# Adapting the Incredible Years child dinosaur social, emotional, and problem-solving intervention to address comorbid diagnoses

**Carolyn Webster-Stratton[1] and M Jamila Reid[2]**

[1] Clinical Child Psychologist, Professor and Director of the Parenting Clinic, University of Washington, US

[2] Clinic Child Psychologist, University of Washington Parenting Clinic, US

## Abstract

Young children who are referred to mental health agencies because of oppositional defiant disorder (ODD) and conduct problems (CP) frequently have comorbid diagnoses or symptoms such as attention deficit disorder (ADD) with or without hyperactivity (ADHD), language/learning and developmental, or autism spectrum disorders. Research has shown that the Incredible Years Child Dinosaur programme offered to children with comorbid issues is successful at reducing behaviour problems and increasing social and emotional competence. This article examines ways in which this small group therapy programme is tailored to address the individual goals of each child so that the intervention is developmentally and therapeutically appropriate. It discusses group composition, as well as the importance of specific content and teaching methods for children with ADHD, academic and language delays and mild autism.

## Key words

Incredible Years; group therapy programme; programme adaptation; ADHD; conduct problems; autism

## Introduction

Young children (ages three to eight years) who are referred to mental health clinics because of oppositional defiant disorder (ODD) and conduct problems (CP) (eg. aggressive, oppositional behaviour, emotional dysregulation) frequently have comorbid diagnoses or symptoms such as attention deficit disorder (ADD) with or without hyperactivity (ADHD) or language/learning and developmental delays or autism spectrum disorders (Campbell *et al*, 2000). In a sample of more than 450 families referred to the Parenting Clinic at the University of Washington for children's ODD or conduct problems, 44% exhibited attention problems in the clinical range and 7% had language delays. In a more recent sample of 98 families referred to the clinic for the primary diagnoses of ADHD, nine children had autism spectrum disorders (pervasive developmental delay or Asperger's syndrome). Although these comorbid diagnoses often are not the presenting problem for a child with ODD, they convey additional risk in short- and long-term treatment outcomes and may be directly or indirectly contributing to the externalising behaviour problems (Webster-Stratton, 1985, 1990).

Thus, treatments that target children's oppositional and aggressive behaviours, such as the Incredible Years (IY) child dinosaur curriculum, must

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be flexible enough to meet the needs of children with complicated profiles. Since young children cannot easily communicate their feelings or worries and the reasons for their misbehaviour, it is important for therapists to look beyond the aggressive symptoms to the underlying reasons for the misbehaviour. The skilled therapist will need to develop a working model and set realistic goals for every child and their parents based on the child's biological make-up, developmental ability, comorbidity and functional analyses of the behaviour problems. This article examines ways in which this small group therapy programme is tailored to address the individual goals of each child so that the intervention is developmentally and therapeutically appropriate. It feeds into the growing practice and research interest in the planned adaptation of proven programmes for different contexts and different populations (Bumbarger & Perkins, 2008).

## Current research

The IY child dinosaur curriculum is an evidence-based programme that has been shown in two randomised control group treatment trials and one prevention trial by the developer (Webster-Stratton & Hammond, 1997; Webster-Stratton *et al*, 2004; Webster-Stratton *et al*, 2008) and in one independent replication (Drugli & Larsson, 2006) to significantly reduce conduct problems, strengthen positive parent-child interactions and increase social problem-solving skills with peers. (For a review of these studies see Webster-Stratton & Reid, 2003, 2005a.) As noted above, although the presenting diagnoses for these treatment studies were ODD or CP, these programme evaluations represent treatment outcomes for children with comorbid diagnoses of ADHD, learning delays and autism spectrum disorders.

One study evaluated the differential treatment effects of the child dinosaur curriculum for children with ODD alone or comorbid ADHD/ODD. The comorbid children made as significant behavioural improvements as children without this comorbidity (Webster-Stratton *et al*, 2001). Currently we are engaged in the fourth year of a randomised trial with children (ages four to six) whose primary diagnoses is ADHD. Adjustments have been made to our delivery of the child programme for these children and are discussed in this article.

We have found that in order to deliver the Incredible Years treatment model successfully, the therapist must understand how to tailor the manualised treatment protocol according to each child's developmental needs and social and emotional goals. Therapists can achieve flexible applications of the manual when there is understanding of the treatment on multiple levels, including the core treatment model, content, and methods, as well as the elements involved in adapting and tailoring the treatment to the individual needs of each child. This article summarises this treatment model with special attention to the way the model is adapted to meet the particular goals of children with ADHD, developmental and language delays and mild autism. The leader's manual (Webster-Stratton, 2007a) provides recommended protocols for offering the child dinosaur social, emotional and problem-solving curriculum (dinosaur school) to groups of six children, aged four to eight, with a primary diagnosis of ODD/CP. The treatment version of the program is offered weekly in a mental health setting for 18–22 weeks in two-hour sessions. The protocols are considered the *minimal* number of core sessions, vignettes and content required to achieve results similar to those in the published literature. However, the length of the programme, number of vignettes shown and the emphases given to certain components of the programme will vary according to the particular needs of the children in each group. There is also a separate classroom curriculum that is designed to be offered two to three times a week to whole classrooms of children as a prevention program for improving children's social, emotional, and academic competencies (Webster-Stratton & Reid, 2004). Recent research shows that this preventive classroom curriculum is effective in reducing classroom aggressive behaviour and promoting social competence, especially for the highest risk students (Webster-Stratton *et al*, 2008).

