confident that valuable time will not be wasted on ineffective interventions.

How do we interpret the social skills training research?

Most of the social skills research related to persons with ASD consists of case studies, single-subject design experiments or small group comparisons. Any one study on its own will have limited generalizability to the application to all persons with ASD. However, when research on interventions are replicated with similar subject populations, and when consistently positive results are obtained by independent researchers, we can use these combined results to suggest promising interventions worthy of further evaluation. The more high quality research studies we have that show similar results,

the greater will be our confidence in claiming that a particular intervention is effective.

What criteria do clinical researchers use to evaluate a body of research?

Clinical researchers look for Evidence-Based Practice (EBP). EBP refers to intervention models and strategies that are grounded in research. Scientific research is needed before it can be determined whether an intervention is beneficial, including whether it results in measurable cognitive, behavioural, emotional or social gains. Ideally this research should be conducted before the intervention is widely implemented.

Research on intervention models often examines whether the intervention is efficacious and effective. Efficacy research investigates the clinical significance of the intervention, examining whether the intervention is beneficial under well-controlled conditions, as in control group comparisons or single-subject research designs (*Chambless & Hollon*, 1998). Effectiveness research investigates the clinical utility of the intervention, examining whether the intervention is useful in "real life" settings, including schools and community-based programs (*Chambless & Hollon*, 1998). The accepted criteria for determining whether an intervention is an EBP are as follows: for an intervention to be considered evidence-based, there must be at least two high-quality group research studies or five single-subject research studies, and the studies must have been conducted by different researchers. In addition, the studies must have sound research designs which demonstrate strong experimental control (which ideally will include comparison or no-treatment group and randomized group assignment), and the studies must utilize reliable and valid outcome measures (*Chambless & Hollon*, 1998; *Odom et al.*, 2005; *Wang & Spillane*, 2009)."

What was our literature review process for assessing social skills research?

Wang and Spillane (2009) pointed out that the majority of social skills training curricula commonly used in clinical and educational settings lacked rigorous scientific evaluation and, as such, did not meet criteria for EBP. Although it would be ideal to base our social skills programs on well-researched curriculum, that research is only just beginning to be published. For example, independent researchers have published two promising papers on Winner's Social Thinking curriculum (Crooke et al., 2007; Lee et al., 2009); however, much more research is needed to establish the efficacy and effectiveness of the Social Thinking curriculum. Frankel and Laugeson have published two randomized control trial (RCT) studies on their manualized friendship development curriculum (i.e., PEERS model - Laugeson & Frankel, 2010, 2008; Children's Friendship Training - Frankel & Myatt, 2010) which both produced promising results that require independent replications to be considered EBP.

What is important to keep in mind about social skills curricula is that these curricula were created by autism experts with decades of experience in working with people with ASD, such as those programs referred to in our *Community Partner Survey*. Although their whole curriculum may not be thoroughly researched, these experts typically base their programs on components of social skills interventions that do have some level of research support.

One excellent example of an Ontario social skills program evaluation that has yet to be peer-reviewed (that is, reviewed by fellow researchers to assess the quality of the research project) comes out of the Centre for Addictions and Mental Health (CAMH) in Toronto. Lunsky, Weiss and Viecili (2010) conducted a program evaluation of a social skills program involving 40 teens with Asperger's

and their parents. They wrote a report on their project called, Evaluating the CAMH Social Skills Program for Youth with Asperger Syndrome and their Parents. Out of this project, these clinical researchers have been able to disseminate their findings to many agencies across Ontario through production of a training DVD used in presentations about their intervention.

For the following review, we have focused on peer-reviewed research and we make a distinction between social skills curriculum and social skills interventions. In the following review, we have kept our focus on social skills interventions that are not curriculum specific. From the past decade (2001-2011), 12 review papers were written to summarize and interpret social skills interventions for persons with ASD; as well, there have been three meta-analyses conducted during this period, which pooled and re-analyzed data from related social skills research studies. We have used these review papers and meta-analyses to identify the best interventions to use in developing social skills programs.

SOCIAL SKILLS INTERVENTIONS REVIEWED

The following is a summary of the key findings from these 12 reviews and three meta-analyses related to social skills interventions for individuals with ASD. Based on all of these reviews, only one type of intervention, that of video modeling, met the rigorous criteria for EBP using the criteria set out by Chambless and Hollon (1998). All other interventions that are reviewed below had some level of support from the research literature and would be considered promising for inclusion in social skills interventions, but require ongoing research evaluation of efficacy and effectiveness.

Video Modeling

Video modeling involves the use of videotaped demonstrations of skills being performed where the individual watches the video and subsequently imitates the behaviours depicted. Video modeling is an intervention strategy that has been implemented across multiple populations to address a variety of target behaviours (Bellini & Akullian, 2007). With respect to teaching social skills to individuals with ASD, research has shown that video modeling may be useful for improving a number of skills, including play, social initiations, conversational speech, and perspective taking (Bellini & Akullian, 2007; Scattone, 2007).

Numerous research studies and review papers have examined the effectiveness of video modeling as an intervention strategy to teach social skills to individuals with ASD (as reviewed by Bellini & Akullian, 2007; Reichow & Volkmar, 2010; Scattone, 2007; Wang & Spillane, 2009). Bellini and Akullian (2007) conducted a meta-analysis of twenty-three research studies on video modeling. Findings of the analysis indicate that video modeling is an effective intervention (Bellini & Akulluan, 2007). Wang and Spillane (2009) conducted a meta-analysis of thirty-eight research studies on social skills interventions, which included eleven studies on video modeling which also provided strong support for video modeling as an effective social skills intervention. In addition to demonstrating the effectiveness of video modeling, Bellini and Akullian (2007) and Wang and Spillane (2009) concluded that video modeling meets the criteria to be considered an EBP.

