Why Fine Motor Skills and Why Fantastic Fingers®?

'In every job that must be done there is an element of fun, find the fun and snap the job's a game!' – Mary Poppins

Is improving the development of children's fine motor skills a job that *must* be done?

Fine motor skills are the small coordinated movements and actions of the hand and fingers which are essential for the performance of everyday tasks. Between the ages of three and five years, children become increasingly skilled in using their hands for tasks such as fastening buttons and shoes, threading beads, cutting with scissors, colouring, drawing and handwriting. In order for children's fine motor skills to develop optimally, exploration, practice and repetition in a positive and supportive environment is vital.

Here are five reasons why good fine motor skills are important, and how *Fantastic Fingers*® meets this need:

- **Fine Motor Skills are Linked to Attention and are a Major Contributor to School Readiness**

Early childhood interventions should shift the focus from direct numeracy and reading instruction practices to build two foundational skills required for all cognitive learning namely, attention and fine motor skills (Grissmer *et al.*, 2010).

Fine motor skills and cognitive skills including attention, are neurologically linked. Evidence from neuroscience studies indicates that children use their fine motor skills in order to *learn* how to learn (Adolph, 2005, 2008).

Fine motor activities such as copying symbols with a writing tool also simultaneously stimulate the prefrontal cortex. This area of the brain is critical for executive function and learning. The prefrontal cortex is also responsible for the cognitive aspects of self-regulation: the way in which children pay attention, exercise self-control and use working memory to remember and manipulate information.

In order to learn and complete instructional activities from others, children must be able to regulate themselves. Through instruction and participation in the *Fantastic Fingers*® activities, children develop their ability to attend while simultaneously improving their fine motor skills. Both are vital for success at school.

In addition, while making 'fantastic fingers', children's oral language, listening skills, creativity, music appreciation, early literacy and numeracy are developed. They also develop strength in the larger shoulder and trunk muscles for good postural control. These are all very important for school readiness.

- **Early Fine Motor Skills are a Significant Predictor of Later Academic Success**

A paper summarising important research from the last 15 years that addresses school readiness, identifies four key skills which predict future academic success (Frazeur Cross & Conn-Powers, 2011). These are school-entry math and reading skills, attention and fine motor skills.

Using statistical measures, fine motor skills, not gross motor skills have been shown to be as important as attention measures in predicting achievement at school (Grissmer *et al.*, 2010).

Dinehart and Manfra (2013) looked at the effects of two types of fine motor skills on later academic achievement. Over 3000

preschool children with an average age of five years two months were assessed then reassessed later on when in Grade 2.

The children with good fine motor representational skills, those who could imitate strokes, copy shapes, letters and numbers and draw simple objects well, did better than their peers in reading and math achievement when they were in Grade 2. The children with good fine motor manipulative skills e.g. building with blocks, placing pegs in a board, cutting with scissors, did better than their peers in math (B versus C grade).

The activities in *Fantastic Fingers*® effectively address the underlying components needed for good fine motor representational skills and for good fine motor manipulative skills.

- **Large Amount of Time Spent on Fine Motor Tasks in Class**

Three to five year olds spend an average of 37% of their time in class doing fine motor tasks (Marr *et al.*, 2003). In the early school years, this increases with children spending up to 60% of their school day performing fine motor tasks (McHale & Cermak, 1992).

- **Good Fine Motor Skills Make Writing Tasks Easier**

Writing by hand is important and has advantages over other methods. Four year old children who recorded words by writing with a crayon had better recall for letters than those who typed the words on a keyboard (Longcamp *et al.*, 2005).

Additional advantages of writing by hand are: it increases cognitive ability by stimulating brain development much like learning a foreign language; it is more effective for brainstorming, with faster generation of ideas; and children whose penmanship is developed, produce more when writing by hand than typing.

But no other school task is as complex as writing by hand as it requires the synchronisation of thinking, speech, phonological and fine motor skill components (Feder & Majnemer, 2007).

When instructing young children or children experiencing difficulties, it is vital to develop the writing components separately. Practise fine motor skills, handwriting and letter-sound knowledge, then combine them into writing tasks.

Approximately 10-30% of children have either fine motor delays or handwriting difficulties (McHale & Cermak, 1992; Feder & Majnemer, 2007). Students with poor fine motor skills experience difficulty with colouring, drawing, scissor and ruler use, pasting, handwriting and touch typing. These difficulties often lead to low self-esteem, academic and behavioural problems.

- **Under-developed Fine Motor Skills Due to Technology**

Increasing numbers of children rely on technology for the majority of their play. Sadly, technology has a displacement effect, severely limiting traditional types of play. As a result, children have insufficient time and opportunity to develop the necessary strength, coordination and sensory awareness required for complex fine motor tasks.

In addition to delayed sensory-motor milestones, language delays, self-regulation difficulties, and social isolation have also been documented.

Today's children need our time. They need us to go to the park and fly a kite with them. They want us to sing and play games with them. They want our eye contact and attention. They need our help to develop their minds and bodies.

Today's children are crying out: 'Show me that you love me by spending time with me.' *Songs & Games for Fantastic Fingers*® provides many opportunities to do just this.