Beyond ABCs

Future-Proof Your Child

BY DR. RICHARD YEN

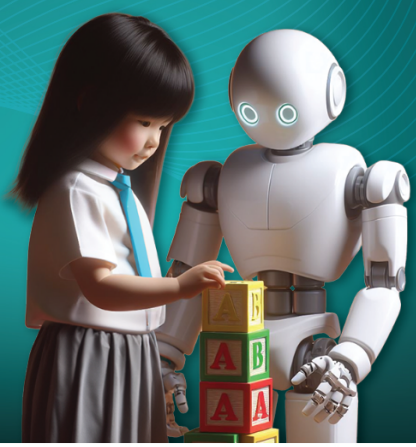


Table of Content

Why I wrote this book

All parents want their children to be successful. I am no exception. I have a pair of twins: a boy and a girl. Because of my unique background in high-tech and pre-school education, I believe I have some valuable lessons to share. I hope you will find them useful.

By way of introduction, I am a Harvard-trained Ph.D. physicist. Besides conducting research and development, I have worked in Silicon Valley, both in the computer industry and as a venture capitalist. As an entrepreneur, I founded Ednovation, which develops edtech and operates 73 pre-schools in Singapore, China, and ASEAN. I have dedicated the past 30 years of my life to early childhood education. (ChildFirst is a pre-school brand under Ednovation.)

My experiences have shaped my beliefs in how pre-school education should be carried out to prepare our children for the future. In fact, my own children were a catalyst for the development of ChildFirst. As my twins reached pre-school age, I thought about how I would like to see them educated, and this shaped the development of ChildFirst Pre-schools. My own children then attended and graduated from ChildFirst.

I hope that by sharing these stories, you may clarify your pre-school selection criteria for your child.

All credible pre-schools should prepare children well for the ABCs of early childhood education.

Although many great early childhood education approaches have evolved over the years, our world is dramatically changing. More importantly, advances in neuroscience, educational pedagogy, and technology have progressed significantly. We are now entering an era where mRNA is engineered to fight diseases in our bodies (i.e. mRNA COVID vaccines), and AI is challenging our intelligence.

At ChildFirst, we believe that in this rapidly changing world, the basic ABCs are insufficient to prepare children for the future. As we shall see later in this book, our children's brains have sensitivity periods in which we must instill other skills beyond the traditional ABCs during the pre-school years to prepare them for the future.

Chapter 1
Dream Outcome for Your Child

My Story

I was a late developer. I was a mediocre student in primary school. It wasn't until secondary school that I realised I could improve if I put in some effort. I only started excelling in college and did well enough to be accepted by Harvard to pursue my Ph.D.

I observed something interesting along the way. Most of my classmates who did well in primary school sizzled out in secondary school. Similarly, many who were top students in secondary school did not do as well in college. Based on this observation, I see an academic career as a long-distance race and not a sprint. Those who peak too early may not have the stamina to win, or even complete, the race in the end.

It's important for our children to achieve balance in their education, ensuring they are well-prepared and confident in their abilities without feeling the pressure to always be the best in class. My own journey, from being a top student in college to facing the intense competition at Harvard, taught me valuable lessons about the challenges of maintaining one's confidence among equally talented peers. This experience highlighted the importance of resilience and the potential consequences of extreme pressure, such as burnout or more severe reactions, which some may face when transitioning from being a standout student to one among many high achievers.

This has shaped my educational philosophy for my children: helping them to be competent and self-assured learners, without the stress of needing to be at the top of their class. I believe in fostering an environment where they can excel at their own pace, preparing them not just academically, but also to be distinctive and valued members of society. Thus, my ideal educational setting for my children would prioritise their holistic development, ensuring they are:

1. Independent (not overly dependent on adults and maids to do everything for them)
2. Competent and confident in their academic abilities (without the necessity of being the top student)
3. Poised to make a unique contribution and be acknowledged in their community and beyond (to be recognised by their peers)
4. Prepared for the future full of unknowns (and survive, come what may)

I will continue illustrating the second point in Chapter 2 on Self-help Skills, the third point in Chapter 4 on People Skills, and the fourth point in Chapter 5 on Future Skills.

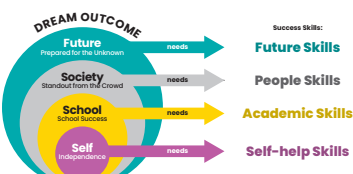
Dream Outcome

I have summarised here my selection criteria for my pre-school dream outcome:

ChildFirst Pre-schools are designed and developed based on this dream outcome. My children graduated from a ChildFirst Pre-school; I walk the talk.

Skills Required for the Dream Outcome

To achieve this dream outcome, we need:



We will now discuss each skill in sequence in the following chapters.

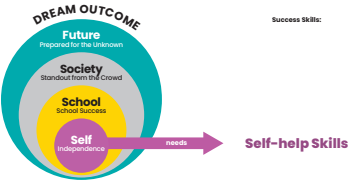
Key Takeaways

1. It's important to choose the right pre-school as it can significantly impact your child's future development and success.
2. Besides learning the basic ABCs, your child must be equipped with a broad set of skills to effectively navigate an ever-changing world.
3. Our dream outcome at ChildFirst is to ensure that your child is prepared to not only handle future academic challenges, but also successfully navigate societal interactions and be adaptable to future challenges. We want to foster a holistic skill set that includes self, academics, people, and future skills.

Reflections

1. Considering the changing nature of our world, do you believe that a traditional pre-school adequately equips your child for the future?
2. Does ChildFirst's holistic, comprehensive approach to early education align with your personal vision for your child's educational journey?

Chapter 2
Self-help Skills



My Story Continues

I had a great mum who took care of me and my two younger brothers. Because she was quite traditional, she wanted us to just focus on our studies and she took care of everything else. As a result, I did not learn many self-help skills; you can say that I had a pampered life.