Social Stories™

Social Stories™ is a social intervention tool developed by Carol Gray (2010) which involves the creation of short stories that serve to describe a social situation that has been challenging for an individual, the appropriate response expected within that situation, why that response is expected, and the positive impact for self and others when we choose to behave as expected. Although Carol Gray has provided several books of generic Social Stories™, many parents, educators and

professionals choose to write individualized social stories following the format prescribed by Carol Gray to meet the specific needs of their children, students or clients. These stories are highly structured, following a set of criterion on the number and type of sentences included within the story. They often include drawings or pictures to enhance comprehension, especially for younger or less verbal children. Stories are read by the person with ASD or read to that person by a teacher or caregiver prior to the challenging activity or situation. Social Stories™ are widely used in clinical and educational settings, likely due to the ease of implementing this intervention, and have been used to teach a variety of social skills, including peer interaction, social initiations, and alternatives to inappropriate behaviours, such as tantrums (Kokina & Kern, 2010).

A number of research studies have examined the effectiveness of Social Stories™ in teaching social skills to individuals with ASD. The findings of meta-analyses conducted by Reynhout and Carter (2006), Wang and Spillane (2009), and Kokina and Kern (2010) each indicate that, despite sufficiently high quality research, Social Stories™ have questionable effectiveness as a social skills intervention. According to Kokina & Kern (2010) and Wang and Spillane (2009), the wide variability of individual outcomes in response to the intervention creates lower confidence in the effectiveness of Social Stories™ and, thus, it is recommended to closely monitor and evaluate the effectiveness of Social Stories™ on an individual basis. Continued research is needed to determine under what condition or for which individuals are Social Stories™ most likely to be effective in changing or improving social behaviour.

Social Skills Training Groups

Social skills training groups provide instruction to a small group of individuals with ASD over a specified period of time, where complex social behaviours and specific social skills are broken down into components and taught in a step-by-step manner, often following the principles of Applied Behaviour Analysis (ABA; see Appendix B). These interventions incorporate a variety of behavioural teaching techniques, such as prompting, shaping, motivational strategies, and manipulation of environmental variables to promote the systematic acquisition of target skills, however various teaching techniques and additional intervention strategies may be used. Target behaviours have included social communication, responding to and initiating conversations, interactive play skills, empathy and perspective taking, conflict resolution and making friends (Cappadocia & Weiss, 2011).

There is a growing body of research literature examining social skills training groups for individuals with ASD (as reviewed by Cappadocia & Weiss, 2011; Rao, Beidel & Murray, 2008; Reichow & Volkmar, 2010; White, Keonig & Scahill, 2007). Despite the number of research studies and review papers, to date no meta-analyses have been conducted on the research to investigate the overall effectiveness of the intervention, or to draw conclusions on whether group intervention meets the criteria to be an EBP. Descriptive review papers of research studies on social skills training groups indicate generally positive results; however, for the most part the target behaviours and procedures utilized vary considerably, and outcome measures and intervention effects are inconsistent (Rao et al., 2008; Reichow & Volkmar, 2010). Due to several methodological weaknesses of the research, at this time social skills training groups do not meet the criteria to be considered an EBP (Rao et al., 2008; White et al., 2007). However, this intervention can be considered promising, depending on whether the curricula and training methods used are themselves EBP. More well controlled research studies are needed on social skills training groups in order to establish the effectiveness of group interventions, and identify which evidence-based curricula and training strategies lend themselves to group instruction.

Cognitive Behavioural Training

Cognitive behavioural training (CBT) as used in teaching social skills for persons with ASD involves increasing knowledge about the social world and, at the same time, increasing awareness of thoughts and feelings that underlie challenging behaviours. It is assumed that by increasing social knowledge, self-awareness, and coping skills, there is increased opportunity for lasting and generalized behaviour change. CBT is a multi-modal approach that combines cognitive teaching techniques with behavioural intervention. Curricula such as that developed by Jeanette McAfee (2001), Michelle Garcia Winner (2008) and Howlin, Baron-Cohen, & Hadwin (1999) are examples of cognitive-behavioural approaches, as each emphasizes changing social understanding as a precursor to changing social responsiveness.

With respect to teaching social skills to individuals with ASD, research has shown that CBT may be useful for improving perspective taking, emotion regulation, and social problem solving (Bauminger, 2007). The meta-analysis conducted by Wang and Spillane (2009) included three studies on CBT, and the findings of the analysis indicated that CBT has moderate to very high effectiveness. However, currently not enough high-quality research has been conducted on this intervention, and as such CBT does not meet the criteria to be considered an EBP for social skills training in autism intervention (Bauminger, 2007; Wang & Spillane, 2009). Based on existing research, this intervention can be considered promising, and with more research, its effectiveness with individuals with ASD may be more clearly established (Wang & Spillane, 2009).

Self-Management Training

Self-management training refers to procedures in which the individual monitors and reinforces his/her own behaviour. This intervention strategy requires self-recording of the occurrence of target skills, often using checklists, wrist counters or tokens. In addition to promoting independence from adult supervision and monitoring, this intervention strategy has been used to address eye gaze, nonverbal mannerisms, voice volume, preservation of topic, social communication, play skills, and sharing (Scattone, 2007; Weiss & Harris, 2001).

Few research studies have examined the effectiveness of self-management as an intervention strategy to teach social skills to individuals with ASD (as reviewed by Scattone, 2007; Weiss & Harris, 2001). Although preliminary research findings suggest that self-management leads to improvements in behaviour and generalization of skills, these interventions do not yet meet the criteria to be considered an EBP in teaching social skills to individuals with ASD.

Activity-Based Intervention

There is recent suggestion that activity-based social skills interventions that capitalize on the special skills or interests of the child with ASD (for example, play with LEGO® blocks; computer skills group) may be effective in increasing appropriate play and decreasing inappropriate behaviours, while increasing peer social preference (Schreiber, 2011). In these interventions, play is organized around activities of joint interest with teaching of social skills embedded within the activity. Schreiber suggests that developing skills in areas that are valued by peers may be more important than social awareness or skills training. Given that there are limited studies on activity-based interventions and that all studies had methodological limitations, these preliminary results should be viewed as worthy of further investigation, but not yet meeting criteria for EBP.

Peer-Mediated Intervention

Peer-mediated intervention refers to procedures in which peers, often classmates, provide social skills training instruction and implement intervention programs. Peer-mediated intervention can take many forms, including integrated playgroups, play

dates, peer networks, peer tutoring, and pivotal response training. Peer-mediated intervention has been used to teach social skills to individuals with ASD, including joint attention, social communication, social initiations, peer interaction, and turn taking, as well as to reduce inappropriate behaviour (Chan et al., 2009; McConnell, 2002; Schreiber, 2011).