The IY Training Series also includes a number of parent training options. When working with children with diagnosed conduct problems and ADHD, it is recommended that the parent programme be offered in conjunction with the child dinosaur curriculum, as the strongest long-term follow-up results have been found when parent programmes are offered together with child interventions (Webster-Stratton & Hammond, 1997; Webster-Stratton *et al*, 2004). The parent programmes are described in detail elsewhere (Webster-Stratton, 2006) and have been shown to be as effective for children with comorbid ADHD/ODD as for pure ODD children (Hartman *et al*, 2003). In addition, the parent programmes should be tailored to address the particular goals of parents and developmental abilities of their children. These modifications are outlined elsewhere (Webster-Stratton, 2007b).

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## Overview of the child dinosaur social skills and problem-solving curriculum

As noted above, the dinosaur curriculum targets children with ODD and CP but is also appropriate for addressing comorbid problems such as ADHD, language or developmental delays and mild autism spectrum disorders. The programme can be delivered by counsellors, therapists or early childhood specialists and teachers who have experience treating children with conduct problems.

In order for therapists to begin tailoring the programme for children with comorbid diagnoses, it is extremely important to understand the core content of the program and the teaching methods and therapeutic process of the program delivery. This programme is described in great detail in the programme leader's manual (Webster-Stratton, 2005). Therapists with a thorough understanding of the programme quickly see that it is designed to allow for tailoring the teaching and learning process, as well as the behavioural goals, to the individual children in the group.

### Content

***Table 1*** provides an outline of the core content (presented in the specific order) for all groups of children. Each unit builds on the prior unit and skills, so it is important not to skip units or complete them out of order. However, therapists make developmentally appropriate modifications based on the children's needs in the group. For example, in the 'doing your best in school' unit, groups of very young children (four to five years) would focus on listening, waiting and raising their hand, while older groups (six to seven years) would learn to ignore distractions and to concentrate on work. Similarly, as outlined in the subsequent sections, particular content areas can be emphasised for children who have differing sets of behavioural problems and developmental delays.

### Methods

The methods of teaching are similar regardless of the make-up of the group. All groups use music, video vignettes, role play, child-size puppets, hands-on practice activities, homework assignments, letters and phone calls to parents and teachers. Within these methods, the therapists make adjustments according to the needs of the children in their groups. For example, the puppets frequently bring in problem scenarios and ask the children to help them problem solve. These problems are formulated to directly reflect the reality of children's issues in the group. For example, Wally (one of the puppets) could be constantly scolded for getting out of his seat at school (ADHD), angry because someone took his ball and he got cross and hit them (emotion regulation problems), or embarrassed and frustrated because he is the only child in his class who cannot read (reading and language delays). This article suggests key content areas to focus on and adjustments to be made in the methods and process for children with comorbid ADHD, language, learning and developmental delays. Methods for working with children with depression and internalising problems, attachment disorders and reactions to divorce can be found in a separate document (Webster-Stratton & Reid, 2005b). It is important for the therapists to use the puppets to individualise these suggestions to meet the needs of children in their groups. It is always more engaging to first have the puppet talk to the children about his or her feelings about a problem and then to have the children engage in a discussion of possible solutions or suggest ways to cope with the situation.

### Selecting children for groups

When offering the small group child training programme for diagnosed children, it is ideal to carefully select the type of children who will be in each group. Typically we recommend no more than six children per group. A general guideline for group selection is to include at least one same sex and same age peer for each child (eg. do not place one girl in a group of five boys or one four-year-old in a group of six-year-olds). However, as long as each child has a peer, we often recommend mixing genders, ages and diagnoses to make more heterogeneous groups. It is recommended, for example, to include two typically developing peer models in each group. This will ensure that there will be children who can help to model appropriate social behaviour and self-regulation for other children who have more difficulties with conduct problems, hyperactivity and developmental delays. These peer models will also benefit from the programme because of the leadership skills they practise, as well as the understanding and empathy they learn for children with different developmental abilities. If peer models are not possible, it can also be helpful to have a mixed gender group. Even if the girls are diagnosed with conduct and attention problems, we have found that their behaviours present differently enough that a group of two girls and four boys (all with ODD) runs more smoothly than a group of six diagnosed boys. We recommend mixed-age groups (eg. three four-year-olds and three six-year-olds or two four-year-

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**Table 1 Content and objectives of Dina dinosaur social skills and problem-solving programme**