I believe one consequence of this is that I become a very messy person. My table and drawers were always a mess because someone else was always picking up after me. I lacked the skills and practise to organise things.

You may think the impact was limited to my childhood years, but it had far-ranging consequences as illustrated by this story from when I was 21 years old.

When I was at Harvard, I lived in the dorm. One day, my aunt from Boston invited me for dinner. Afterward, she gave me some fruits and a frozen chicken to bring back. Since I didn't know how to cook, I called my mum. She told me to wash it, season it with salt and pepper, and put it in the oven to roast it. I then cooked rice and looked forward to my dinner. However, the chicken turned out way too salty and dry. I couldn't eat it and went out for dinner instead. I attributed this to my poor cooking skills and forgot about this incident. Two weeks later my mum was talking to my aunt over the phone and complained that she should not give me raw chicken as I don't know how to cook. My aunt replied: "What raw chicken. It's already cooked!" In my defence, I must say my aunt's cooking was not that great and the frozen albino-looking whole chicken looked raw to me.

In Singapore today, many families only have one child, making them more precious. Furthermore, many families also have a maid. So knowingly or unknowingly, we tend to over-pamper our children. It is important for us to consciously provide opportunities for them to do household chores so that they not only pick up these important life skills but also not take things for granted. Some of you may remember the news article some years back that showed a national services man with a maid carrying his army backpack!

Practical Life Skills

At ChildFirst, we focus on teaching self-help skills through our practical life skills programme, which starts with toddlers. We want to empower children to become confident, capable, and independent individuals who are well-equipped to navigate the world around them. These skills lay the foundation for future success and promote a sense of autonomy, competence, self-reliance and self-esteem.

The core belief of our practical life skills programme is that one needs to independently perform daily life activities and adapt and orientate himself in society. We recognise that developing independence is a gradual process that takes time and practice. Therefore, practical life skills are incorporated into our daily routine in school. The children are given age-appropriate responsibilities and classroom chores to help them develop a sense of ownership and accountability. We focus on three main areas:

- **Good manners** by developing social etiquette (e.g. turn taking and sharing), social manners (e.g. social greetings), and respect for others (e.g. listening attentively and seeking permission to use materials)
- **Care of self** by nurturing independence (e.g. taking care of belongings, completing tasks-at-hand), self-help skills (e.g. feeding, dressing and combing hair), and good habits to ensure good health (e.g. healthy eating and proper toothbrushing), hygiene (e.g. washing hands before and after eating), and safety (e.g. safe use of scissors and on the playground)
- **Care of environment** by cultivating a responsibility for the environment (e.g. putting away toys and throwing away rubbish)

Parents can support this development at home. Harvard research shows that if you want to raise more successful and happier kids, give them chores starting at age 4 or 5 years old.

Research from the ongoing 85-year Harvard study highlights a notable correlation between childhood involvement in household chores and future professional accomplishments. Examining more than 700 high achievers, researchers found that those who participated in household tasks tended to exhibit greater success in their careers later in life. This suggests that engaging in chores during childhood may instill valuable qualities that contribute to professional success, such as **responsibility and a strong work ethic**.

Moreover, involvement in shared responsibilities within the family structure fosters a sense of belonging and empathy in children. By understanding the needs of others and contributing to the household, children develop a broader perspective and **become less self-centred**. This not only benefits their personal development but also enhances their willingness to help others and collaborate effectively in professional settings later in life.

Sensorial Experience Programme (SEP)

At ChildFirst, our Sensorial Experience Programme has been designed to engage the five senses in our Pre-Nursery and Nursery 1 (18 to 36 months) children to ensure proper stimulation and wiring of their sensory networks during the peak sensitivity periods of brain growth.

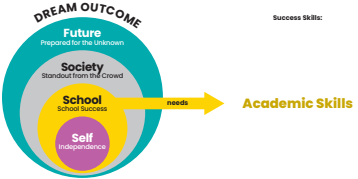
Key Takeaways

1. It's important to emphasise the need for children to learn practical life skills to navigate adulthood successfully.
2. There are long-term impacts of over-pampering children; instead, it's important to foster independence.
3. ChildFirst's curriculum prioritises autonomy, manners, and environmental responsibility from a young age.

Reflections

1. Reflect on how you balance nurturing with instilling responsibility and independence in your parenting practices. Are there areas where you could encourage more self-reliance?
2. Think about how practical life skills are supported both at home and through your children's schooling. How do the lessons from school align with the values and skills you emphasise at home?
3. Consider practical ways to encourage your children to take on more responsibility in their daily routines, helping them develop the skills they need for the future.

Chapter 3
Academic Skills



My Story Continues

I was born and educated in Hong Kong. After secondary 3, my family immigrated to New York. I enroled in a neighbourhood high school and was placed in the 10th grade. The school year had already started one month prior. On my first day of school, there was a quiz in maths class. I scored 100 on the quiz and the maths teacher took me to the principal's office. They spoke, but I had no idea what they were talking about as I had attended a Chinese school in Hong Kong and my verbal English was non-existent! The next thing I knew, I was promoted to the 11th grade even though I did not speak a word of English! I could not even complain.

Even though I had regular English classes in my Hong Kong school, it did not help my verbal English. I really had to struggle and learn English with a great deal of effort.

In Hong Kong, my language in school and with friends was Cantonese. I refused to speak Mandarin at home even though my grandparents spoke it. When I was in college, I was forced to speak Mandarin as there were many students from Taiwan at that time. Surprisingly, I started speaking Mandarin with no difficulty!

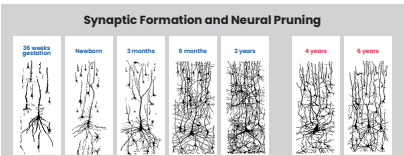
Today, you can still detect my Hong Kong accent in my spoken English at times. However, you will be hard-pressed to detect any Hong Kong accent in my Mandarin.

