

Thank you for this opportunity to contribute to the inquiry into Child Development Services in Western Australia.

### **My perspective**

I am contributing to this inquiry from the perspective of a mother of a child who had difficulties that were incorrectly classed as being behavioural in nature, an ex developmental psychologist, an ex early childhood teacher and currently a person who owns a business which provides an effective intervention for a range of children who are not developing behaviourally, emotionally, cognitively or educationally in the expected manner. By the time I see them, they are often, but not always, diagnosed as having dyslexia, ADD, autism or Auditory Processing Disorder. As a whole, I will refer to them as having learning difficulties. My view is that the presenting behaviours are consequent upon their learning difficulties, not co-morbid.

I use a cognitive model to understand learning, behaviour, and socio-emotional development. My assessment strategy is to measure the relative strengths and weaknesses of the cognitive functions of each participant in my program and to use their unique cognitive profile to understand them, their behaviours, and their learning. My goal is to strengthen their weaker cognitive functions so they can learn, behave appropriately, and succeed, whereas before they have failed.

Considering the cognitive causes of behaviour and learning issues is highly effective. Seventeen cognitive functions have been identified as being important for learning and behaviour. These names of the cognitive areas are listed in the following chart, along with a description of their function in the educational setting, common features that might be observed if there is a problem with the function, and the educational outcomes that are expected once the function is strengthened. The functions also affect behaviours outside of the educational setting.

# Arrowsmith Program®

## Chart of Learning Dysfunctions and Learning Outcomes

Cognitive Area	Description of Cognitive Function	Common Features if there is a Problem in this Area	Learning Outcomes
Motor Symbol Sequencing	Ability to learn and produce a written sequence of symbols	Messy handwriting, miscopying, irregular spelling, speech rambling, careless written errors in mathematics, poor written performance	Improve handwriting; reduce careless errors in written work; develop fine motor skills, sequential motor memory and motor planning in writing, capacity for hand-eye coordination
Symbol Relations	Ability to understand the relationships among two or more ideas or concepts	Difficulty with reading comprehension, trouble with mathematical reasoning, trouble with logical reasoning, difficulty reading an analog clock, problem understanding cause and effect, reversals of 'b'-'d'; 'p'-'q'(younger students and in more severe cases)	Develop ability to read a clock; improve capacity necessary for understanding relationships between concepts necessary for logical and mathematical reasoning and reading comprehension that affect all aspects of curriculum and life
Memory for Information/ Instructions	Ability to remember chunks of auditory information	Trouble remembering oral instructions, difficulty following lectures or extended conversations, problem acquiring information through listening	Develop auditory memory and the capacity to remember and follow oral instructions and retain information for learning; improve the capacity to remember chunks of information
Predicative Speech	Ability to see how words and numbers interconnect sequentially into fluent sentences and procedures	Problem putting information into one's own words, speaking in incomplete sentences, difficulty using internal speech to work out consequences, trouble following long sentences, breakdown of steps in mathematical procedures	Improve the capacity to understand a sentence of increasing difficulty and length; improve the ability to put information into own words; develop the capacity for the sense of how symbols (words and numbers) interconnect sequentially; improve the ability to follow procedures in mathematics; develop the ability to write and speak in complete sentences
Broca's Speech Pronunciation	Ability to learn to pronounce syllables and then integrate them into the stable and consistent pronunciation of a word	Mispronouncing words, avoiding using words because of uncertainty of pronunciation, limited ability to learn and use phonics, difficulty learning foreign languages, difficulty thinking and talking at the same time, flat and monotone speech with lack of rhythm and intonation	Develop/improve the capacity for sound-symbol correspondence; develop the phonemic memory necessary for the phonetic aspect of reading; develop the ability to pronounce multisyllabic words correctly; develop the ability to read with greater oral expression