| Programme component | Objectives |
|---|---|
| Making friends and learning school rules | ■ Understanding the importance of rules<br>■ Participating in the process of rule making<br>■ Understanding consequences if rules are broken<br>■ Learning how to earn rewards for good behaviour<br>■ Learning to build friendships |
| Dina teaches how to do your best in school | ■ Learning to listen, wait, avoid interruptions, and quietly put up a hand to ask questions in class<br>■ Learning to handle other children who tease or interfere with the child's ability to work at school<br>■ Learning to stop, think, and check work<br>■ Learning the importance of co-operation with the teacher and other children<br>■ Practising concentrating and good classroom skills |
| Wally teaches about understanding and expressions | ■ Learning words for different feelings<br>■ Learning how to tell how someone is feeling form verbal detecting feelings and Non-verbal<br>■ Increasing awareness of non-verbal facial communication used to portray feelings<br>■ Learning different ways to relax<br>■ Understanding feelings from different perspectives<br>■ Practising talking about feelings |
| Detective Wally teaches problem-solving steps | ■ Learning to identify a problem<br>■ Thinking of solutions to hypothetical problems<br>■ Learning verbal assertive skills<br>■ Learning to inhibit impulsive reactions<br>■ Understanding what apology means<br>■ Thinking of alternative solutions to problem situations such as being teased and hit<br>■ Learning to understand that solutions have consequences<br>■ Learning to critically evaluate solutions |
| Tiny Turtle teaches anger management | ■ Recognising that anger can interfere with good problem solving<br>■ Using the turtle technique to manage anger<br>■ Understanding when apologies are helpful<br>■ Recognising anger in oneself and others<br>■ Understanding that feeling anger is okay but acting on it by hitting or hurting someone else is not<br>■ Learning to control anger reactions<br>■ Practising alternative responses to being teased, bullied, or yelled at by an angry adult<br>■ Learning skills to cope with another person's anger |
| Molly Manners teaches how to be friendly | ■ Learning what friendship means and how to be friendly<br>■ Understanding ways to help others<br>■ Learning the concepts of sharing and helping<br>■ Learning what teamwork means<br>■ Understanding the benefits of sharing, helping and teamwork<br>■ Practising friendship skills |
| Molly explains how to talk with friends | ■ Learning to ask questions and tell something to a friend<br>■ Learning to listen carefully to what a friend is saying<br>■ Learning to speak up about something that is bothering you<br>■ Understanding how to give an apology or compliment<br>■ Learning to enter into a group of children who are already playing<br>■ Learning to make a suggestions rather than give a command |

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olds, two five-year-olds, and two six-year-olds), so that older peers can serve as models for the younger children. We also recommend that one group is not made up entirely of children with comorbid ODD and ADHD. We have found that these groups have such high levels of distractibility and disruption that they are very difficult to run productively.

One exception to our recommendation of mixed diagnosed groups is for children with Asperger's Syndrome or other mild autism spectrum disorders. For these children, we recommend treatment in a group of other children with similar diagnoses, along with typically developing peer models. It is our experience that children with autism spectrum diagnoses may be dysregulated if placed in a group made up of highly hyperactive and aggressive children because of the high level of noise, activity and physical stimulation. We also believe that the inclusion of typically developing children is crucial for these groups because of the need for prosocial peer modelling.

## Process

Each treatment group is set up with clear and contingent behavioural expectations that are necessary to manage and teach children with oppositional and aggressive conduct problems. During the first group session, rules and expectations are reviewed and role-played. Children participate actively in this process and help to establish the classroom rules. A predictable and routine schedule helps children feel safe in this environment and know what is expected of them. A picture schedule for the group is displayed prominently on the wall, with each segment of the group given its own picture and written heading (eg. homework review, circle time, small group activity, snack time, play choice time). Each week, one child is given responsibility for tracking the schedule by moving an arrow to point to each activity as it happens. Predictability is also established within the routines and rituals of each group. For example, every circle time lesson starts with familiar songs. Puppets enter the group in a similar way each week and greet the children individually. Video vignettes are always introduced with the 'ready, set, action' statement to ensure that children are focused. Children are also assigned jobs each week (schedule change, line leader, snack helper) and these jobs are pictured for them to see easily. Consistency in routines and schedules makes it easier for children to attend to the learning.

A token system is used whereby children earn tokens ('dinosaur chips') for appropriate behaviour. These chips are exchanged for stickers and small prizes at the end of the group. Children receive very high levels of praise with the chip reinforcement. As little attention as possible is given to negative behaviours. Much off-task behaviour is ignored, and children are redirected or prompted with non-verbal cues. When necessary, children are given warnings of a consequence (loss of privilege or brief time out) for disruptive or non-compliant behaviour, and leaders follow through with the consequence if the misbehaviour continues. Aggressive behaviour receives an automatic brief time out away from therapist and peer attention in order to provide children a time and place to calm down.

This behaviour management process is also manipulated to meet the individual needs of the children in the group. For instance, not all children earn chips for the same behaviours. For a very young child who has ADHD, chips and praise may be given every 30 seconds if she is sitting with her bottom on the chair, or every time she remembers to quietly raise their hand. For an older child who has difficulties with peer relationships, leaders will focus on giving praise and tokens for prosocial interactions (helping, sharing, giving a suggestion, listening, problem- solving with a friend). Leaders look for ways to make sure that children who are working hard at their individual goals are earning chips at relatively equal rates. Some very young and impulsive children with ADHD will not be able to wait until the end of a group to trade in tokens for prizes. In this case, it is appropriate to offer multiple, more frequent opportunities to trade in chips. Other children may not be able to understand a token economy at all, either because they cannot count or cannot anticipate consequences or understand the connection between waiting for a certain number of chips and obtaining a prize. For these children, other more concrete and immediate reward systems will be used. For example, the children could earn marbles in a jar for targeted social behaviours, and when the jar reaches a certain level (marked clearly) the group earns a special snack or activity. These children may also benefit from earning stickers or hand stamps given immediately after the positive behaviours occur. In this way, each child in the group is working on target goals within a system that is clear, developmentally appropriate, has been negotiated ahead of time and feels fair to all children.

Therapists may have somewhat different behavioural expectations for each child in the group and, therefore, will set different limits accordingly. For example, a very impulsive and fidgety child may be given some latitude to move around in space marked off around his chair, or to take a break in

a specially designed ‘wiggle space’, while other children will be expected to attend and stay seated on their chairs.