An abundance of research has been conducted on peer-mediated intervention strategies with individuals with ASD, with an emphasis on teaching social skills (as reviewed by Chan et al., 2009; DiSalvo & Oswalk, 2002; McConnell, 2002; Schreibman, 2011; Wang & Spillane, 2009; Weiss & Harris, 2001). It has been suggested in descriptive research reviews that peer-mediated intervention is effective for teaching social skills (DiSalvo & Oswalk, 2002; McConnell, 2002; Schreiber, 2011). However, the meta-analysis conducted by Wang and Spillane (2009) included nine studies on peer-mediated intervention, and the findings indicate that peer-mediated intervention had questionable effectiveness. Given these results on peer-mediated interventions, their use should be monitored closely for individual differences.

Parent Training in ASD

There is considerable evidence for the effectiveness of parent training in reducing behaviour problems in typically developing children (Thomas & Zimmer-Gembeck, 2007) and in teaching skills to children with developmental disabilities (Matson, Mahan & LoVullo, 2009). A literature review by Matson et al. (2009) suggested that the use of parent training in ASD is promising, and despite wide use of this strategy, there is little research on training parents to intervene in their children's social skills development (Reichow & Volkmar, 2010). One noteworthy exception is the research led by Frankel and Laugeson on parent-assisted friendship training programs for children and teens with ASD (Laugeson et al. 2009; Frankel et al. 2010). This is the first curriculum-based research with a major parent training component that has produced promising results. As parent training is only part of the friendship training intervention, a separate description of the research is warranted.

Friendship Training Curriculum

Frankel and Myatt (2003) developed the Children's Friendship Training (CFT) model over the past two decades at UCLA. Out of the CFT model came the PEERS (Program for the Education and Enrichment of Relational Skills) model for teens (Laugeson and Frankel, 2010). Both the CFT and PEERS programs are manualized multi-faceted group interventions for children and teens that include many ABA strategies, such as direct instruction, role-playing, modeling, rehearsing the behaviour, and weekly socialization homework assignments. They include a strong parent-training component, involving weekly separate but concurrent parent and child/teen sessions. During these sessions, parents are given training on how to promote generalization of the targeted social skills in the home during hosted get-togethers with typical peers. To evaluate the

PEERS program, Laugeson et al. (2009) used a randomized control design to study friendship development in 33 teenagers, ages 13 to 17, with HFA. Teens with HFA were randomly assigned to the 14-week PEERS group or to a delayed PEERS training group in the following 14-week period. Frankel et al. (2010) conducted a similar study with 88 children from grades 2 to 5 who were randomly assigned to the Children's Friendship Training (CFT) group for 12 weeks or to a delayed treatment condition in the following 12-week period.

In both Laugeson et al. (2009) and Frankel et al. (2010), the target behaviours were similar and included skills in conversation, group entry and exit, rules for social etiquette during extracurricular activities, promoting successful peer get-togethers with parent support, and handling of teasing. Participants in both studies made significant gains on several indirect measures following their training. For example, they were rated as having greater engagement with peers during "get-togethers", significantly better quality of friendships at the end of intervention, lowered participant perceptions of loneliness, and greater parent perceptions of overall social skills. There were no direct observational measures used to show gains in friendship skills; however the frequency of get-togethers increased significantly. Although this research can be considered promising, the PEERS and Children's Friendship Training research cannot yet be considered sufficient to meet the criteria for evidence-based practice. However, the results are sufficiently positive and warrant replication by independent researchers.

CONCLUSIONS FROM RESEARCH LITERATURE REVIEW

With regard to social skills interventions, only video modeling procedures have been sufficiently researched and found to be consistently effective in teaching social skills to individuals with ASD. Many of the social skills interventions we reviewed have been identified as "promising", but lack sufficient research support to be considered for evidence-based practice (for example, Social Stories™, Cognitive Behavioural Therapy, Self-management, Activity-based interventions). Social skills group training and peer-mediated interventions can also be considered promising; however, the effects across studies were not consistent, suggesting the need for continued research to determine what types of groups work best with different types of individuals with ASD.

Continued research replicating positive outcomes is needed with all social intervention strategies to ensure that individuals with ASD are receiving high-quality social skills instruction that promotes skill generalization and makes a real difference to the larger goals of social competency, peer acceptance and inclusion, and friendship development.

With regard to research on social skills curriculum, the work of Frankel, Laugeson and colleagues provides one of the first well-researched examples of curriculum-based social skills training research that pulls together several effective intervention strategies, most notably, ABA teaching strategies and parent training to promote skill generalization. The two studies described above (Laugeson et al., 2009; Frankel et al., 2010) generated sufficiently positive outcomes and were replicated across two moderately-sized samples using randomized control trial procedures. Continued research on the PEERS model with independent researchers is a logical next step. Given the promising nature of this research, the CFT and PEERS curriculum could be used in clinical practice with appropriate training and ongoing evaluation to ensure individual effectiveness and generalizability of skills to home, school and community.

SUMMARY OF SOCIAL SKILLS TRAINING RESEARCH REVIEWS	
Intervention	Research Reviews
Video-modeling *	Bellini & Akullian, 2007 Reichow & Volkmar, 2010 Scattone, 2007 Wang & Spillane, 2009
Social Stories	Kokina & Kern, 2010 Reynhout & Carter, 2006 Scattone, 2007 Wang & Spillane, 2009
Social Skills Training Groups	Cappadocia & Weiss, 2011 Rao, Beidel & Murray, 2008 Reichow & Volkmar, 2010 White, Keonig & Scahill, 2007
Cognitive Behavioural Therapy	Wang & Spillane, 2009
Self-Management	Scattone, 2007 Weiss & Harris, 2001
Activity-Based Programs	Schreiber, 2011
Peer-Mediated	Chan et al., 2009 DiSalvo & Oswald, 2002 McConnell, 2002 Reichow & Volkmar, 2010 Schreiber, 2011 Wang & Spillane, 2009 Weiss & Harris, 2001
Parent Training	Reichow & Volkmar, 2010 Schreiber, 2011

** Only Video-modeling has sufficient research to support its use in "evidence-based practice". All other procedures reviewed are considered promising and worth continued research.*

GENERAL OBSERVATIONS AND RECOMMENDATIONS

There is general agreement that behavioural training in social skills will lead to the biggest gains in improved social functioning and quality of life for persons with ASD. Based on our survey results and review of the research literature to date, several observations and recommendations can be made regarding advocacy for, or creation of, social skills interventions.