Cognitive Area	Description of Cognitive Function	Common Features if there is a Problem in this Area	Learning Outcomes
Symbolic Thinking	Ability to develop and maintain plans and strategies through the use of language	Problem being self-directed and self-organized in learning, limited mental initiative, difficulty keeping attention relevantly oriented to the demands of a task necessary for completion, difficulty thinking, planning, problem solving, trouble seeing the main point	Develop/improve the ability to grasp the main point of written or orally presented material; develop the ability to state the main idea of a selection using one's own words; develop the ability to maintain plans and strategies for problem solving; develop the capacity to express ideas more clearly in writing; develop the capacity to self-direct, to develop initiative and to remain focused on tasks to completion
Symbol Recognition	Ability to visually recognize and remember a word or symbol	Poor word recognition, slow reading, difficulty with spelling, trouble remembering symbol patterns such as mathematical or chemical equations	Develop/improve the capacity to visually recognize and remember words or symbols necessary for reading, spelling and mathematics
Lexical Memory	Ability to remember several unrelated words	Problems with associative memory, trouble following auditory information, trouble learning names of things such as animals, places, people, colors, days of the week	Improve vocabulary development and auditory memory for words
Artifactual Thinking	Ability to register and interpret non-verbal information and plan and problem solve non-verbally	Problems interpreting non-verbal information such as body language, facial expression and voice tone, weak social skills, difficulty perceiving and interpreting one's own emotions, difficulty thinking, planning, problem solving non-verbally	Develop the capacity for non-verbal thinking and problem-solving; develop the ability to interpret body language, facial expression and voice tone and to respond appropriately in interpersonal interactions; develop ability to interpret and modulate his/her own emotions
Supplementary Motor	Ability to carry out internal sequential mental operations, such as mental mathematics	Finger counting, trouble retaining numbers in one's head, difficulty making change, problem learning math facts, poor sense of time management, difficulty with time signature in music	Develop the capacity for number sense; develop the capacity for carrying out internal sequential, mental computation of addition and subtraction; develop the ability to use time wisely through scheduling and organization; develop an understanding of quantification related to money, time, space

(<https://arrowsmithschool.org/chart-of-learning-outcomes/>)

[Please be aware that whilst the information in this chart is correct the titles of Artifactual Thinking and Supplementary Motor have been updated to Non Verbal Thinking and Quantitative Sense respectively.]

It is the combination of these areas that allows people to engage in higher order mental processes such as reading, writing, numeracy, co-operation, empathy, thoughtfulness and problem solving. Dependent upon the person's individual cognitive profile of strong and weak areas some people who have trouble learning to read will also have trouble learning numeracy whilst others will not. It follows that other people will have difficulty in numeracy but not in literacy. Some will have trouble relating to other people, whilst others will be risk takers because they are not able to understand cause and effect. Others will appear to be disobedient because they have genuinely forgotten what they are supposed to do.

I believe that the Child Development Centres would be ideally placed to assess and intervene with children who have problems in these areas were they staffed with practitioners who are trained in and understand this methodology. It would prevent these issues from being routinely missed and the many negative consequences of these problems for individuals, their families, the community, and the health, social support and justice systems have potential to be averted.

### **Parenting a child with a learning disorder**

Children who have a learning difficulty are not easy to parent. This can be the case from very early on. (In my case my son began being very unsettled at 6 weeks of age). The children I work with very often appear to be impulsive, forgetful, poor listeners, unmotivated, volatile, rude, overly passive or inattentive. These behaviours are seen as being co-morbid to whichever diagnosis they have but they are, in reality, further evidence of the weak underlying cognitive functions the child has. As toddlers or young children, they do not respond to the usual parenting strategies of using consequences, explanation, reminder, and social rewards. A child with poor memory for information and instructions will genuinely forget what the parent has told them to do. A child who has poor Object Recognition will turn their back on the mess they have just made and genuinely forget it is there. Children can be oppositional rather than co-operative because they do not understand cause and effect. They can appear to be disorganised, forgetful, illogical, rude, demanding, and irresponsible.

These are the issues that parents identify and ask professional people to help them with. As a result of the significant gaps in the knowledge and understanding of professional people working with children about how brain

function affects children's behaviour, memory, personality and social interactions the issues that the parents are reporting are not recognised and understood. The universal report to me is that parents feel unheard and misunderstood. They are sent on parenting courses, or given behaviour modification strategies, or told 'you need to be firmer with the child' as if it is the parent's parenting style that is the problem. Those children who did receive therapy found that the intervention did not help them in the long term. This is incredibly confusing, exhausting, and frustrating for parents. It leads to misunderstanding of the child and his/her behaviour, conflict between parents, and anxiety within the child. Parents may begin to blame the child for something they have no control over. There may be violence within the family and towards the child around the child's behaviour due to the parent's frustration, exhaustion, and lack of understanding. In the long term this can lead to family separation. The child misses out on important developmental experiences. Siblings are exposed to conflict. Productivity is affected as the parents may need more time away from work. Extra health resources are consumed by parents who keep trying to find a resolution for their child's issues or as anxiety and depression affect the family members. Sometimes families become socially isolated as they are exhausted, and their child's behaviour may not make him or her popular.