## Children with ADHD

Over 40% of children in our studies for ODD and CP also had ADHD (Beauchaine *et al*, 2005). These children have difficulty attending to, hearing or remembering adult requests, and, therefore, do not seem to be co-operative. They often have difficulty completing tasks such as schoolwork, homework, chores or other activities that require sustained concentration or longer term memory. Many children with ADHD have trouble making friends (Coie *et al*, 1990). Their impulsivity and distractability makes it hard for them to wait for a turn when playing or to concentrate long enough to complete a puzzle or game. They are more likely to grab things away from other children, or disrupt a carefully built tower or puzzle because of their activity level and lack of patience. In fact, research has shown that these children are significantly delayed in their play and social skills (Barkley, 1996; Webster-Stratton & Lindsay, 1999). For example, a six-year-old with ADHD plays more like a four-year-old and will have difficulty with sharing, waiting, taking turns and focusing on or persisting with a play activity for more than a few minutes. Such children are more likely to be engaged in either solitary or parallel play. If they are in the parallel play stage of play development, they will be fairly uninterested in other children and rarely initiate interactions. If they are interested in interacting with other children, these interactions are likely to be unsuccessful because they don’t have the behavioural control to wait for a turn, ask for something or listen to an answer. They also are likely to quickly become dysregulated when things do not go their way. These behaviours make them unpopular playmates and they are often very isolated, with few friends.

### Content focus for children with ADHD

For children with ADHD, there is a special focus on the content topics of: doing your best in school, emotion regulation and friendship skills. These three areas address the key skills deficits experienced by most children with ADHD. In the school unit, for the younger children there is a focus on listening, following directions and persisting with a difficult play activity. Therapists use ‘persistence coaching’ to coach them to stay focused and to keep trying when something is difficult. For older children, there is a focus on concentration, stopping to understand assignments before doing schoolwork and stopping to check and re-check work. All children are taught how to ignore in order to block out distractions. One of the puppets models the concept of ignoring by showing the children that when you ignore, you don’t look at or listen to something or someone that is bothering you. Children then practise ignoring a distraction that is made by the puppet, such as whispering into their ears or tapping them on the shoulder. They are praised for using strong ‘ignoring muscles’. When real-life distractions occur in the group, children are then prompted to use their ‘ignoring muscles’ and are praised for doing so.

In the feelings and anger management units, the focus for these children is on emotion regulation. They learn to relax and recognise signs of dysregulation, and to calm down by taking deep breaths, thinking of their happy place and using positive self-talk. In the friendship units, these children are taught specific social sequences for situations such as entering a group of children who are already playing, waiting for a turn, playing co-operatively with a peer, negotiating the decision-making process with other children and using friendly communication skills.

### Methods and process for working with children with ADHD

The structure of the group is modified for children with ADHD because of their more limited capacity for sustained attention during circle time and their need for more movement than other children. Therapists introduce more songs, more role-plays and physical activities and more hands-on group activities to keep the attention of the children. If the entire group comprises children diagnosed with ADHD, the two-hour format is revised to include three shorter circle time lessons lasting 10–15 minutes instead of one 20–30 minute circle time lesson. In addition, extra small group activities may be planned. At the end of the session children have 15–20 minutes of coached play time. Toys such as Lego, blocks, play dough and board games are provided, and therapists coach children intensively in their play interactions with each other. If the group consists of children with and without ADHD, the structure is modified to allow those more focused children who want the extra time to continue to work on their small group activity, while permitting the inattentive children to work on a different activity. Nonetheless, special opportunities to move and be engaged – beyond those provided for the entire group – are set up for children with ADHD. For instance, the child with ADHD may be asked to come to the front of the group to hold a cue card, or

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be asked to retrieve something for the therapist from the back of the room. The therapist may have the child come and sit on his/her lap for a few minutes (this should be contingent on appropriate behaviour, rather than as a response to off-task behaviour). The child may also be placed in a seat next to the therapist and physical touch (therapist hand on shoulder or arm) may help sustain the child's ability to stay focused.

The child with ADHD may be given slightly more physical space than other children, with visual boundaries used to delineate the space. For example, a masking tape box might be placed around the child's chair and as long as the child is within the tape boundaries he or she would not be required to be seated with both feet on the floor at all times. It may also be helpful to give the child a sanctioned 'wiggle space' to use if it becomes too difficult to stay in the group. This is not a punishment, rather it is a self-regulation space so that the child has an option of a place to go to re-regulate and then come back to the group. This space should also be marked out with a physical boundary and might have nearby a picture of the puppet Wally relaxing, or taking deep breaths, as a signal to remind children of the calm down steps. Another approach is to ask the child with ADHD who is becoming very distracted to go over to an area of the room where there is a 'show me five' hand posted on the wall and to put their hand on the poster to help them regain focus. This 'show me five' hand cue is a signal with a picture for each finger that indicates the following – eyes on the teacher, ears open, mouth closed, hands to self and body quiet.

