

Crib sheet: strengthening and supporting the development of executive function and cognitive skills

Introduction

Executive function difficulties are more common in children who have experienced relational and developmental trauma. These pockets of difficulties can have multi-layered implications for children's learning and life skills (Loman *et al.*, 2013; Spann *et al.*, 2012). Executive function difficulties can include struggling with: planning, organising, completing tasks, goal-setting, anticipating consequences, orientation, spatial awareness, initiating, attending, memorising, processing information, concentrating, exerting self-control, switching focus, managing impulse-control, utilising cognitive flexibility, problem-solving, abstract thinking, reasoning, making inferences, and understanding object permanency (Pollak *et al.*, 2010; Samuelson *et al.*, 2010).

This worksheet will offer some activities and strategies to support the development and strengthening of these skills. This list is not exhaustive or prescriptive, needs to be informed by a thorough assessment and formulation, and needs to be tailored to the specific individual/situation. Keep in mind that every child is unique and is living within a unique context.

These activities may give some ideas that can be helpful for caregivers, teachers, etc. in supporting children to optimise their learning. They could be tailored and adapted to be interwoven with recommendations on neuropsychological assessments. These strategies are just one piece of the overall puzzle of supporting children with executive function difficulties. They need to be complemented by other pieces of the puzzle, such as strategies around sensory processing and sensory integration, regulating emotions, and increasing feelings of safety.

Practical and creative strategies for strengthening and supporting the development of executive function skills

- » Information should be communicated in the most accessible way possible. This includes using short and concise sentences that use child-friendly and "age"-appropriate language and where necessary are broken up into smaller, more manageable parts (think about SMART goals; see Worksheet 5.6). For the majority of children, starting small and having fewer choices to begin with supports their ability to grasp new concepts.
- » Children will generally benefit from having more time than required to absorb and process information. Children are likely to need key information shared and repeated several times in different ways and using different communication styles.
- » Where possible, children should understand the rationale, expectations, and steps of a task/instruction. These should be as sequenced and as coherent as possible. It is important that children's understanding of the information is checked. Space should



be made, and children should feel safe and able, to ask questions and for clarity and for repetition.

- » Key information should be shared when the child is in a learning and thinking mode, rather than when dysregulated, distracted, and/or full up. This includes finding ways to increase their feelings of safety and decrease their feelings of danger/threat. See Chapter 3 for different ways of supporting multi-levelled safety and of identifying multi-sensory triggers.
- » Poignant information should be shared with a child when they have had sufficient sleep, have eaten, have been to the toilet, and have limited external distractions.
- » Children will often benefit from having brain breaks in between information and buffered around transition points, as well as having regulating items to hand. This might also include integrating physical activities, art activities, relaxation-based activities, or sensory-based activities into these brain breaks. See Chapter 3 for a range of ideas on supporting this, as well as Worksheet 3.9, which provides a range of regulating activities on a set of cards.
- » Information should be communicated and contextualised using multi-modal and multi-approach tools. For example, in addition to explaining a concept, it is helpful to employ other modes such as using visual aids, props, diagrams, flow charts, pie graphs, video recordings, photos, etc. For example, if someone is explaining the brain, the information is likely to be embedded further and engaged more if using brain models, brain puzzles, brain drawings, metaphors about the brain, podcasts about the brain, etc. Similarly, if someone is discussing and describing a tree, it is likely to be more interactive and absorbed if a child is shown a tree, encouraged to touch a tree, looks at pictures of a tree, makes art out of the bark and the leaves of the tree, etc. This style incorporates the left and the right brain, as well as utilising and activating multiple senses.
- » Role-playing and practising particular skills when the child is in their thinking and learning brain can be very helpful. One can use dolls, teddies, masks, or puppets to enhance these discussions and to make them feel less exposing and more playful.
- » Making real-world associations with concepts and items can enhance some children's memory and engagement with them. This includes bringing concepts alive through strategies such as using rhymes, acronyms, poems, catchy sayings, metaphors, etc.
- » Children can also be supported to think about the links and connections between different concepts and actions. This can be enhanced through things like making paper chains, links on a chain, or paper dolls, using string on a path, or games like dominoes. Breaking down situations or concepts into smaller steps and looking at them as, for example, pieces of a puzzle, bricks in a house, or parts of a cog can also be useful. Worksheets exploring SMART goals can also be useful in supporting these skills (see Worksheets 4.20, 4.21, and 5.6).
- » Problem-solving skills should be modelled by surrounding adults and actively encouraged. This might include things such as writing an advantages and disadvantages list, drawing or sculpting the different potential paths/outcomes/decisions, making a paper chain of events, drawing a spidergram, or making a visual



representation of possible options (e.g. an octopus of options, the treasure box of tools, the protective palm, and so forth; see Chapters 3 and 8).