Because of my involvement in early childhood education over the past 30 years, I am now able to explain my contrasting experience in speaking English vs Mandarin.

Our brain is made up of about 86 billion neurons. These neurons are not very connected when we are born. As we learn, some of the neurons connect to form networks. These networks create memories and help us with skills such as walking, using chopsticks, understanding, and speaking languages. Our brain consumes a lot of energy. Even though the brain is about 2% of our body weight, it consumes 20% of our energy. To conserve energy (our brain only has 20 watts to use; most lightbulbs are 100 watts), our brain works on the principle of "use it or lose it". Any neural network that is not used will eventually be pruned away. This is called **synaptic pruning**.

For example, babies are born with the ability to hear any sounds of any language in the world. However, as time goes on, the neural pathways for the sounds that the child has not heard in her native language will be pruned away. Thereafter, she would not be able to hear that sound. The Japanese language does not have the "l" sound. As a result, Japanese adults cannot hear the "l" sound and because of this, many Japanese say "ratter" instead of "letter" as they substitute the closest sound that they can hear in their language. This is why adult learners of a foreign language will always have an accent. This is synaptic pruning at work.

Synaptic pruning happens very quickly between ages of 2 and 10. During this time, about 50 percent of the extra synapses are eliminated (see figure).

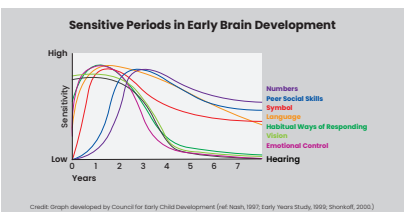


Credit: B. Cornell, Synaptic formation. BioNinja (2016)
https://old-ib.bioninja.com.au/options/option-a-neurobiology-and/a1-neural-development/synaptic-formation.html

During this time, those connections that are not used are removed, allowing children's brains to be more efficient in utilising the stronger connections that remain. Pruning useless neural pathways helps children access the needed pathways more efficiently.

This is why my English has a Cantonese accent because I was not exposed sufficiently to spoken English early on. Yet, I have no Cantonese accent in my Mandarin as I was exposed to Mandarin daily at home even though I refused to speak it.

Because of synaptic pruning, the brain has **sensitivity periods**, not just for languages but for many skills.



Because of what happened in my life, **I strongly believe in exposing children to a wide variety of experiences earlier to take full advantage of how the brain develops before synaptic pruning sets in to limit their potential**. In Chapter 3, I will further explain how an early start is implemented at ChildFirst, **not just for language learning but for talent discovery and development**.

Because I am truly bilingual and bi-cultural, I can do business in China. In fact, we have more pre-schools with more children in China than in Singapore. Personally, I have benefited from knowing my mother tongue beyond just academic success.

Mother Tongue

One of the biggest worries of parents is that children know their mother tongue. As the name suggests, the mother tongue should come naturally if it is spoken at home.

Young children can pick up any language of the world if they are provided with enough exposure to a language. Unfortunately, in Singapore, more families are speaking English at home and children lack the mother tongue environment to master Chinese. Because of synaptic pruning, once children miss learning their mother tongue during the pre-school period, **no amount of study later can make up for it**.

This is something we can avoid by providing **a half-day Chinese immersion environment at our ChildFirst Pre-school**. We have seen so many children from English-speaking homes picking up Mandarin effortlessly, saving themselves and their parents years of anxiety, tuition fees, and migration considerations later. Half-day Chinese immersion every day adds up to more than **3,000 hours of exposure from 4 to 6 years old**. No amount of study later can make up for this.

Besides verbal communication, we also have a very strong programme to help children master Chinese characters.

- **Chinese Rapid Word Recognition (CRWR)**
  Unlike English (a phonetic language), Chinese is a pictorial language. A new and effective method of rapid word recognition is to introduce Chinese words by families of related shapes and roots instead of teaching discrete words one at a time. Children learn a group of words, which is further enhanced with "rhymes and stories". Each family of words is knit together into a rhyming short story, which facilitates both the speed and retention of learning. The stories are then animated to make learning more fun and the meanings even

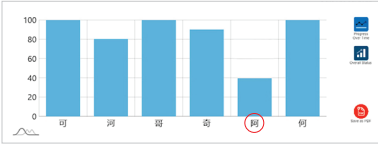
This programme is also designed based on Multiple Intelligences (MI) principles (see MI section in Chapter 3). Children with different MI profiles may prefer to sing and dance to these rhymes. Our CRWR programme is so effective that more than 10,000 children in our China pre-schools use it to recognise Chinese characters.

Click to view

Our CRWR programme is accompanied by our Chinese Step Readers, which is a series of 36 sequenced books that help children apply their newly learnt word recognition skills to achieve independent reading.

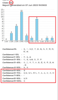
- **AI Chinese**

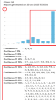
  Our CRWR programme is very effective in helping children recognise Chinese characters. However, recognising a word learnt today does not mean a child will remember it later. How do we enhance long-term memory retention? This is where our AI Chinese complements our CRWR programme. AI Chinese effectively tracks the words that each student needs to study, as illustrated by the graph below.



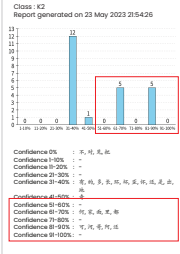
AI Chinese will periodically and systematically present these specific words to the specific student to review. This personalised system means each child will have his or her unique list of unfamiliar words to master through fun games.

Through repetition, over time, these words will be moved into a child's long-term memory. These reports show children improve their Chinese word recognition tremendously even at four years old. The report on the left is dated 7 June showing this child knows 12 words with a greater than 50% score. The report on the right is dated five months later showing the child now knows 106 words with a greater than 50% score.