Therapists are coaching, praising, labelling and reinforcing (with tokens) targeted child behaviours such as waiting, managing impulsivity (eg. remembering to quietly raise a hand rather than blurting out), staying calm, sitting in their seat, concentrating, following directions, appropriately using wiggle space and respecting physical boundaries. At first, therapists notice even very short periods of attention, waiting and calm behaviour, and a child might receive a tangible reward such as a token along with praise for sitting in his or her chair for as short a period of time as 30 seconds. One goal for these children, however, is to help them learn to sustain this kind of attention for longer and longer periods of time. Gradually over the course of treatment, therapists will tailor their rewards, rate of praise and their expectations to extend the children's ability to focus, wait, concentrate and attend. Very young or extremely impulsive children may have difficulty connecting the tokens with a reward given at the end of the two-hour session. For these children there may need to be even more frequent opportunities to earn more immediate rewards such as stickers or hand stamps, which are then traded in for tokens that lead to prizes.

It is important to begin to teach children with ADHD to self-regulate and to use cognitive strategies and positive self-talk. Initially, adult prompting and visual cues are used to achieve this. For example, children are shown a picture of Dina dinosaur concentrating. Under her picture are the words 'stop, look, think, check'. These words are rehearsed out loud with hand motions to accompany each word. Picture cue cards also accompany each word (eg. stop sign, looking eyes, light bulb symbol, and check mark). Children practise an activity requiring concentration, while the teacher, puppets or other children help to remember each of the steps, and the steps are repeated out loud with the picture cues. The child can be provided with a picture cue card of Dina concentrating and this card might be placed on his or her desk at school to remind him or her of the skill she is practising. The classroom teacher is asked to walk by periodically and prompt the child to use the concentration steps by tapping the picture. At the end of a period, the child can be asked to reflect on whether they concentrated and followed Dina's steps. They can be provided with self-praise or coping statements (eg. 'I did it! I'm good at concentrating' or 'I forgot to concentrate this time, but I bet I can concentrate on my next work').

Part of teaching children self-regulation is also about teaching them how to manage their anger when conflict occurs. In the problem solving and anger unit, the precise steps for how to identify a problem and generate possible solutions are taught, modelled and rehearsed. Depending on the age of the child, these strategies will be a combination of behavioural and cognitive techniques. For example, specific behaviours that children learn to manage anger are taking three deep breaths, counting to 10 and practising making their bodies tense and relaxed. Cognitive strategies they learn range from simple statements such as 'I can do it, I can calm down' to more complex cognitions such as 'I'm feeling angry because my sister took my truck, but I'm going to be strong and ignore her. Then I won't get in trouble and I'll prove I can control my anger'. Cognitive strategies involve thinking of happy thoughts or places, giving a compliment to yourself or telling yourself that feelings can change and even though you are angry now you will feel better later.

In the friendship unit, the precise steps for learning how to play with another child are taught,

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modelled, prompted and practised extensively. First, children watch videotapes of children playing with a variety of toys (blocks, make believe, puzzles, art projects, etc) and in a variety of settings (playground, classroom), and they are prompted by the therapists to notice how the children on the videotapes wait, take turns, and share. One or two of these friendship skills are modelled by the puppet in interaction with the therapist or children. Then, each child practises one or two play skills with one of the puppets and is reinforced for using these behaviours. Next, they are paired up to play with another child (their buddy) and the therapist prompts, coaches and reinforces them for using these friendly play behaviours. Sometimes it is helpful to break up the group by taking pairs of children out of the large group to practise their play skills without the distractions of other children in their peer group. After these dyadic practice sessions, the children return to the group for a circle time lesson focused on learning and practising a particular social skill. Children with significant play delays may need to practise the social skills one-on-one with the puppet before doing this with a peer.

## Children with academic problems: language or reading delays

Approximately 30% of children with conduct problems and/or ADHD also have academic problems such as language or reading delays or learning disabilities (Hinshaw, 1992).

### Content focus for children with reading or language delays

For children with reading or language delays, all of the tailoring recommendations suggested for improving the concentration skills of children with ADHD will also be helpful. Additional methods and processes for children with reading and language delays are suggested in what follows.

Therapists working with children with language and reading problems will also want to engage frequently in interactive or dialogic reading. This reading style encourages exploration of a book without the sole focus on reading the words accurately. Therapists discuss the pictures with the child by taking turns to label objects, feelings or other aspects of the picture, following the child's lead and interest in the story, and helping the child make up alternative endings to the stories or even act out parts of the story with hand puppets. As children become familiar with particular stories, they may become the storyteller and will read or recite the story back to the therapist. Research has shown that when preschool teachers and parents read dialogically with their children, the children's vocabulary increases significantly (Whitehurst *et al*, 1999), as well as their word recognition and motivation to read.

### Methods and process for children with academic difficulties

For these children, the link between written and oral language should be emphasised throughout the curriculum. Each visual cue card that presents a new social, emotional or problem-solving concept has both a picture and a word that describes the concept. Strategies such as asking the children to practise 'reading' the word on the picture by repeating it aloud, pointing to the word as it is said and acting out the word at the same time that it is spoken, all help children with language delays to associate printed words with spoken words. Small group activities can also be chosen that will reinforce particular academic goals. There are many activities involving reading and writing that can be adjusted for children with different developmental levels. Using small group activities that target a particular skill area for a child provides a low-pressure time for children to experience success with academic activities that may be difficult for them at school because therapists can provide extra scaffolding to make this learning successful.