GENERAL OBSERVATIONS

1. State of Existing Knowledge

It is important to acknowledge the wealth of research that has been conducted in this area over the past three decades. Despite the limitations of individual research studies on social skills interventions (for example, mostly small sample sizes, lack of direct assessment of skill acquisition, few measures of skill generalization or maintenance), collectively there is sufficient information on effective or promising strategies to guide us in moving forward to create comprehensive and effective social skills interventions.

2. Continued Program Evaluation

Although there is insufficient research to confidently identify "evidenced-based practices" aside from video modeling, when we looked at social skills training studies collectively through research reviews and meta-analyses (i.e., re-analysis of data across several related studies), we are able to see patterns that suggest promising interventions worth trying out in the programs we develop. It is important that any program we develop includes an evaluation component so that we can continuously assess what is working or not working, make program changes in a timely way, and not waste time on ineffective interventions.

3. Continued Research

We are far from knowing all there is to know about teaching social skills. Even if we use those interventions that have strong support in research or appear promising and worthy of more research, there are clear gaps in our understanding of what interventions or strategies will lead to lasting and generalizable effects. Parents, educators and clinicians are encouraged to collaborate with researchers in evaluating social skills interventions to help us understand how individual differences such as age, autism characteristics, level of cognitive and language ability, as well as family and cultural variables, all contribute to success or failure in social skills programs.

4. Program Evaluation of Curriculum

As emphasized in the literature review, very few curriculum-based interventions have been evaluated and no literature reviews exist on these comprehensive social skills programs. Where there is some evidence to support curriculum-based programs, as with the PEERS model, it is critical that researchers, parents, educators and clinicians work together to evaluate these curricula and publish their findings to help establish evidence-based practices in social skills interventions.

SPECIFIC RECOMMENDATIONS

In choosing what components to look for in a social skills program, whether you are designing your own child's or student's program or evaluating the best options available in your community, we are recommending that you consider the following:

1. Social Skills Curriculum

Of all curriculum-based models, the PEERS model for teens (Laugeson et al., 2008) and the Children's Friendship Training (CFT) model for children (Frankel et al., 2010) have the strongest research evidence to support their use for individuals with ASD. The use of these manualized friendship-training programs will require appropriate training from those who have been trained by Frankel, Laugeson and colleagues, as well as ongoing evaluation to ensure effectiveness and generalizability of skills to real life situations. Other Social skills curricula that have some research support are listed in Appendix A.

2. Ongoing Program Evaluation

In evaluating the implementation of any social skills curriculum, parents and professionals are encouraged to collaborate with researchers or those trained in program evaluation to ensure that the evaluation provides an accurate and comprehensive assessment of the program. Social skills assessment tools to be used in the evaluation can be drawn from the research studies listed in this literature review. Several assessment tools that may be useful are listed in Appendix C.

3. Choosing Social Skills Interventions

If you choose to design your own social skills program rather than using a pre-existing curriculum, you have a range of intervention strategies to choose from that research has shown to be evidence-based or promising.

a. Evidence-based practice. Video modeling is the only social skills intervention that has sufficiently strong research support to be considered suitable for inclusion as an "evidence-based practice". Despite the strength of the research on video modeling procedures, ongoing research and evaluation is needed to determine how these procedures can be used with individuals of different ages and ability levels.

b. Promising Interventions. The following intervention strategies have sufficient research support to consider them promising and worthy of using in your social skills program with persons with ASD:

- Social skills training groups
- Parent training
- Cognitive behavioural therapy (CBT) strategies

More research is needed on these interventions to determine the conditions under which they are effective (for example, with which age groups or developmental levels). Ongoing evaluation at the individual level will be needed to ensure effectiveness and skill generalization.

c. Interventions with insufficient research or variable results. For the following interventions, there is either insufficient research or the results across studies have been variable when the intervention was applied to teaching social skills to persons with ASD:

- Self-management training
- Activity-based interventions
- Peer-mediated interventions
- Social Stories™.

It is recommended that further research be carried out to clarify under what conditions these interventions are efficacious or effective. At this time, the inclusion of these strategies in social skills programs is questionable and, if used, should be closely monitored for effectiveness.

4. Focus on Skill Generalization and Maintenance

Very few research studies included opportunities to directly assess whether skills learned during social skills training actually generalized to real life social situations and led to better social functioning. As well, few studies incorporated follow-up assessments more than a couple of months following intervention to assess long-term maintenance or the need for "booster sessions" to re-establish gains if needed. Strategies for generalization and maintenance of social skills are provided in Appendix D.

5. Focus on Larger Social Goals

Making and maintaining friendships was one of the primary goals that parents in our survey had for their children participating in social skills groups; however, 46% of parents reported poor outcomes in maintaining relationships following intervention. It will be important for any social skills program to not only look at how to promote generalization and maintenance of specific social skills, but to consider curriculum models that promote these larger social goals. Details on the PEERS model for friendship development can be found in Appendix A.

6. Strive for Quality Adaptation of Social Skills Curricula

Material translated into French can vary greatly in terms of consistency of terminology, accuracy of autism related language, quality and universality of the French. Material must be adapted, not simply translated, and reviewed by people knowledgeable in the field of ASD to ensure quality and applicability.
When using translated material, it is recommended that regionally relevant language be used to facilitate generalization to the natural environment.

CONCLUSION

Based on our survey results and review of best practices in research on social skills training for persons with ASD, we see gaps in transfer of knowledge from research to practice. It is our intention that this document will provide a valuable resource to parents, educators, researchers and all community partners as they collaborate in bridging this gap by bringing best practice into social skills interventions for all persons with ASD.