I work with magnificent parents. They are highly motivated, protective, and caring of their children, but they are also exhausted and get pushed to their limit by their child's behaviour. It is nobody's fault – except that of the system which does not respond to their needs, and which continually tells them directly, and indirectly, that they are failing as parents and their child is not a good one.

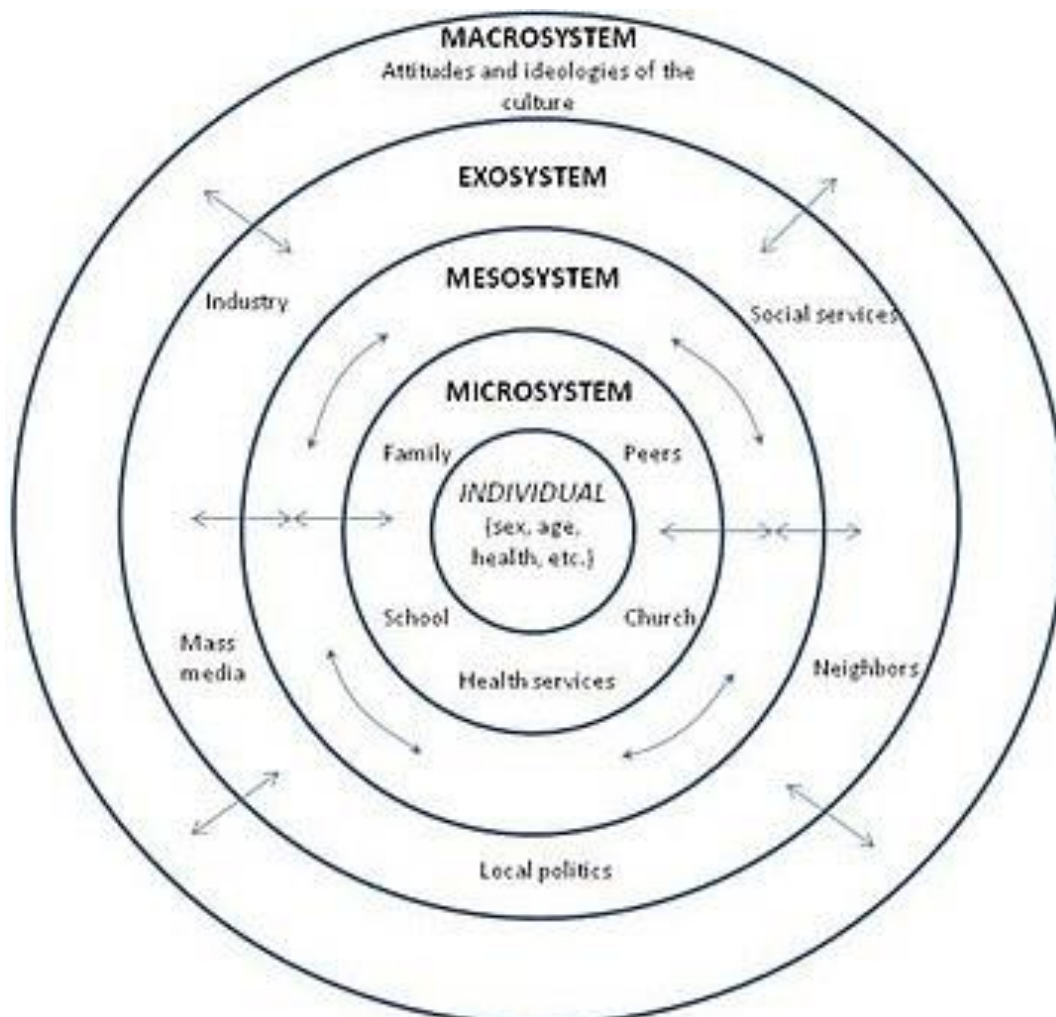
### **Prevalence of learning difficulties in children in Australia**

To the best of my knowledge, we do not know what percentage of the Australian population could be identified as having a learning difficulty. International studies are not common. Shaywitz, Shaywitz, Fletcher & Escobar (1990) identified that 9% of boys and 6% of girls in third grade were reading disabled in an epidemiological sample [The Connecticut Longitudinal Study]. Schulte-Korne (2010) says 5% of the German population has dyslexia alone. The ground-breaking PACFOLD (Putting a Canadian Face on Learning Disabilities, 2001) study is particularly detailed and useful, and I will refer to it several times during this submission. It identifies that 10% of the Canadian population have a learning disorder (Crawford, 2007).