Therapists focus special effort on labelling, praising and encouraging academic behaviours and processes for children with learning problems. Raising a hand quietly, concentrating on work, checking something again, correcting a mistake, trying again and persisting with a hard task are all examples of behaviours to reinforce. Cognitive processes are also recognised by therapists. Examples of this are: '*I can see you are really thinking hard about your answer*'; '*When it's hard to read, you tell yourself, I can do it if I just look at one letter at a time*'; and '*It's great that you stayed calm and asked for help on that work. Did you tell yourself, I can stay calm even though I don't know this word?*'. Child-directed descriptive commenting can also support children's language development. In the role of 'academic coach', therapists will describe what the children are doing during their playing interactions. For example, they will describe or label the colours, shapes, sizes and positions (on, under, beside, inside, next to, etc) of the toys they are playing with, as well as name of the pictures, objects and events as they are occurring. This will increase the children's vocabulary as well as their academic concepts.

### Collaborating with teachers

It is particularly important for children with ADHD and ODD, whose attention and behavioural

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problems interfere with their academic learning, that therapists communicate with the child's classroom teacher. Therapists begin developing their relationships with teachers by asking them during the initial assessment phase to complete standard behaviour inventories regarding the children. They also ask teachers to share their concerns regarding the children in the classroom and obtain their input regarding the specific behaviours they think that the children need help with. Once dinosaur group therapy sessions begin, therapists provide teachers with summaries regarding the goals for each topic being covered in the programme. About half way through the programme, therapists develop behaviour plans for children and outline the strategies they believe are helpful to them. These individual behaviour plans are shared with the teachers who are asked to review them and to contribute their ideas to the goals or strategies proposed for the children. ***Table 2*** provides a sample behaviour plan for a child who has ODD and ADHD and language delays. ***Table 3*** provides a sample session outline for a group with children with ADHD.

## Children with autism spectrum disorders

Over the years, we have had experience working with children with Asperger's syndrome and other autism spectrum disorders, who were integrated in both our treatment and classroom Dinosaur School child training groups. However, we have not had sufficient numbers to be able to report specific outcome data on these sub-groups. Anecdotally, we have heard from a number of teachers and therapists who have also adapted the curriculum for these populations that they have experienced success. This section of the article offers some guidelines for adaptations that have been made. However, controlled experimental trials of these IY curricula are needed with these populations to determine their effectiveness.

### Content focus for children with autism

Children with autism or Asperger's syndrome have particular difficulty with affective and reciprocal social interactions, such as difficulties reading social cues as well as verbal and non-verbal communication impairments. They may be non-verbal, or simply repeat what others say to them, or have extensive language skills. They may refuse physical affection and make little effort to share enjoyment. They may actively distance themselves from peers and engage in repetitive, stereotypical and isolated play. Since there are large individual differences among children with autism or Asperger's syndrome, individual behaviour plans based on the children's goals will be important guides for implementing the dinosaur curriculum. In general, efforts will be made to reduce some of their excesses of behaviours (repetitive and ritualistic behaviour and aggression) and to increase their social interactions. The emphasis for these children is on the feelings, friendship and communication units of the programme.

In the feelings unit, children first practise noticing feelings by looking for visual cues (eg. 'What does someone's face look like when he is happy? How do his eyes look? How about his mouth?'). Children look at pictures and videos with no sound to try to name the feelings. They also look at the puppets, the therapists and their peers to try to name and observe what feelings they are having. Mirrors are used so that they can practise showing their own feeling faces. Next, the children learn to identify feelings by listening to sounds and voices. This time, children practise closing their eyes, listening to people talking and trying to identify the feeling just based on the auditory cues. Once children have learned to identify feelings from voices, they practise using their own voices to let someone else know how they are feeling. In particular, we focus on modelling and practising expression of positive feelings and affect to others because of their importance in promoting relationships.

Children with autism have difficulty making friends because of their impairment in expressing positive affect (they do not show smiles or positive expressions), their inability to take the point of view of another child's feelings, and their impaired or delayed language and play skills. Studies have indicated that they have impaired symbolic play (eg. doll-related and pretend play), engage in less diverse play and do not initiate social interactions at the same frequency as children with typical development. For this reason, therapists engage in child-directed play interactions during small group activities using 'emotion coaching' and a high level of affectively rich content (smiles, eye contact, laughter). In addition, therapists set up small group activities that involve socio-dramatic or symbolic play, puppets and role plays as a way to practise events in one's life, social roles and rituals (eg. using a doll house and dolls to act out telephone calls, making dinner, getting ready for school, getting dressed in the morning, going to the dentist or using puppets to practise asking a friend to play).

In the friendship unit, the precise steps for learning how to play with another child are taught, modelled and practised extensively (as described above in the section for children with ADHD). For

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**Table 2 Sample behaviour plan for Frank**