Consistent with the Ontario Ministry of Education's commitment "to developing and implementing policies, programs, and practices that are evidence-based, research-informed, and connected to provincial education goals" (Ontario Ministry of Education, 2010, p. 1), we are committed to bringing research-informed practices to the teaching of social skills for persons of all ages and abilities on the autism spectrum. With the newest investment by the Ministry of Children and Youth Services into ABA programs for children with ASD, with a strong emphasis on social functioning, now is the time to use our research knowledge to support all stakeholders in improving the quality and effectiveness of social skills interventions for persons with ASD across the province.

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Appendix A

EXPERTS IN SOCIAL SKILLS INTERVENTIONS FOR PERSONS WITH ASD

Information is provided below on seven of the best-known experts on social skills interventions for persons with autism spectrum disorders (ASDs). All of these experts were referenced in the Professional and Parent Surveys. This information is provided as a resource to parents, educators and professionals seeking materials for teaching social skills to their children, students and clients.

The experts are listed in alphabetical order.

Expert's Name	Social Skills Contributions to the ASD Community	Important Publications/Resources Written by the Expert*
Tony Attwood	Dr. Attwood is a clinical practitioner who supports children and adults with AS, an international lecturer, and an adjunct associate professor and supervisor to post-graduate clinical students at Griffith University in Brisbane, Australia. Dr. Attwood's work is focused on improving individuals' social understanding, managing anxiety and anger, strategies for reducing bullying and teasing, helping children understand and cope with being different, as well as educating and training caregivers in increasing the quality of life for individuals with Asperger's Syndrome. Dr. Attwood has also been highly involved in academia and clinical practice focused on the use of Cognitive Behaviour Therapy (CBT) to decrease anxiety symptoms and manage anger in children with ASD.	*Asperger's Syndrome, Vol. 2 DVD Anger Management, Teaching Teachers, and Teenage Issues: Future Horizons Inc. (2003)* *Exploring Feelings: Cognitive Behavior Therapy to Manage Anger: Future Horizons Inc. (2004)*
Jed Baker	Dr. Baker is currently providing social skills training for students with ASD in Milburn Public Schools in New Jersey, as well as serving on the ASPEN professional advisory board and directing the Social Skills Training Project. As Director of the Social Skills Training Project, which uses a cognitive-behavioural approach to social skills training, his goals are: • To provide relevant social skill instruction that will generalize into daily routines. • To make socializing fun so that students want to socialize. • To help "typical" peers and professionals become more understanding, accepting, and engaging of those with social difficulties	*No More Meltdowns, Future Horizons Inc. (2008) (Southwick)* *Social Skills Training for Children and Adolescents with Asperger Syndrome and Social-Communication Problems. Autism Asperger Publishing Co. (2003) (Smith Myles)*
Fred Frankel and Elizabeth Laugeson	Dr. Frankel is the Director of the Parenting and Children's Friendship Program at UCLA, in Los Angeles, California, which offers empirically-based parent training and social skills training to children and adolescents with ASD. Dr. Frankel has conducted research on parent training to decrease behavioural difficulties and increase social skills in children and adolescents with ASD. As well, he is the Principal Investigator of the Parent-Assisted Friendship Training in Autism project which focuses on increasing friendship skills in children with HFA who are included in typical elementary school classrooms from grades 2-5. In partnership with Dr. Elizabeth Laugeson (at UCLA),Frankel has adapted the Children's Friendship program for a teenager population and called it PEERS – Program for the Education and Enrichment of Relational Skills. The parent component, which runs concurrent to training for both children and teens, addresses how parents can support their children in using what they learn in group to make and keep friends and to be accepted by those within their age group.	*Children's Friendship Training: Brunner-Routledge (2003)(Myatt)* *Friends Forever: How Parents Can Help Their Kids Make and Keep Good Friends: Jossey-Bass (2010)(Frankel)* *Social Skills for Teenagers with Developmental and Autism Spectrum Disorders- The PEERS Treatment Manual: Jossey-Bass (2010) (Laugeson & Frankel)*

** Names in brackets listed after publishers represent the co-authors for these publications.*

Carol Gray	Carol Gray is the Director of The Gray Center for Social Learning and Understanding in Grand Rapids, Michigan. Carol Gray is best known for developing *Social Stories and Comic Strip Conversations*, intervention tools which are used by parents and educators to share accurate social information to an individual with ASD in an easily understood manner with the intent to help the person understand not only what is expected behaviour in specific social situations, but why the behaviour is important and what difference it makes for future interactions. She has written numerous articles, books, resources, and chapters on the subject of increasing social skills in individuals with an ASD and has over 20 years of experience in working with students in this population in public schools as a teacher and consultant.	*My Social Stories Book: Jessica Kingsley Publishers (2002)(White)* *New Social Story Book- Revised and Expanded 10th Anniversary Edition: Future Horizons (2010)*
Steven Gutstein	Dr. Gutstein developed and directs the Relationship Development Intervention (RDI) Program for ASD at his Centre in Houston, Texas. The RDI Program is described as "a tailored set of objectives, extending from the Family Guided Participation Program and intended to target the core deficits of individuals with the diagnostic distinction, Autism Spectrum Disorder. More specifically, the program operates as a comprehensive set of developmentally sequenced steps, committed to re-building the *Guided Participation Relationship* as the cornerstone for neural development. It also helps families construct opportunities for the child's neural growth and support their children in forming reciprocal friendships, mature emotional relationships, engaging in flexible/adaptive thought and mastering problem-solving abilities necessary for job attainment and success in the modern world.	*Relationship Development Intervention with Children, Adolescents and Adults: Social and Emotional Development Activities for Asperger Syndrome, Autism, PDD, NLD: Jessica Kingsley Publishers (2002)(Sheely)* *Relationship Development Intervention with Young Children: Social and Emotional Development Activities for Asperger Syndrome, Autism, PDD and NLD: Jessica Kingsley Publishers (2002)(Sheely)*
Brenda Smith Myles	Dr. Smith Myles is an associate professor in the Department of Special Education at the University of Kansas where she co-directs a graduate program in ASD. Dr. Smith Myles has sat on many advisory boards across North America involved in conducting applied research, providing direct services or education, raising awareness to caregivers and the community, and addressing mental health challenges associated with an ASD diagnosis. Dr. Smith Myles is best known for her work on *The Hidden Curriculum*, in which she makes explicit the myriad of social rules and conventions that are not taught in schools and without which one cannot survive in the social world. Dr. Smith Myles has many publications and writes about topics including: managing anger and rage cycles, bullying, practical classroom strategies, social inclusion and the use of visual supports.	*The Hidden Curriculum: Practical Solutions for Understanding Unstated Rules in Social Situations: Autism Asperger Publishing Co. (2004) (Trautman & Schelvan)* *Asperger Syndrome and Difficult Moments-Practical Solutions for Tantrums, Rage, and Meltdowns: Autism Asperger Publishing Co. (2005) (Southwick)*
Michelle Garcia Winner	Michelle Winner is the director of the Social Thinking Centre based out of San Jose, California. Michelle Winner, Speech Language Pathologist and creator of Think Social Publishing, has developed a comprehensive Social Thinking curriculum and a myriad of resources to teach the kind of thinking that is foundational to learning social skills. Her ILAUGH model of social thinking assists teachers and parents in teaching concepts needed to process and react to social situations in order to succeed in solving social challenges. In their clinical work, Winner and her colleagues Pamela Crooke and Stephanie Madrigal work with small groups matched for age and social cognitive level to provide broaden social understanding and practise social skills within clinic and community settings.	*Thinking About You, Thinking About Me: Jessica Kingsley Publishers Ltd. (2003)* *Madrigal, S. Superflex... A Superhero Social Thinking Curriculum Madrigal & Winner (2008)* *(Note: This resource is not written by Winner, but is published through Think Publishing)* *Socially Curious, Curiously Social Think Social Publishing (Crooke) (2011)*