- » Some children find focusing and filtering information trickier than others. Finding ways to highlight and prioritise information can be helpful for these children. This might include things like underlining or highlighting important information, circling information, using reminder post-it notes, writing lists/checklists, and/or using sorting systems such as colour coding.
- » Children may also benefit from having reminder, crib, flash, or cue cards of key information. I often talk with children about the skill of focusing in by likening it to putting a camera on zoom or using a magic magnifying glass. I then support children to practise using their zoom lens or their magic magnifying glass.
- » Some children might benefit from having prompts, anchors, or scaffolding techniques. For example, a child writing a story may be supported by having some story starter ideas, looking at a picture book, reading and seeing some actual examples, looking at a physical item for inspiration, or being given a heading/cue word.
- » It can also be helpful to support children to have a visual record of the steps that are involved in a particular task, for example through using pictorial/visual checklists, visual diaries, visual calendars, or visual timetables. These can be enhanced by making the steps into comic strips, mental/actual movies, plays, or social stories. These can also be brought to life by supporting the child to draw the pictures of the different steps or taking actual photographs. These can be made more interactive by using Velcro, buttons, plastic sleeves, etc.
- » Labelling and sorting items can also be useful, for example having labelled notepads, pencil cases, cupboards, folders, etc. This might be enhanced by having sorting systems such as colour coding or putting things in alphabetical order.
- » Children can be supported to have more of a sense of time and movement through using visual timers, alarms, stopwatches, and child-friendly clocks, and through words like “before”, “after”, and “next”. See Chapter 10 for more specific strategies around supporting transitions.
- » Games can be great ways of strengthening children’s executive function skills whilst also having fun. Games include: Grandmother’s footsteps; freeze; musical statues; follow the leader; Simon says; Twister; snap; cards; Connect 4; Jenga; using labyrinths, mazes, or Rubik’s cubes; head, shoulders, knees, and toes; Pictionary or charades; and copying games, for example making a Play-Doh sculpture or drawing a picture and asking the child to copy it and vice versa.
- » Cognitive games can also be very helpful in practising these skills. These include: crosswords; quizzes; games like I spy, “I went shopping and bought”, and “Can you tell me all the countries beginning with the letter A?”; brain gym activities (e.g. cross crawl, number 8, and brain buttons); games such as “How many different ways can you use a hat, table, stick, and so forth?”; giving a child a magazine, piece of paper, or book and asking them to, for example, circle all the words beginning with “F” or look out for all of the animals; finding Wally in Where’s Wally picture books; looking at multiple perspectives or finding “hidden” images in optical illusion images or



items in find-it games; playing spot the difference and similarities-themed games; playing sorting games like sorting all the red shapes into one basket or all the green buttons into a jar; and asking children to think about what they would need or what they would pack for when it is, for example, snowing or when they are baking a cake.

- » The games described above can also be enhanced by daily activities that can help to integrate and practise lots of different executive function skills. These might include activities such as cooking (following a recipe), baking, gardening, shopping, choreographing a dance, following a map, going on a treasure hunt, putting together a puzzle, building something like a bridge or a tower, playing supermarket sweep, etc.
- » Games such as hide and seek, using find-it tubes, playing treasure hunts, and using hideaway puppets can be useful for supporting the concept of object permanence.
- » These ideas can be enhanced by apps and computer programs that are designed to support children to strengthen their executive function skills.
- » Children should be encouraged to use and be acknowledged and praised for using/trying to use these skills such as their concentration part or their memory muscle. Chapter 5 contains some strategies for supporting and expanding on children's strengths.