It seems reasonable to accept that 10% of people in the Australia population also have learning difficulties which interfere with their ability to learn curriculum, behave appropriately, participate in the workforce, and achieve independence in life. The figure of 10% would indicate that this is an unrecognised public health issue.

### The child at school

Once a child with weak cognitive functions begins school they do not learn at the expected rate within the school system. The training of teaching staff leaves teachers unprepared to help and predisposes them to perceive the responsibility for learning failure as a result of socially mediated reasons. Education students are taught Bronfenbrenner’s model of learning as illustrated in this diagram:



This model does not directly recognise that the child themselves influences the world around them – yet we all know that some children are easy to get along with and some are not. This model also does not explain why some children in



impoverished environments become capable, well-behaved learners and others do not, or why some children learn well in particular areas of the curriculum but not in others. In particular, it does not take individual differences within the child into account.

Education students do not receive any learning about how the brain influences the capacity of a child to learn, despite its central role in the process. There is very little learning about how to recognise when the child has a learning problem or what this means. Essentially, learning problems are seen as the responsibility of Education Assistants and/or specialist teachers.

I do not argue that there is no relationship between weak levels of literacy, numeracy and problem-solving skills, and particular socio-demographic characteristics. We know that a person's educational level has a strong link with their economic status as an adult. Those with higher levels of education tend to be much more economically secure and of higher economic status. In contrast, and by their very nature, people with dyslexia and other learning disorders tend not to achieve such high levels of education, despite similar levels of potential and opportunity. It follows that, on average, they have lower paid work, less secure, or under-employment, and lower socio-economic status as adults. Lamb, S., Huo, S., Walstab, A., Wade, A., Maire, Q., Doecke, E., Jackson, J. & Endekov, (2020) report that the research shows a clear and persistent relationship between socio-economic status and educational outcomes in Australia across all areas, at all stages. They say 'Up to one half of children and young people from disadvantaged backgrounds are not gaining the skills and knowledge needed to be successful lifelong learners, creative, confident, active and informed citizens. These learners are far more likely, compared with their advantaged peers, to be missing out in all areas of learning, at all stages.' The Early Childhood Development Index provides similar figures (40%) (

Additionally, there is evidence that there is at least partial genetic contribution to the development of learning difficulties (Fiedorowicz, Benezra, MacDonald, McElgunn, Wilson & Kaplan, 2001). The children of people who have learning difficulties, who are born into a low socio-economic situation because of their parent's low socio-economic status, are also likely to have a learning problem. The children's consequent difficulty with learning, however, has very little directly to do with their socio-economic status as is assumed by the ecological theories of learning and by many practitioners. There is a genetic loading that predisposes them to the difficulties, but the causal link must be considered as going both ways. The problem is, of course, that the family is often not in the

economic situation to pay for them to receive effective intervention or cannot imagine that having a better learning capacity is possible.

Additionally, if we consider the cognitive profiles of people with literacy and numeracy problems, many individuals do not have a well-developed Symbol Relations cognitive area. The Symbol Relations area is responsible for understanding relationships between concepts necessary for logical and mathematical reasoning, and general comprehension (Arrowsmith, 2020). Weakness in this cognitive area affects all aspects of life. Information processing speed can be slower than is required for making timely and reasonable decisions. They are unable to take more than a few pieces of information into account when making decisions. The consequence is that they tend to make errors of judgement. They have limited capacity with concentration and to understanding the world around them. They have limited ability to use logic and to understand cause and effect. They have limited ability to respond to the ordinary behaviour management techniques that parents and schools use as they cannot see a relationship between cause and effect. A simple example of this is not understanding that doing their school work will result in the chance to have some free class time later. They may think that the teacher is victimising them when they miss out on it. Problems, which other people can solve, become overwhelming and less than ideal actions can be used as solutions.

Addressing the root cognitive cause of the person's learning problem is key to intervening in this particular cycle of poverty.