Resources used by Francophones:

Although very few resources by the above-mentioned authors have been translated into French, Francophones refer most often to material by Tony Attwood, Jed Baker, Carol Gray and Brenda Smith Myles and Michelle Garcia Winner, whose work has gained popularity following workshops offered by Autism Ontario in different areas of the province and the translation of workshop material for Francophone participants. The PEERS manual, or at least some parts of it, is currently being translated into French which can facilitate delivery to Francophone youth with an ASD in areas where Francophone professionals have been trained in the delivery of the program. In addition to the above, Francophones refer to the work of Isabelle Hénault, a psychologist and sexologist from Montréal. Her manual Asperger's Syndrome and Sexuality, from adolescence to adulthood is available in French and in English and used to guide socio-sexual programs. School board personnel in the Eastern part of the province access French social skill programs developed by the regional service provider in that area. These programs consist of structured social skills programs for children and youth with ASD.

Appendix B

WHAT IS ABA AND IBI?

Applied Behaviour Analysis (ABA) and Intensive Behavioural Intervention (IBI) are two approaches of support that are well recognized for being successful in working with individuals with ASD. The terms ABA and IBI are often considered interchangeable, however IBI is based on the principles of ABA.

Applied Behaviour Analysis. "Applied behaviour analysis is the science in which procedures derived from the principles of behaviour are systematically applied to improve socially significant behaviour to a meaningful degree and to demonstrate experimentally that the procedures employed were responsible for the improvement in behavior" (Cooper, Heron & Heward, 2007, p. 20. The main goal of ABA for children with autism is to give them the prerequisites necessary to learn naturally from their home, school and community environments. Goals are achieved through the use of environmental manipulations, modeling, shaping, reinforcement, feedback, and other behavioural strategies (Martin and Pear, 2007)

Intensive Behavioural Intervention. IBI refers to Intensive Behavioural Intervention and consists of procedures drawn from the field of ABA, in which a constellation of procedures, including Discrete Trial Teaching (REF Lovaas) and/or Verbal Behaviour training (Sundberg and Partington 1982), are used in teaching new skills on a one-to-one basis, often in association with decreasing or eliminating maladaptive behaviours. In the original research on IBI by Lovaas (1987), 40 hours per week of 1:1 therapy was found to be significantly better than 10 hours per week in allowing more children with autism to approach the developmental level of same-age peers by grade one. In Ontario, regional IBI programs were set up in 2000 to provide IBI to young children on the severe end of the autism spectrum, typically involving 20-40 hours per week of highly structured ABA teaching. There is sufficient quality research that identifies IBI as an Evidence-based Practice (Perry & Condillac, 2003).

The positive effects of ABA are so widely recognized that Ontario schools mandate the use of this approach through PPM-140 (Ontario Ministry of Education, 2007). ABA is an approach that can be used with learners of any age. ABA can be used to target one specific behaviour or a range of behaviours to increase or decrease.

More specifically, the intervention process of ABA is guided by an assessment of the participant's autism symptoms, current level of functioning and learning patterns. As the individual learns functional skills, assistance (prompting) is provided and systematically reduced (faded) until the individual demonstrates independence. As simple skills are acquired (mastered), the individual is then taught to combine them into more complex behaviours, and to use these skills in a variety of settings (generalization). Daily data recording provides continuous records of the child's progress, and enables ongoing and precise "fine-tuning" of teaching procedures.

Reinforcement is one of the core principles of ABA. Almost all recurring human behaviour is maintained by the events immediately following that behaviour. To teach, skills are broken down into small steps and each step is taught using a combination of repetition, shaping and rewards. This can be broken down as follows:

Antecedent (what happens before) + **Behaviour** + **Consequence** (What happens afterward)

or simply **A + B + C**

For example:

A = you and your family are hungry

B = you try a new recipe

C = your family is impressed and tells you how good it tastes

You are more likely to make this recipe again because you find praise pleasurable and the food tasty.

In teaching through the use of ABA principles, the consequence is called a reinforcer. Reinforcers are always pleasurable and increase the probability of a behaviour occurring in the future. ABA teaching of a vocal skill might look like this:

A = Teacher asks young child, "What sound does a cow make?" while holding up a plastic cow

B = Child answers "moo" (or is prompted to say "moo")

C = Teacher immediately imitates the "moo" and provides specific and enthusiastic praise (for example, "Moo! A cow says MOO!"), while also giving a tiny piece of highly preferred snack to the child.

In a more naturalistic style of ABA teaching, this consequence or reinforcer might be embedded in play where, rather than getting a food reward, the child is given access to play with the toy cow after saying "moo", which assumes that, in that moment, the child really wants the toy cow. In the future, the child is more likely to say "moo" when asked the question "What sound does a cow make?"