Progress of a non-Chinese K2 (5 years old) child over 5 months.



Overall Status Report

Name :

Class : K2

Report generated on 23 May 2023 21:54:28

Confidence 0% : [illegible]
Confidence 1-10% : -
Confidence 11-20% : -
Confidence 21-30% : -
Confidence 31-40% : [illegible]
Confidence 41-50% : [illegible]
Confidence 51-60% : -
Confidence 61-70% : [illegible]
Confidence 71-80% : -
Confidence 81-90% : [illegible]
Confidence 91-100% : -

Overall Status Report

Name :

Class : K2

Report generated on 19 Oct 2023 18:03:18

Confidence 0% : [illegible]
Confidence 1-10% : -
Confidence 11-20% : -
Confidence 21-30% : -
Confidence 31-40% : [illegible]
Confidence 41-50% : [illegible]
Confidence 51-60% : [illegible]
Confidence 61-70% : [illegible]
Confidence 71-80% : [illegible]
Confidence 81-90% : [illegible]
Confidence 91-100% : [illegible]

With AI Chinese, children will have a head start and can master more than 50% of the Singapore Primary 1 Chinese vocabulary while having fun. The advantage of AI Chinese is that parents and teachers know exactly what words each child knows.

English

All pre-schools teach phonics and reading. At ChildFirst, we go beyond the basics. We want pre-schoolers to do more than be able to read. In our Literature Alive Curriculum, we cultivate a deep appreciation for the English language and ignite creativity and self-expression in children. We introduce them to different genres of literature and nurture literary growth with enriching vocabulary and different language skills. As we explore beloved classics by famous authors, we encourage creative writing, thoughtful reflections, dynamic discussions and imaginative role-play.

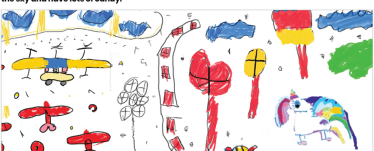
As children progress through K2, we also expose them to a diverse range of poetic styles and provide opportunities for them to write poetry. This further immerses children in language exploration and creative expression. As they are exposed to these forms of literature, children get to explore new worlds, encounter extraordinary creatures and embark on thrilling adventures - all of which stimulate the imagination and foster a sense of wonder and curiosity.

Furthermore, instead of just reading stories written by others, our children are creating original stories using generative AI tools such as ChatGPT and DALL-E (a picture-generating AI) to produce stories complete with illustrations. Our children are leveraging the use of AI to unleash their creativity and develop their higher-order cognitive skills to prepare them for the future of school and work.

Children worked as a small group, using ChatGPT, to produce this story. They took turns writing the story on alternate pages. The storyline on page one was written by ChatGPT, using the text prompt listed in the lower left-hand corner. Based on the storyline, children drew some of the items such as flying cars, candies, and a unicorn. Children also used DALL-E to help them complete the illustration in the middle of the page with the prompt in the lower right-hand corner.

Storyline by ChatGPT:

In the future, robots will fly cars and everyone will have a pet unicorn. We will live in a big city in the sky and have lots of candy.



Text prompt by children in ChatGPT:

Start a story about how the future will be like, in two sentences, created by 5-year-old child.

Drawn by children:

Background by DALL-E using the text prompt:

Future city with robots flying cars. We will live in a big city and have lots of candy. Unicorn, sky with lots of candy.

The story has many pages but I would like to highlight one of the pages written by children here.

> *"There will be five seasons in the future.*
> *Summer, spring, autumn, winter and candy seasons!"*

How creative!

Instead of worrying about generative AI taking away our creativity, we can see that it can actually enhance it through human-AI collaboration. Our children have also used DALL-E to imagine the future of Singapore.

Click to view.

In the process of doing these projects, we realised that it is difficult for young children to use ChatGPT because it requires typing and spelling. As a result, we built Edno.ai, our version of ChatGPT that incorporates interaction through speech. To ensure responses are age-appropriate, we also limit the age selection up to 7 years old. You can access it through:

Click to view.

Maths

At ChildFirst, we also make maths practice fun with AI Maths, which serves as the children's personal tutor, helping to pinpoint specific areas that require further practice and study. Games make studying even more fun.

Direct School Admission (DSA)

Worried about the Primary School Leaving Examination (PSLE)? Do you know that your child can be admitted to a secondary school purely based on his or her talents? DSA allows P6 students to apply to some secondary schools before taking the PSLE. P6 students can apply for DSA-Sec based on a wide range of talents, including:

- Science, mathematics and engineering
- Sports and games
- Visual, literary and performing arts
- Debate and public speaking
- Languages and humanities
- Uniformed groups
- Leadership

Even though MOE schools' Co-Curricular Activities (CCA) are supposed to be interest-based and develop your child's talents, the reality is many popular CCAs have long waiting lists, and selection is now based on competency in the CCA area.

Starting your child young in coding, robotics, and AI may help to develop his or her interest early and give your child an edge in CCA selection and DSA later in science, mathematics, and engineering.

Furthermore, as we shall see later in the section on Multiple Intelligences, at ChildFirst, we also provide opportunities to help your child discover other talents early so they can be nurtured. Keeping your options open is a good strategy for an unknown future. At ChildFirst, we help to keep your child's options open.

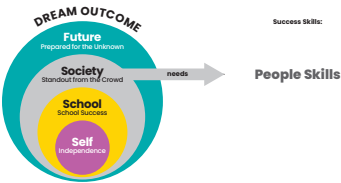
Key Takeaways

1. Early childhood is a critical period for learning, especially for languages like Chinese, due to the brain's "use it or lose it" nature and synaptic pruning process.
2. Using AI-driven educational tools like AI Chinese and AI Maths during pre-school years can deliver personalised learning experiences and provide clear insights into your child's progress.
3. Introducing your child to advanced topics such as coding at a young age can set a foundation for future academic opportunities, potentially leading to direct admissions to secondary schools without worrying about the PSLE.