### **The Traditional Response**

The traditional intervention approaches for learning difficulties that are used have not adjusted to take advantage of the current understanding of the brain's neuroplastic qualities. Whilst most assume that the underlying cause of a learning difficulty is neurological in nature, they also believe that the underlying problem cannot be remediated because the problem is bio-chemical or the brain cannot be changed. The interventions that are used, therefore, are 'work-arounds' or compensatory. They involve re-teaching curriculum in smaller chunks, simplifying the curriculum, or using multi-sensory techniques to benefit from the person's apparent learning style (despite learning style theory having been discredited by John Hattie, Professor and Director of the Melbourne Education Research Institute at the University of Melbourne (2014)). As an example, if the student has a poor auditory memory, they might be advised to make lots of notes so they can go over the material that they were unable to



retain in memory. If they are unable to read, then tutoring and a C pen might be recommended. Alternatively, if they cannot write, they might be advised to use voice recognition software. The school might support them by placing them in an 'Academic Support' class. Medical intervention includes providing medication to help with concentration.

These interventions, however, do not address the root cause of the problem ie that the person has weak cognitive functions. The difficulties with these approaches are three-fold: no compensation or work around is fully effective, they are often cumbersome and take huge amounts of personal energy to implement. These are some of the reasons that people who have literacy and/or numeracy issues do not always thrive in life – the ongoing effort to compensate for their cognitive weaknesses is not completely effective whilst also being exhausting. This is all consequent on the lack of real understanding about what is causing the person's problems.

The traditional response expects the person to remain learning disabled for life.

### **Life Course Trajectory with a learning disability**

We know that when people have low literacy and numeracy skills they are much more at risk of insecure, under-, or un-employment. We know their wages are generally lower than those who are more highly educated.

The PACFOLD (2007) study identified that, in a pattern that remains constant throughout their lifetimes, just over half of adults with learning disorders aged 30 – 44 (51%) reported being employed in the week prior to the 2001 Canadian census, compared to 89.1% of the population in the same age group.

Wilson, Armstrong, Furrie, & Walcot, (2009) wrote that Canadian people with learning issues are 2-3 times more likely to be diagnosed with high levels of anxiety and other mental health issues than are Canadians without learning disorders, and whilst 54% of Canadian adults are married or in long term relationships this is true for only 28% of people with learning disorders. In 2016, Macdonald, Meacham and Merchant released a study that suggested there are links between youth suicide, dyslexia, homelessness, and drug abuse. Morales-Munoz (2021) used information gained in the Avon Longitudinal Study of Parents and Children in the United Kingdom. By analyzing the sample of 13988 participants she found correlations between cognitive problems in childhood and poor mental health outcomes in later life.

It is also apparent that having a learning difficulty influences one's choice of career. Roeher (2007) identifies that there are significantly higher numbers of people with learning disorders working in business and human services as opposed to the sciences.

The West Australian Government has identified that 80% of their prison population do not have functional literacy and numeracy (West Australian Office of the Auditor General, 2020). In 2018 Bower, Passmore & Mutch found that 9/10 youth in custodial care (Banksia Detention Centre) had some form of neuro-disability which affected their executive functioning, memory, motor skills, cognition, attention, social skills and adaptive behaviour. Only 2 of the 99 young people assessed had been identified as having cognitive weaknesses prior to the study. Some had been labelled as 'just naughty'. The research team said that they hoped their findings would better inform the practices of health, education, justice, child protection and other systems responding to children displaying issues including school difficulties, mental health problems or behavioural difficulties.

Headspace Australia acknowledges that underachievement at school, having ADHD, a history of uninhibited behaviour and anxiety (all of which can be explained using a cognitive model of social behaviour, literacy and numeracy attainment) are risk factors for drug and alcohol abuse.

In 2017 the Mitchell Institute tracked all 25 – 44-year-olds who had left school prior to year 12 (13% of the school aged population) from 2001 – 2014 and found that 90% of the men and 82% of the women had not returned to study or training. The paper showed that disparities in educational attainment led to major differences in many areas of life: from unemployment, poor health, crime and public welfare dependency. The annual cost in lost taxes per cohort was \$316.8m; for health \$6.7m; for crime \$11.6m and for welfare \$145.8m. Whilst there is no claim that all the children who left school early did so because they had a learning difficulty, we should consider that in Canada 25% of students with learning disabilities leave school prior to year 12 and that this is at twice the rate of students leaving school early who do not have an identified learning disorder (Crawford, 2007).

Australia's Health Data Insights (2020), reports correlations which reflect significant differences in mortality and life expectancy compared with the level of education and employment – with positive benefits for those people who are highly educated and employed.