Ideally, extra rewards or reinforcers, are removed (or "faded") quickly following initial skill acquisition, leaving only verbal praise and natural reinforcers. Research has shown that pairing

praise with tangible rewards like treats, toys and social rewards (hugs, tickles, "high-fives") from early on in ABA teaching makes the verbal praise highly motivating on its own after tangibles have been faded.

We can be sure that all teaching involves the use of reinforcement whenever we see skills improve over time. The planned and systematic use of reinforcement to increase skills and prosocial behaviour is only one example of the many applications of ABA principles in teaching children with autism that distinguishes this approach from other teaching approaches. To learn more about ABA principles and applications to teaching children with autism, there are many excellent resources, as listed below.

References and Resources

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Appendix C

SPECIFIC SOCIAL SKILLS MEASURES

Bukowski, Boivin, & Hoza (1994). *Friendship Qualities Scale*.

Constantino, J. N., & Gruber, C. P. (2005). *Social responsiveness scale* (SRS). Los Angeles: Western Psychological Services.

Frankel, F., Erhardt, D., Renenger, K., Pataki, C. (unpublished). *Test of social skills knowledge*. (Available from UCLA Parenting and Children's Friendship Program, 300 Medical Plaza, Los Angeles, CA 90095, USA).

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Gresham, F.M., Elliiot, S.N. (2008). *Social Skills Improvement System (SSiS) Rating Scales Manual*. Minneapolis: Pearson.

Koren, P. E., DeChillo, N., & Friesen, B. J. (1992). Measuring empowerment in families whose children have emotional disabilities: A brief questionnaire. *Rehabilitation Psychology*, 37, 305-321.

La Greca, (1998). *Social Anxiety Scale for Adolescents* (SAS-A). Miami, FL: Author.

Laugeson, E. A., & Frankel, F. (unpublished). *Test of adolescent social skills knowledge—revised*. (Available from UCLAPEERS Clinic, 300 Medical Plaza, Los Angeles, CA 90095, USA).

Spence, S. H. (1995a). Social skills questionnaire. *In Social skills training: Enhancing social competence with children and adolescents*: Photocopiable resource book. Windsor: NFER-Nelson.

Spence, S. H. (1995b). Assessment of perception of emotion from facial expression. *In Social skills training: Enhancing social competence with children and adolescents*: Photocopiable resource book. Windsor: NFER-Nelson.

Additional Resources

Bellini, S. (2006). *Building social relationships: A systematic approach to teaching social interaction skills to children and adolescents with autism spectrum disorders and other social difficulties*. Shawnee Mission, KS: Autism Asperger Publishing. [This book overviews formal and informal assessment of social skills and interventions.]

Texas Statewide Leadership for Autism Training. (2009). *Texas Guide for Effective Teaching Social and Relationship Assessment*. Austin, Texas: Texas Statewide Leadership for Autism Training (This online publication describes many common Social Skills Assessment Tools).

Appendix D

PROVEN TECHNOLOGY FOR PROMOTING GENERALIZATION

What is generalization?
Generalization refers to the transfer of what is learned in one setting or situation to another setting or situation without explicit teaching or programming in the second transfer setting. In Applied Behaviour Analysis, when we talk about generalization, we are often talking about teaching skills in one setting or situation and having the person naturally start using those skills in another setting or situation. For example, if a child learns to tie her shoes with her mother at home, she will naturally be able to tie her shoes when at school in the presence of her teacher or on her own. In typical development, generalization is assumed to be natural and the norm, to be expected.

Another kind of generalization that we often talk about as behaviour analysts is the generalization of treatment effects. If in the home, a parent uses time-out to punish aggression between siblings and rewards the children for using their words to ask for what they want, we would expect to see aggression decrease and verbal requesting increase. When this happens consistently in the home and is maintained over time, we would say the intervention was effective. To say that generalization had occurred, we would have to see the children reduce their aggression and increase their verbal requesting with other children (e.g., peers in daycare) without having to set up the same reward and punishment contingencies in the daycare. From this example, you can see that even in typically developing children, generalization may not happen naturally. We need to program for generalization – that is, we need to arrange the environment so that generalization of skills or treatment effects is more likely to occur.

Programming for Generalization
In the early years of Applied Behaviour Analysis, two prominent behaviour analysts, Dr. Trevor Stokes and Dr. Donald Baer wrote a paper on generalization (Stokes & Baer, 1977) that has guided the thinking and actions of behaviour analysts and behavioural researchers over the past three decades. After reviewing 120 studies on behavioural intervention, they identified eight general techniques that had been found effective in promoting the generalization of treatment effects, including the reduction of behaviour problems and the increase in adaptive behaviours and skills.

1. **Train and Hope:** Training and hoping that we will get generalization of social skills to new settings or situations are our typical 'default technologies'. In many cases, social skills may generalize naturally, especially in typical child development. However, for individuals with autism and those with related intellectual disabilities, we are less likely to see generalization happen as predictably. Therefore other technologies are needed to increase the chances.

2. **Consistency of strategies across settings, people and situations:** It is common that we will first find teaching or behaviour change strategies that are effective in one setting. Then we will observe how these changes generalize to new settings or situations. If generalization does not occur, we will need to add in the effective intervention strategies to see behaviours improve or skills generalize. Although this may be common practice, it may be inefficient to wait and see if generalization will occur, especially in working with people who have demonstrated challenges with generalization. Working form the start to have consistent intervention across different settings, people, and situations is preferred. If the same social challenges or social skill deficits are occurring in the home, school and community, parents, teachers and ASD professionals will want to work together to come up with strategies that can be applied consistently across settings. These strategies include environmental changes, teaching and prompting strategies, and behavioural contingencies. This most basic strategy of consistency will go a long way to promote generalized skills and behaviour change.