Reflections

1. Do you realise that your child's early exposure to their mother tongue could make learning Chinese much easier in primary school?
2. Are you aware that AI technology can now provide personalised learning experiences tailored specifically for your child?
3. Would you like to give your child the opportunity to secure direct admission to secondary schools, bypassing the traditional PSLE requirements?

Chapter 4
People Skills



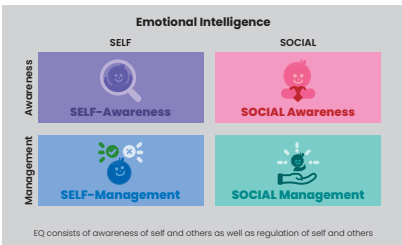
My Story Continues

Growing up and throughout my academic journey, including my time at Harvard, I was deeply focused on academics, often overlooking the value of practical life skills.

It wasn't until I entered the workforce, started my own business, and began managing teams that I truly understood the importance of people skills. These skills, which include empathy, effective communication, and the ability to foster positive relationships, became crucial in my interactions and business dealings, especially in cultures where personal connections, like "guanxi" in China, are vital. My experiences taught me to value and improve my listening skills, taking into account others' insights and perspectives.

Furthermore, in the future, when much of our cognitive skills can be delegated to AI, our people skills become even more important. For this reason, our ChildFirst curriculum emphasises the cultivation of people skills as we will see in this chapter.

Nurture Emotional Quotient (EQ)



Emotional intelligence (EQ) is the ability to understand and manage our emotions and those of others. It involves self-awareness, self-regulation, social awareness, and relationship management. EQ is crucial because it helps us navigate social complexities, lead effectively, and maintain healthy relationships. In the realm of business and personal interactions, emotional responses often have a greater impact than logical arguments. Recognising the importance of EQ, our curriculum at ChildFirst is designed to enhance these skills through engaging stories, social activities, teacher modeling, and involvement in charitable efforts.

Develop Executive Function (EF)

Executive function (EF) refers to a set of cognitive processes that regulate our thoughts and actions, enabling goal-directed behaviour. These include skills like self-control, working memory (holding information in mind for short periods), mental flexibility (adapting to new information), focused attention, and planning. EF is critical for academic success and daily life management.

- **Self-Control**

  One key component of EF is self-control, which is the ability to regulate our impulses and delay gratification for long-term gains. The famous Marshmallow Test by Stanford University psychologist Walter Mischel demonstrated this: children who could resist eating a marshmallow immediately in favour of getting two marshmallows 15 minutes later showed better life outcomes in adulthood, including higher academic scores, healthier lifestyles, and greater wealth. This illustrates the profound impact of self-control on future success.

  This is not difficult to understand.

  
  CLICK TO VIEW

  Children with better self-control, such as studying first and playing after, achieve better academic outcomes, secure higher-paying jobs, save and invest more, and become wealthier.

  Children with better self-control, eat more nutritious food, consume less junk food, drink less, exercise more, and become healthier.

  Because children with better self-control become healthier and wealthier, they are also more satisfied with life.

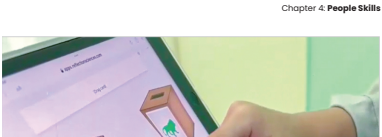
- **EF Assessment**

  Appropriate development of Executive Functions (EF), including self-control, focused attention, and working memory, is crucial for children's readiness to learn. Challenges in EF are linked to various conditions like ADHD and autism, but the good news is that EF skills can be enhanced through targeted practice and supportive environments.

  I possess good EF and self-control, therefore I successfully delayed gratification to pursue my Ph.D., which took 6 years. Hence, I never suspected that my son would have ADHD. He was only diagnosed in primary 5 when one of his teachers raised this possibility.

  Therefore, at ChildFirst, we are doing EF assessment for early screening and early intervention.

  One of the assessment tests asks children to sort items by shapes or colours. For example, a child may be given an orange lion card and asked to match only the shape. He must learn to ignore the colour and focus on the shape, which requires self-control.



It is harder than you think when you watch this video.

Click to view

Due to its importance, EF training and assessments are regularly conducted at ChildFirst. The assessment screens children to ensure they have the basic EF skills in place and are ready to learn. If not, it allows more time for early intervention.

Character Development

We believe in cultivating not just academic readiness but also essential life skills, good habits and moral values that form the foundation for success and happiness in life. Our character development curriculum is infused with core values such as empathy, respect, kindness, courage, resilience, honesty and an appreciation for differences as they embrace their own uniqueness and individuality. Through a blend of interactive activities and meaningful experiences such as stories, songs, games and role-playing, the children learn to understand, internalise and practise these values in their daily lives.

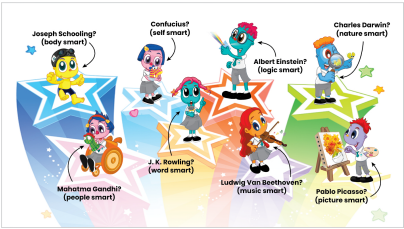
The development of good habits is fostered from toddler age to set a strong foundation, as learning and reinforcing of habits consistently become ingrained over time. Through positive social skill development, the children learn how to cooperate, share, take turns, and eventually learn to resolve conflicts peacefully.

Talent Discovery

Nurturing children's natural abilities during early sensitivity periods is crucial for their full development. It's not always easy to identify a child's talents, but exposing him or her to a variety of experiences can help. The Theory of Multiple Intelligences by Harvard University Professor Howard Gardner highlights the diversity in human intelligence, ranging from linguistic (word smart) to interpersonal (people smart) skills. Our curriculum incorporates activities across these intelligences to help children discover and grow their unique talents.