I suggest that literacy and numeracy difficulties are also linked to less adaptive personal, social and parenting behaviours. As an example, a parent might have weak capacity for Non-Verbal Thinking, Symbol Relations and Symbolic Thinking. Whilst contributing to difficulties with personal literacy and numeracy, this combination of weaker cognitive areas would also lead to inflexible thinking, disorganisation, low levels of empathy and difficulties with planning and problem solving throughout their life. Depending on their individual cognitive profile, there is the potential for them not to be able to understand their own emotions or the emotions of others. They may not empathise appropriately with their child or be able to think of ways to solve common behavioural issues in a peaceful, loving way. This combination of cognitive weaknesses may lead to engaging in harmful behaviours as a parent or member of society as reflected in the statistics above.

It is reasonable to conclude that having a learning disorder has profound and ongoing effects on a person's capacity to participate in the labour force, behave appropriately, be a nurturing parent and a healthy member of society at the level which their underlying intellectual capacity would predict.

### **An Alternative View**

Fortunately, an effective approach to responding to children who have weaker cognitive functioning exists. It is called the Arrowsmith Program and was developed by Barbara Arrowsmith Young in response to her own severe learning difficulties and learning failure. It draws from the understandings of neuroscience and education to identify, exercise, and then, using the power of neuroplasticity, strengthen the weak underlying cognitive areas that are thought to cause learning disorders. Research about the Arrowsmith Program shows that once these weaker cognitive areas are identified, exercised, and strengthened, the person becomes a competent and independent learner for life.

The Arrowsmith Program is based on three premises:

1. Individuals with the learning difficulties that result in poor levels of literacy, numeracy and problem solving have weaker cognitive areas in the neural networks that are activated during literacy and numeracy tasks – ie the problem is primarily biological rather than ecological or a result of low motivation to learn.
2. Weaker cognitive areas can be strengthened through cognitive exercises.

3. Once the source of the learning difficulty is addressed, the learner's ability to perform the complex tasks of literacy, numeracy and problem solving will also be improved.

The Arrowsmith Program is delivered by Certified Arrowsmith Program teachers in schools and community settings (1 in Western Australia). It is unique in that it considers the role of the person's cognitive capacity in their life journey. Unlike other learning interventions the Arrowsmith Program does not assume that every person is capable of learning curriculum on entry to the school system or ascribe the failure to learn to a combination of the consequence of poor teaching, gender, personal disinterest, or socio-economic factors. The knowledge that informs the Arrowsmith Program is that every person's brain is unique and that the principles of neuroplasticity can be harnessed to enhance most people's capacity to learn throughout their life span.

Immunization (a capacity-based intervention against a disease) is a topical and equivalent example of the difference between intervention philosophies. It is clearly a much better, and cheaper, strategy to help us overcome illness than is ventilation (a compensation-based intervention). The individual can overcome the infection independently and competently because the immune system is prepared, rather than with assistance from medical staff, machines and medications. In the same way, the Arrowsmith Program addresses the root causes of learning problems by preparing the brain to learn, rather than looking for ways to manage problems on an ongoing basis.

The Arrowsmith Program is based on two lines of research. The first line of research was A. R. Luria's (1966, 1970a, 1970b, 1973, 1980) work in Russia which identified and investigated the function of different regions of the brain and the 'functional systems' within it. These functional systems are now called neural networks. The second line of research was Mark Rosenzweig's (1987) work at the University of California looking at stimulation leading to neurophysiological changes with resultant improvement in learning (the brains of rats exposed to an enriched and stimulating environment changed physiologically and these animals were able to learn mazes more quickly). This is neuroplasticity – stimulation leading to brain change with resultant learning and behaviour changes.

In 1977 Barbara Arrowsmith Young posed the following questions:

1. If one could understand the nature of a cognitive function, through studying Luria's work, could one create a task that targets and works that function – what Rosenzweig called 'targeted differential stimulation'?
2. Would working on that task repetitively with a graduated increase in complexity, accuracy, and speed of performance lead to neuroplastic change in the brain?
3. Would these changes in the brain lead to changes in the learning process?

The answer to these questions is 'yes'.