3. **Introduce to Natural Maintaining Contingencies:** When we are first teaching social skills to people with ASD, they may have very little motivation to learn as they've never found social interactions very rewarding. In fact, social interactions may be confusing, anxiety provoking and aversive. So in teaching social skills, we are likely to add in some "extrinsic" rewards to establish the social skill, such as giving token rewards for approaching peers or initiating play with peers; these tokens are later traded in for a high preference activity not necessarily related to the social context. Sometimes (not all the time), it is only through the use of extrinsic rewards that we can get past the anxiety and motivate the person with ASD to engage with peers; and it is only after having lots of engagement and positive experiences with peers that the person's anxiety will reduce and he/she can begin to enjoy what most of us love about being social (such as, the pleasure of people smiling at us, including us in play or conversation, sharing high preference toys or interests). If we need to use artificial rewards to get the interactions started, we will want to fade out these rewards as quickly as possible - as soon as we see the person is starting to experience pleasure from just being with peers. Social behaviour that is maintained by these natural

social contingencies of reinforcement (smiles, praise, sharing, being included, etc.) has a much better chance of generalizing to new situations because most people in the other settings will be naturally trained and able to provide social reinforcement.

4. **Train Sufficient Exemplars:** When we teaching any new skill, if we only teach with one example, we cannot expect the person with ASD to generalize the skill to novel situations. So it is important when planning your social intervention (e.g., a social skills group), that you consider how to give the person lots of practice with many different social partners, across many different settings, and in many different social contexts, real or simulated. For example, if we are teaching someone how to ask questions of a peer to show interest in that person's interests, we would want to provide a wide range of general questions and comments that can be applied to conversations with people with diverse interests (e.g., "What do you like to do?", "Do you have a hobby?", "That's interesting! That sounds fun. Tell me more", etc.). With this set of generic questions, you may then train through role play across at 5-10 examples (a.k.a., exemplars) with different kinds of interests before the person with ASD could generalize to conversing with a new person about his or her novel type of interest.

5. **Train Loosely:** We have a tendency in teaching social skills to people with ASD to use scripts to ensure consistency of training and to make it easier for the person to learn the new skill. One of the limitations in using scripts is that the person with ASD may end up sounding stilted or robotic in their responses, or get stuck and not know what to do or say when people in natural settings don't follow the training script. We need to train a wide range of responses that give the person many response options. We also need to ensure that there are lots of opportunities to practice using these options. For example, if we train the person with ASD to use several different ways to initiate an interaction (e.g., sitting beside someone and smiling at them, waving from a distance, saying "Hey do you want to play?" "What are you doing?", "That looks interesting", "Can I join you?"), they will have a better chance of finding something appropriate to say or do in novel situations.

6. **Use Indiscriminable Contingencies:** When we are teaching a new skill or trying to increase a low rate behaviour, we know that it is most effective and efficient to be consistent in reinforcing every attempt to use the new behaviour – learning happens faster! However, the social world doesn't work that way – we don't always get rewarded every time we engage in an appropriate social behaviour. In fact, sometimes we are ignored. So how do we teach so that the person becomes resilient to being ignored or not getting what they want every single time? As teachers, it is our job to quickly move from "continuous reinforcement" to what is called "intermittent reinforcement" where not every response is rewarded. Intermittent reinforcement makes it difficult for the person to know when he or she will get rewarded. Rewarding the person randomly after several appropriate responses would make the learner more attentive and have him/her work harder to get the reward. Typically we start with high rates of reinforcement (that is, reward after every appropriate response or every couple responses) and gradually and systematically "thin" our reinforcement until the person cannot predict when the reward is coming. In social skills training, rewarding the person during natural interactions with peers may be too disruptive to the interaction. So we often use delayed reinforcement. For example, we might video play interactions or conversations with peers in natural settings (with permissions, of course!) and play the video back to the person or group later so they can identify when they were using the specific target social behaviours and get praise or other rewards; also they can see where they were not using the appropriate social behaviours and get feedback and practice on this social skill.

7. **Program Common Stimuli:** When teaching social skills in a formal setting, such as a therapy group or in a special room in a school, we will want to consider how similar or different the setting is to the generalization settings where the social skills will be needed. What are some "common stimuli" that could be included across training and generalization settings to promote generalization? We could include same peers, teachers, toys, activities, equipment, physical space, room set up, or contingencies (e.g, use of token system). The more similar the people, activities and environments, the easier it will be to get generalization in non-training settings. In fact, for people with severe challenges in generalizing, we may want to avoid any type of simulation and only train in the same settings as where the social skills will be needed.

8. **Mediate Generalization:** Any time the person practicing social skills sets a goal for using a newly acquired social behaviour in a natural setting and then goes ahead to actually engage in that social behaviour, we can say that

this was "mediated generalization". The promise or goal setting is the mediating variable that can help to promote generalization. Mediation might involve self-report; for example, where a child states before the play session starts what behaviour she is going to engage in with peers (usually a behaviour that has just been taught) and then, at the end of the generalization session, she reports on and is reinforced if she engaged in the target social behaviour. The correspondence between saying what we will do and doing what we say is a learned behaviour that is not always present in young children; however, it can be taught through explicit reinforcement for correspondence between self-report and report from an adult observer. For example, the child might be taught to share toys and then asked to report on whether she shared her toys; if she says yes, and the teacher observed her sharing as well, she would get reinforced with praise or a tangible reward.

9. **Train "To Generalize":** Most of the time we are teaching and reinforcing very specific target social behaviour. This could put limitations on the range of behaviours the person with ASD might engage in. If we were to explicitly ask the person to generalize (e.g., "I want to see you use what you learned today in social skills group when you are in your classroom or at recess") and then we were to set up contingencies to reinforce trained behaviours when they happen in the non-training settings, then we are likely to see generalization. This is somewhat different than the goal setting described above as, here, we are talking about reinforcing diversity of social responses. Diversity could be related to one specific context, for example, in learning conversational skills, the person would be reinforced for saying new things or asking new questions, while repetition of a question or comment would not be reinforced. Diversity of response could also be reinforced across various social context, for example, within a social skills group where there are many targets taught sequentially, participants can be reinforced for generalizing any of the previous targets to natural interactions. Parents in the home and community and teachers in the school could be trained to watch for and reinforce instances where any of the targeted social skills were observed.

These nine strategies for promoting generalization provide a foundation from which we can increase the chances that the social skills we teach will actually get used in real life situations. We have a long way to go in perfecting social skills interventions. The one thing of which we can be confident is that programming for the generalization and maintenance of social behaviours from training settings to natural environments will greatly increase the opportunity for sustained social growth for our clients, students and loved ones with ASD.

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