It's beneficial for children to explore various interests, even if they move on from one to another. This exploration is key to finding a passion they're willing to invest in. Given the future importance of soft skills and individual talents, early years are the best time for development, before the pressures of academic life increase. This approach allows children to develop a well-rounded set of skills and interests, laying a strong foundation for their future.

Click to view



Our ChildFirst Multiple Intelligences Personalised Series (MIPS) Talent Discovery offers your child the unique opportunity to experience a different enrichment programme every term or semester and discover his or her passions and talents. Since we cannot be the jack of all trades, vendors have been specially selected based on their expertise, track records, and their programme content to ensure that your child will have a variety of exposures and experiences during the year.

The added advantage is that this will save you precious time to ferry your child to enrichment classes on weekends.

I chanced upon my first passion when I was 13 years old while browsing library books. I was fascinated by a book on Project Apollo to send men to the moon. The book was in English and at that time I was still in Hong Kong with very limited English language ability. Yet, that did not stop me from finding out everything about how a rocket works and how to send men to the moon. Because of this, I wanted to study aerospace engineering. Since my college did not offer this subject, I majored in physics instead. From my own experience, I strongly believe in exposing children to different things to hopefully help them find their passion. Believe me, when you find your passion, it really drives you.

I was hit by another passion in 2018. This time it was AI. This was way before ChatGPT's debut in Nov 2022. I was so intrigued by AI that I attended a course on it in 2019. Then, in 2021, during COVID, I attended a Deep Learning Coursera online course, taught by the legendary Stanford AI guru, Professor Andrew Ng.

coursera

5 Courses

Neural Networks and Deep Learning

Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization

Structuring Machine Learning Projects

Convolutional Neural Networks

Sequence Models

May 16, 2021

Richard Tsan Kwong Yen

has successfully completed the online, non-credit Specialization

Deep Learning

Congratulations! You have completed all 5 courses of the Deep Learning Specialization. In this Specialization, you built neural network architectures such as Convolutional Neural Networks, Recurrent Neural Networks, LSTMs, Transformers, and learned how to make them better with strategies such as Dropout, BatchNorm, and Xavier/He initialization. You mastered these theoretical concepts, learned their industry applications using Python and TensorFlow, and tackled real-world cases such as speech recognition, music synthesis, chatbots, machine translation, natural language processing, and more. You are now familiar with the capabilities and challenges of deep learning. You are ready to take the definitive step in the world of AI and participate in the development of leading-edge technology.

This online specialization carried a fee comparable to a course from a campus, but the included course content equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

Andrew Ng,
Founder,
DeepLearning.AI

Kian Katanforoosh
Co-founder, Workera

Younes Bensouda Mourri
Instructor of AI,
Stanford University

Verify this certificate at:
coursera.org/verify/specialization/QRQHA9DCU975

This passion resulted in our development of AI Chinese, AI Maths, and AI English, all of which are now being used at ChildFirst. We also developed AI Oral Chinese with more to come.

My firsthand experience again shows the importance of finding your passion and developing your talent. This can really make a difference.

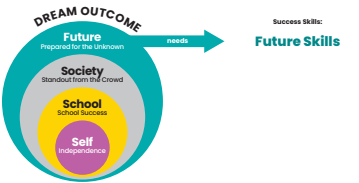
Key Takeaways

1. In the age of AI, it's more important than ever to help your child develop people skills. ChildFirst helps to foster skills such as emotional intelligence, strong character, and creativity from an early age; these uniquely human attributes are less likely to be replicated by machines.
2. Cultivating self-control is essential for a child's long-term well-being and success. We live in a world of instant gratification, making it even more important to help your child develop self-control at an early age. This effort is supported by ChildFirst's Executive Function (EF) assessments, which deliver effective learning and intervention strategies.
3. Early childhood is the optimal time for exploration and enrichment, allowing your child to uncover his or her passions and talents before the onset of academic pressures.

Reflections

1. As AI continues to infiltrate the world, the value of people skills such as empathy, communication, and collaboration will increase. Reflect on whether you're balancing your child's development in both academic and interpersonal skills.
2. In a culture of instant gratification, fostering self-control and the ability to delay gratification is crucial for your child's success. Consider how often you try to immediately fulfill your child's desires.
3. Is your child ready to learn? Assessing your child's readiness through an Executive Function (EF) evaluation can offer insights into his or her learning potential and suggest any necessary interventions.

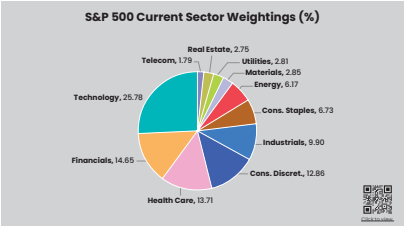
Chapter 5
Future Skills



My Story Continues

I had the opportunity to work in Silicon Valley, the high-tech mecca. I worked at both a startup and also for a corporate venture capital firm. I saw both failures and successes on the Nasdaq. Here are a few valuable lessons I learnt:

For one, I realised how important tech is. The S&P 500 currently allocates 25.78% of its weight to tech stocks, more than financial services, health care, and any other sector. In fact, today, all businesses are technology-dependent. We simply cannot ignore tech. Eight out of top ten billionaires in the world are tech founders. These percentages will only increase in the future.



I studied, lived, and worked in the U.S. for 14 years, and I still visit every year. I have seen the decline of America. However, it is still the number one economy despite all its problems because it is leading the world in tech and innovation. If tech and innovation are so important for the number one economy, it cannot be less important for your child and your child's future.

Another thing that struck me is the importance of early exposure to tech. Bill Gates, Steve Jobs, Elon Musk, Sam Altman, and many successful tech entrepreneurs had early exposure to technology.

Because of synaptic pruning, exposing your child early to tech gives your child many advantages. Do you want to keep the option open for your child to build the next tech unicorn?