| Targeted behaviour | Occasion | Desired behaviour | Proactive strategies and reinforcers to use | Consequences of misbehaviour |
|---|---|---|---|---|
| 1. Fidgety or impulsive at circle time. Is often distracted or off-task (distracting others in the circle, standing up at inappropriate times, leaving the circle). | Circle time | To stay seated, engaged and regulated during the entire circle time. | Seat him near a teacher and, if necessary, in his/her lap. Use touch and backrubs to keep him engaged. Praise a calm body, staying in seat, paying attention and listening. Use small incentives frequently when Frank is sitting quietly (sticker, hand stamp, biscuit). Eg. '*Frank you are sitting and listening, you get a hand stamp.*' Keep the content as varied and engaging as possible. Frank has most difficulty with verbal content. He really enjoys puppets, music and other visual learning. Offer him chances to participate and help. Delineate an alternative area (eg. tape out a box at the back of the room with a book in it) that Frank can choose to go to if he does not want to stay in the circle. '*Frank, you have two choices: you can sit with us in circle, or you can sit quietly in your box.*' | If Frank gets up and leaves the circle, briefly ignore him while trying to make the circle more interesting and see if he comes back on his own. If not, give him the two options. If he does make an appropriate choice (either circle or box), use a warning for a time out. Frank can be very disruptive during time out, so a plan should be in place ahead of time for monitoring and managing his time outs. |
| 2. Frank is usually engaged in parallel play. He has difficulty sharing toys with other children on his own. | Play time | To be able to play | Most of Frank's interactions are likely to be parallel play. Encourage prosocial behaviours (asking, sharing, turn taking). Praise Frank for sharing if he is playing next to another child with similar toys. If Frank wants something that another child has, provide him with the words to ask and then praise him for using words. Model sharing: '*Frank, I'd like to share this car with you. Can you say, please can I have it.*' Model asking: '*Frank, could I use your train for a minute. I will give it right back*.' Currently all Frank's play interactions will need to be coached by an adult. | N/A |
| 3. Frank often gets frustrated when he doesn't get his way in play situations. This may happen partly because it is difficult for him to express himself in words. | Play time | To stay calm when frustrated. To be able to use words to let others know what he wants. To get help from a teacher if he can't resolve a problem with a peer. | Coach Frank to use his words and stay calm. Remind him of calm down strategies (take three deep breaths, pretend to blow out a candle). Try to catch him right when you see he is beginning to be frustrated. At that point, provide him with words to express his frustration. For example, '*Frank, tell him that you are playing with that right now*' or '*Frank, say please can I have that truck*'. Praise him for using his words and for staying calm. If his request resulted in the outcome he wanted, praise how well he solved his problem by using his words. If his request was denied, praise him for staying calm and try to redirect him to another activity or coach him to wait until it is his turn. | If Frank is too dysregulated to be able to listen and respond to coaching, he (or the other child) may need to be moved to another area until he has had time to calm down. |
| 4. Frank is often non-compliant to commands or following established routines. | Any time | To follow directions the first time that he is asked to do something. To ask for help if he doesn't know how to do what is being asked. | Get Frank's attention before giving a command –go near to him, look him in the eye. Give simple, one-step commands and praise ANY compliance. Limit commands to those that are necessary. Give Frank two positive choices, eg '*Frank, you can play with the blocks or with the trains*'. If Frank is non-compliant, evaluate what you've asked him to do and make sure that it is broken down in a way that he can easily follow the directions | Let Frank know what will happen when he complies, and when he doesn't comply. Eg. '*If you clean up now, then you will be able to have your snack.*' '*If you do not clean up, you will need to take a time out.*' If necessary, follow through with a brief time out. |

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**Table 2 (continued) Sample behaviour plan for Frank**

| Targeted behaviour | Occasion | Desired behaviour | Proactive strategies and reinforcers to use | Consequences of misbehaviour |
|---|---|---|---|---|
| | | | without getting overwhelmed. Give warnings well before transitions so that Frank is prepared. Give him a little more time during a transition and have an adult walk him through the transition. Make sure that Frank is aware of what activity is coming after the transition so that he knows what to look forward to. | |
| 5. When Frank is frustrated or dysregulated, he may become aggressive and hit other children or adults | Anytime that he is upset | To express his frustration with words. | Use all the above strategies for helping Frank through play interactions with other children and for coaching him through times when he needs to comply. At a time when Frank is calm, let him know that if he hits or hurts another person he will need to take a time out to calm down. | Give Frank an automatic time out if he hurts another person. Ideally, this time out should only last 2–3 minutes, but Frank should be calm at the end of the time out. If he is upset or dysregulated, wait for him to be calm, then end the time out. |

**Table 3 Sample group session for children with ADHD**

| Activity | Time in minutes |
|---|---|
| Coached play time as group gathers | 10 |
| First circle time | 20 |
| Small group activity | 10 |
| Snack | 15 |
| Second circle time | 20 |
| Small group activity | 10 |
| Coached play time | 15 |
| Counting chips | 10 |
| Closing compliment circle | 10 |

children with autism, these sessions are expanded – according to children's play goals based on their developmental abilities – with additional vignettes and activities so that over time, their repertoire of play skills becomes more complex to include other behaviours such as giving compliments, making a suggestion or agreeing with a suggestion. Eventually the children's play moves from repetitive parallel play to dyadic play with one child, and eventually to play with several children, as well as learning the skills needed to join in or initiate play with others.

In addition to teaching children how to respond to other children in play interactions, these children need help with self-initiating social interactions with adults or children. Examples of self-initiated interactions include asking a question, inviting someone to play, showing someone a toy or pointing to an object. Children will be prompted to initiate an interaction and reinforced when they do this. For example, children may be prompted to ask '*What' s that*?' or '*Where is it?*' and then reinforced for asking a friendly question. In the friendship unit, children are taught five specific social skills steps needed to initiate an interaction, since studies suggest that children with autism initiate infrequently. For instance, if a child wants a turn on the swing (or to play with a group who are already playing), he or she would be coached to (a) stop and watch, (b) give a compliment, (c) ask for a turn, (d) listen to the answer and then (e) either wait for a turn or accept the refusal and use another solution (perhaps get an adult). These steps are practised repeatedly in role plays using visual cue cards to prompt each of the steps. If children are not spontaneously using the new initiation behaviours, then the therapist or puppets can prompt a rehearsal of the behaviours.