Neuroplasticity, also known as brain plasticity, is the brain's ability to change both its physical structure and its functional organization in response to training and experience – to grow dendrites (the branch like structures on the cell body of the neuron which receive signals coming from other neurons), to form new neural connections, to strengthen existing connections, to grow new neurons, to increase neurotransmitters – all of which fundamentally change the brain's capacity to learn and to function. Strengthening these weaker capacities increases the overall functioning of these specific cognitive areas, allowing them to function as they are required to (including enabling learning to occur and good behavioural decisions to be made).

The philosophy that the capacity of the learner is not fixed but can be modified through the application of the principles of neuroplasticity sets the Arrowsmith Program apart from most other programs for students with learning difficulties. The Arrowsmith Program is designed to exercise and strengthen the learner's ability to learn through a range of specific cognitive exercises. The goal is to change the capacity of the learner to learn so that the learner can understand, absorb, retain, process and use the content, laying the foundation for learning by strengthening critical cognitive functions such as reasoning, thinking, planning, problem solving, visual memory for symbol patterns, auditory memory for facts and instructions, visual memory for objects such as landmarks and faces, number sense, non-verbal problem solving required for effective social interaction, spatial reasoning necessary for navigating one's way, and learning motor plans involved in writing and reading. The goal of this approach is to allow the learner to learn easily and efficiently and proceed through his or her emotional life, education, academic training and vocational career independently with strengthened cognitive functioning. The ultimate goal is for the learner to succeed where before they struggled and often failed.

The expectation of people who work with the Arrowsmith Program is that once the participant has finished their program of cognitive change, they will no longer have a learning difficulty.

### **Mental Health outcomes**

I am also witness to the profoundly negative effects on the mental health of people who have a learning difficulty and their families. Please imagine yourself in the position of a 10-year-old boy whose Symbol Relations area and Memory for Information and Instructions area is weak. He is unable to remember or comprehend the instructions his teacher is providing. This happens day after day after day for year after year after year. The child tries to say they can't do an academic task. They are given some extra help, but it is ineffective. Finally, they are told to try harder, but that doesn't work either. The child becomes more distressed. Their only method of communicating this to the adults around him is through his behaviour. He quickly gains the labels of naughty, disruptive, and not trying hard enough. The school tries to talk to the parents about it, but they become offended because it is their beautiful child who is being criticized and they can be triggered by memories of having experienced a difficult school life themselves. The relationship between the school and the family breaks down. The child is legally compelled to continue going to school where their learning needs are not (at present) catered for. He cries every day before school and comes home exhausted every afternoon. His family can see he is miserable and tries to talk to the school, but they believe the issues are mediated by either social or personal decisions and cannot offer a solution. Despite the child's downwardly spiralling mental health and academic results, the family is still compelled to ensure he goes to school unless they undertake home education. They do not feel competent to do this. The self-perpetuating cycle of misery continues throughout school as the difference between what the child can learn, and what the curriculum says they must learn, becomes wider and more meaningless to the child. It takes an exceptional family to support their child through this without mental health problems for themselves and their child being the result.

Again, learning disorders, for which there is an available, effective intervention, have a profound and ongoing effect on people's lives, their family's lives, the school system and for society as a whole.

### **Program availability**

The Arrowsmith Program is currently available at only one site in Western Australia. The difficulty for people with learning difficulties however is in gaining access to the program. It is only provided on a totally private basis and is intensive. Each cognitive area that is exercised takes a commitment of 3 – 4 hours per week and many people have more than one area that is weak. Additionally, parents are reluctant to, or unable to, enrol their child in the program on a full time basis because of the expense and/or their duty to send the child to school – where the child is very unhappy and not learning to their underlying capacity.

Given the cost to the individual and the community of behavioural, literacy, numeracy and problem solving weaknesses, however, there is a strong argument that making this life changing program more available to people is an investment.

I would be delighted to host a member of the Committee at my business to hear from my students and their families, and to observe what we do and the outcomes we achieve.

## **RECOMMENDATIONS**

- The Western Australian Government funds a project to demonstrate the effectiveness of this program with children who have learning difficulties. Success criteria would include measuring the cognitive gain made by the participants, measuring the academic gain made by the participants and measuring the social, including school re-engagement, outcomes that result.
- That this program is evaluated by an academic who will write a research paper for publication.
- Once the concept of cognitive assessment and intervention is proven in the WA context, the Child Development Centres would be ideal hubs for implementation of this life changing program.

Thank you for the time you have taken to read and review my submission. I am happy to be consulted further if there is clarification needed. I can also provide the details of contacts for you if required.

Yours sincerely

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