What are Future Skills?

Even though your child is only at pre-school age, your decision today may have long-term implications for future school success and even in his or her career.

- **Future Professional Success**
  Because of the rapid advances in technology, in particular the development of AI, many careers will be radically transformed. Understanding how they will be transformed is crucial to future-proof our children. Some significant examples illustrate the evolving role of AI in various fields:

Legal Domain

AI is poised to transform tasks like drafting contracts and streamlining legal processes for efficiency. However, humans will continue to add substantial value through skills such as negotiation, consensus facilitation, and nuanced application of legal principles. AI streamlines tasks but doesn't replace human expertise in consensus building, complex decision-making, and ethical considerations.

While AI can draft contracts, lawyers with the people skills to bring two opposing sides to negotiate a win-win deal will always be valued at a premium.

Medicine

In the field of medicine, AI is becoming an essential tool for precise diagnostics, enhancing healthcare outcomes. Nevertheless, the indispensable human touch, encompassing empathy, encouragement, and guiding patients through emotional and psychological challenges, remains irreplaceable. Medical professionals will increasingly focus on building patient relationships and providing emotional support, preserving the human dimension of healthcare.

While AI can diagnose better than humans, doctors with bedside manners to empathise, comfort, and encourage patients and their families will be highly sought after.

Entrepreneurship

Most valuable companies today are started by entrepreneurs such as Bill Gates, Steve Jobs, Elon Musk, Sam Altman, and many others. Most of them had early exposure to technology. Exposing your child early to coding, robotics, and AI can give them an advantage.

However, as I have mentioned from my own experience, technology alone is not sufficient; it must be combined with human ingenuity and leadership to create the next tech giant. To be successful, technology must be combined with human touch.

In the future, all professions must embrace technology, and at the same time, be more human to stand out from AI. We have already covered the people skills part in Chapter 3, let us now embrace technology.

Coding and Robotics

A particularly intriguing facet of ChildFirst is that we encourage our children to use code to control a robot, where the robot assumes the role of the student. In this scenario, the child becomes the instructor, guiding the robot through coding instructions. This interactive process not only introduces children to the principles of computational thinking but also encourages logical reasoning and systematic problem-solving. Coding becomes a dynamic platform for young learners, offering a rare opportunity for them to direct and command—a source of great excitement for children.

This CNA episode on Becoming Human contains a segment featuring ChildFirst, which can give you a sense of our coding and robotics curriculum.

CNA Becoming Human video (3-minute segment starts at 43:57)

Click to view

At ChildFirst, we offer coding as an integral part of our curriculum. In addition, we go beyond the basics:

- **Specialist Teachers**
  In Singapore, all pre-school teachers must have at least a Diploma in Early Childhood Education to teach. Therefore, they are all well-versed in common pre-school subjects. However, coding is not a common pre-school subject.

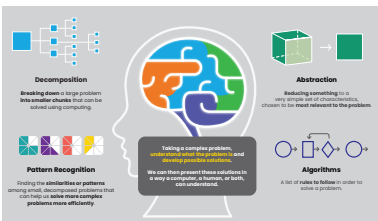
  Hence, at ChildFirst, we train our pre-school teachers to teach simple coding and robotics and employ specialist teachers to conduct advanced coding and robotics lessons for our children.

- **Practise EQ and EF Through Coding and Robotics Projects**
  In addition to nurturing people skills such as EQ and developing EF, we also integrate their practice into our projects. A notable example is our "robot dance" as shown in the CNA episode on Becoming Human (link above), which can give you a sense, a creative endeavour that goes beyond coding skills. The dance project serves as a conduit for learning fundamental people skills—collaboration, trial and error, and perseverance. More importantly, the project exposes children to the realities of both failure and success, fostering both resilience and adaptability.

  The robot dance, although a means to an end for a performance at the year-end concert, becomes a powerful vehicle for deeper learning. In the process of creating and executing the dance, children undergo a transformative journey, evolving into more empathetic, collaborative, and resilient individuals—attributes that are indispensable in navigating the complexities of human interactions.

At ChildFirst, the synthesis of technical skills and people skills in our curriculum ensures that our children not only excel in the technical realm but also emerge as well-rounded individuals, equipped with the essential human qualities that define our shared humanity.

- **Computational Thinking**



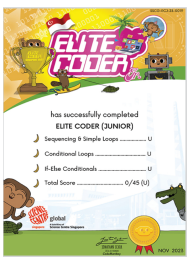
Computational Thinking is a way of logically and systematically solving complex problems by following the steps of decomposition, abstraction, pattern recognition, and algorithms. In this "robot dance" video, you can see the application of computational thinking at work, which eventually produces the complex but beautifully choreographed robot dance.

Code.org

- **Game Design**

Instead of playing computer games, children learn to design simple 2D and 3D computer games. In the process, he or she will learn about design and coding.

- **Coding skills certified by the Singapore Science Centre**
  To ensure our children achieve recognisable coding skills, all our K2 children will undergo certification by the Singapore Science Centre. On successful completion of the assessment, they will receive a Coding Certificate issued by the Science Centre.



- **ChildFirst Pre-school Robotics & Coding Championship**

  As mentioned above, our coding and robotics curriculum and projects not only develop children's coding abilities, but also teamwork, communication, problem-solving skills, and perseverance. It also allows them to experience failure and success. These are all important future skills. To further enhance such skills, we conduct the ChildFirst Pre-school Robotics & Coding Championship annually.

CLICK TO VIEW

- **National Robotics Competition (NRC)**

  Our children participate in the National Robotics Competition (NRC) organised by the Science Centre annually.

In the most recent 2023 NRC, our ChildFirst teams won 6 out of 9 awards and were declared the overall winner for the pre-school category.