Undoubtedly these children's play deficits are also related to their language and communication difficulties. In the communication unit of the programme, the children learn – again through the same process of modelling, guided practice and coached practice with another child – how to ask questions to get to know a friend, how to give a compliment, how to accept a friend's overture and how to be persistent in asking to play with another. Children are paired up with a buddy to practise communication skills. Preferably these pairings include a buddy with normal language development so that the buddy can model developmentally appropriate communication. Children are reinforced for imitating their buddy, and buddies are reinforced for modelling appropriate communication skills. A growing body of research suggests that teaching communication behaviours can also result in dramatic

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improvements in the behaviour of preschool children with autism (Koegel *et al*, 1992; Wacker *et al*, 1998).

### Methods and process for working with children with autism

Motivating these children to respond is an essential prerequisite to teaching them new skills. In order to enhance motivation of these children, intensive use of reinforcement and rewards is employed for their attempts to respond or initiate an interaction, even if the response is not exactly correct. By reinforcing trying it is hoped that these children will sustain their efforts at interacting or learning something new. Frequently, these children do not spontaneously initiate interaction, and when this is the case they will be prompted by the therapist modelling the precise words to use and then reinforced for their efforts. Moreover, previously mastered tasks are interspersed with new learning of more difficult tasks to ensure that the children stay engaged. In addition, to maximise interest, a variety of choice is provided to allow some selectivity of the particular small group activity. Since children with autism often have very focused interests, these interest areas may be incorporated into the small group activities. For example, a child who is fascinated with trains maybe be encouraged to make a train poster with another child. Preferred activities or topics may also be used as rewards for engaging in the group. A child who is interested in a particular toy may earn chances to play with this toy between other group activities. In order to promote generalisation of the skills being learned, children are given opportunities to try to self-manage in a variety of settings (eg. playground, lunch room, bus). For example, in the playground they can use the problem-solving solution cards to decide on a solution to a conflict situation. Playground teachers and monitors are trained to prompt and reinforce the use of these skills in these less structured settings. Eventually, these prompts will be faded out to see if they are produced more spontaneously.

As with the other populations, the child training curriculum is only one part of an intervention approach. A comprehensive intervention will always involve parent training to help parents understand how to coach and reinforce the child's learning at home. This will be crucial to help children generalise their skills to other settings and relationships. It is ideal to offer the child programme at the same time as the parent intervention so that parents learn how to support their child's newly acquired skills. In addition, this provides parents and child therapists a chance to co-ordinate treatment plans. However, services that set up combined interventions will need adequate staff to deliver both of these interventions at the same time.

## Summary

It is increasingly recognised that evidence-based interventions need to clearly identify what aspects of the evidence-based therapy are core for all populations and how programmes can be adapted or tailored according to individual needs and goals without affecting programme fidelity. In particular, there is a need for more research evaluating the effectiveness of evidence-based interventions for use with young children with a variety of mental health problems. In this article, we have shown how the Incredible Years child dinosaur emotion, social and problem-solving programme can be adapted to treat multiple presenting problems. Children who present for treatment with conduct problems are likely to be experiencing a number of other developmental problems that contribute to their behavioural difficulties. In order to provide comprehensive and effective treatment for these children, it is important that these comorbid issues are addressed.

Therapists delivering the programme must be very familiar with the basic content, methods and process before making adaptations. They should understand the rationale for presenting each content unit, as well the behavioural principles that are important for working therapeutically with children (eg. frequent positive attention for behaviours that they would like to see increase and minimal attention for behaviours that they would like to see decrease). With this in mind, the therapist, in conjunction with the parents and classroom teachers, can set individual behavioural goals and develop a behaviour plan for each child in the group. Central to this treatment model is the idea that while a specific set of skills is taught in a specific order, the way in which the skills are taught, the level of sophistication with which they are presented, and the amount of time spent on each content area must depend on each child's behavioural and emotional needs, as well as on his or her developmental level. In this way, the programme can be used as a comprehensive treatment to provide children with the skills to cope with many different situations and circumstances.

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## Summary of policy and practice implications

- There is a need for more research evaluating the effectiveness of evidence-based interventions for use with young children with a variety of mental health problems.
- Evidence-based interventions need to identify clearly what aspects of the evidence-based therapy are core for all populations and how programmes can be adapted or tailored according to individual needs and goals without affecting program fidelity.
- Young children with ODD diagnoses frequently have many comorbid problems and interventions must address these needs as well as the primary diagnoses.
- Research suggests that combining child intervention with parenting interventions results in higher effect sizes for treatment outcomes for diagnosed children.
- Combining typically developing children with diagnosed children in treatment may be useful for providing appropriate peer models for diagnosed children. Typical children may benefit from increased understanding and empathy towards children with developmental difficulties.

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## Address for correspondence
Carolyn Webster-Stratton
University of Washington
School of Nursing
Parenting Clinic
1107 NE 45th Street, Suite #305
Seattle, WA 98105
USA

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## About the authors

Carolyn Webster-Stratton is a Clinical Child Psychologist, Professor and Director of the Parenting Clinic at the University of Washington. She is the developer of the Incredible Years treatment and prevention programmes for parents, teachers and children, and has been involved in evaluating these programmes in randomised controlled trials for over 30 years, as well as training others to use them.

Jamila Reid is a Clinic Child Psychologist who works at the University of Washington Parenting Clinic. Her primary research and intervention interests involve the prevention and treatment of conduct problems in young children. She is also a certified trainer for the Incredible Years interventions.

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