Direct School Admission (DSA)

As presented earlier, even though MOE schools' Co-Curricular Activities (CCA) are supposed to be interest-based, the reality is many popular CCAs have long waiting lists, and selection is based on competency in the CCA area. Starting your child young in coding, robotics, and AI may help to develop his or her interest early and give your child an edge in CCA selection and Direct School Admission (DSA) later.

Entrepreneurship

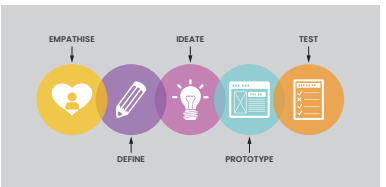
Entrepreneurship is now a more accepted career path. In fact, eight out of top ten billionaires in the world are tech founders. Is entrepreneurship nature or nurture? From my own experience, it is both.

I never dreamt of becoming an entrepreneur. It was only during my Silicon Valley years that I was exposed to it and was "bitten by the entrepreneurial bug" as they call it. In my case, it was the naivety of not realising how much hard work is involved fueled by the excitement of a startup that propelled me to do it. The rest is just on-the-job learning.

Entrepreneurship is partly nature as I now realise that guts, tenacity, and perseverance are perhaps the most important ingredients of an entrepreneur. You need guts to stomach the unknowns. You need tenacity and perseverance to deal with the many failures along the way.

Entrepreneurship is partly nurtured as there are processes that can be taught and learnt. A well-known process is design thinking from Stanford University.

- **Design Thinking**



At ChildFirst, we promote entrepreneurship through Design Thinking and Projects.

Teaching entrepreneurship to pre-schoolers may not seem conventional but it goes beyond just preparing them to start their own businesses. It equips them with valuable skills, mindset and attitudes that will serve them well throughout their lives, fostering independence, creativity, resilience and a proactive approach to pursuing their goals.

We introduce concepts through the basic principles of design thinking, which is a human-centred approach to innovation. Through a simplified framework tailored to their developmental stage, the children learn to empathise with others, define problems, ideate solutions, prototype ideas and test their creations. In doing so, we empower them to become creative problem-solvers, innovators and changemakers in our rapidly evolving world.

By identifying problems, brainstorming solutions and testing prototypes, the children learn to approach challenges with creativity, critical thinking and collaboration. They are encouraged to explore, experiment and unleash their creativity through open-ended projects. Whether it's designing a new toy or creating a solution to reduce waste, the children engage in meaningful hands-on activities that ignite their passion for innovation.

We encourage them to think outside the box and embrace unconventional ideas, fostering traits such as curiosity, resilience, resourcefulness and adaptability. Through these age-appropriate exercises, they also learn to embrace challenges as opportunities,

We celebrate every child's achievements and encourage a growth mindset where mistakes are viewed as opportunities for learning and growth. Whether it's presenting their ideas to peers, showcasing their prototypes or reflecting on their experiences, children gain confidence in their abilities and develop a sense of pride in their accomplishments.

Key Takeaways

1. Technology literacy is a critical skill for future success. Early exposure can set the foundation for tech fluency, as demonstrated by the early experiences of tech luminaries like Bill Gates and Elon Musk.
2. The ChildFirst Future Skills curriculum is designed to demystify complex concepts such as coding, robotics, and AI, making them accessible and engaging for pre-schoolers. This then fosters a natural comfort level for these subjects at an early age.
3 Encouraging entrepreneurship is integral to the ChildFirst approach. We develop these skills through proven methodologies like Design Thinking from Stanford University, used by many of the world's leading tech entrepreneurs.

Reflections

1. Considering the pervasive nature of technology in just about every profession, do you believe that being fluent in technology from a young age will provide your child with a significant advantage in the future?
2. Would you like to foster the skills that may help your child identify and seize opportunities to become a pioneer in technology later in life, possibly even founding the next groundbreaking tech startup?

Chapter 6
Future-Proof Your Child

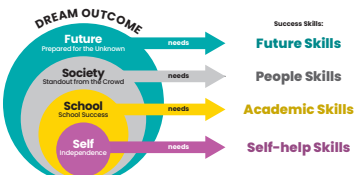
Value of the Dream Outcome

All credible pre-schools should prepare children well for the ABCs of early childhood education. At ChildFirst, we believe that in this rapidly changing world, the basic ABCs are insufficient to prepare them for their future.

Because of the way the brain works, it is essential to start early to take full advantage of the sensitivity periods.

AI will exceed human capabilities in many cognitive areas and will become an indispensable tool for all professionals such as doctors, lawyers, and entrepreneurs. However, no AI can replace the human touch and people skills, which will be at a premium.

Therefore, our approach is four-pronged to deliver the dream outcome for your child:



We can also summarise our approach as a

Tri-intelligence Curriculum

Conducted in a

Trilingual Environment

While no one can predict the future, we can work together to Future Proof Your Child both professionally and academically.

I am using my life experience to educate and prepare my children for their future. If you agree with our approach, then let us join hands.

Together, let us achieve the dream outcome. The sooner your child starts, the better the outcome. Its value to your child's future is priceless!

Click to view

CNN Tomorrow Transformed (ChildFirst segment starts at 2:57)

Click to view

Key Takeaways

1. At ChildFirst, our pre-school education is not just a curriculum; it's a dream outcome we aspire to achieve for every child.
2. Though the future is unpredictable, our comprehensive approach focuses on academic proficiency, interpersonal skills, and forward-thinking capabilities. It is designed to equip your child for success in any scenario.
3. Realising this vision requires a collaborative effort; we partner with parents who share our commitment to unlocking a world of academic and professional opportunities for their children.

Reflections

1. Do our aspirations for your child's future resonate with your own dreams for them?
2. Do you believe that nurturing your child with a blend of academic knowledge, interpersonal abilities, and skills for the future will set a solid foundation for their life?

ChildFirst
才儿坊

www.ChildFirst.com.sg

202404