

热点新闻 Hot News



报道 ■ 许淑美 摄影 ■ 李欣赏 (部分照片受访者提供)

年仅7岁考获“O”水准化学文凭的男童艾南、10岁举行第一场独奏会的钢琴神童洗思恩(15岁)、在14岁时以“历来年纪最小学生”的身份进入美国耶鲁大学(Yale University)的小提琴家李慧铭……。

这个年代，拥有特殊才华或超群智慧的“天才”(genius)虽然不多见，但已绝非罕见。然而，天才究竟是如何产生的？是先天条件，还是后天训练促成的？天才的脑部与一般人的，是否有不同？随着教育的普及、各种脑部训练方法的出现，以及家长更加重视栽培孩子，一个孩子要成为天才，是不是更容易了？

今天《我报》就带你剖析这些问题。

天才儿童 还需后天培育成材？



熊宏峻从小就喜欢跟数字打交道。有段时期他天天翻日历，只要别人说出一个日期，他就能正确说出那是星期几。

她家的天才儿童 认数字比说话早

今年5岁的熊宏峻2岁时还不会说话，却已能认出数字1到20。他的母亲蔡美美(38岁，家庭主妇)意识到3岁以前是幼童右脑开发的黄金时期，所以在儿子两岁半时，带他到“七田式儿童潜力培训机构”(The Shichida Method)接受右脑培训。宏峻果真展露数学天分，他心算的速度在七田班上为数一数二的，而且他还有过目不忘的超强记忆力。

他4岁时随妈妈逛书局，竟要求妈妈买一本街道指南给他。之后他每天把街道指南当故事书来看，结果没多久就对地铁路线了如指掌。不仅如此，当美美念出一个路名时，宏峻不用查检索目录就能直接翻到显示该路段的地图，令蔡美美惊叹不已。

“宏峻从小就喜欢跟数字打交道。有段时期他天天翻日历，后来我们发现，只要我们说出一个日期，他就能正确说出那是星期几。”

妈妈：环境对孩子的成长很重要

记者和宏峻见面时，表示要跟他玩游戏。当他见到记者手里拿着一张数学习题，双眼立刻亮了起来，完成第一张习题后还跟记者要更多题目来做。蔡美美透露，宏峻3岁半时自发地跟她



熊宏峻的母亲蔡美美觉得，成就天才要有先天和后天两方面的条件。

要数学习题作业(worksheet)，而且一做便是几个小时。她见儿子这么乐在其中，于是在今年6月带他到Kumon学习中心上数学课。

宏峻比其他小朋友聪明，学习速度也很快，至于他是否是个天才，蔡美美认为“还言之过早”。

儿子聪颖过人，这是先天还是后天培育的结果？蔡美美说：“我觉得这是先天和后天两方面，不过后天的培育扮演更重要的角色。环境对孩子的成长很重要，身为父母的我们，当然会尽最大的努力给孩子一个良好的成长和学习环境。”

天才脑部结构与众不同

天才是否一生下来就聪颖过人，或是靠后天培育而成才？这个问题长久以来备受争论，至今仍没有确切的结论。但有专家从脑部结构的研究指出，天才的脑部结构的确与众不同。

研究天才儿童长达15年的美国波士顿学院(Boston College)心理学家Ellen Winner教授认为，天才儿童一出生就比别人“多出某样东西”。她在National Geographic Channel“My Brilliant Brain”节目中指出，拥有特殊音乐天赋的儿童，“头脑的结构与其他儿童不一样”。

节目介绍了8岁美国华裔钢琴神童余峻承(Marc Yu)。Marc 2岁时听到“Mary Had a Little Lamb”这首曲子后，竟走到钢琴前，无师自通地把该曲子完整地弹奏出来，并在3岁第一次公开演奏。

Winner教授以Marc Yu为例指出，她并不认为任何一个3岁儿童能像Marc一样有过人的音乐天赋，即使他们接受和Marc相同的训练。她说：“我不认为你可以随意把一个孩子变成神童。”

科学家：后天培育能刺激儿童脑部

美国脑神经科学家(neuroscientist)Gottfried Schlaug也曾对专业音乐家的脑部进行扫描，发现他们的小脑(cerebellum)和胼胝体(corpus callosum)比常人来得大。

他和Winner教授对50个正在学音乐的儿童进行研究，结果显示这些儿童在接触音乐前到学音乐一年之后，脑部出现明显的变化：负责聆听和分析音乐的脑部位，比没有学音乐的儿童更活跃。

也就是说，除了天生的脑部结构，后天的培育与熏陶，也能刺激儿童脑部出现变化。

另一方面，澳洲墨尔本大学(Melbourne University)心理学家Michael O'Boyle曾对36名拥有超强数学能力的儿童进行脑部fMRI扫描(Functional magnetic resonance imaging)，并发现他们的右脑比普通儿童多出约七倍的代谢活动(metabolic activity)。此外，他们脑部的额叶(frontal lobe)也相当活跃，而普通儿童的额叶则几乎毫无活动。

O'Boyle认为这显示数学神童不只有更高的右脑处理能力，而且这个能力经由脑前部位的调整，增强了儿童的集中力。

天才对符号特别敏感

新加坡国立教育学院(NIE)幼儿与特殊教育部门主任Susan Wright副教授接受《我报》访问时指出，很多研究天才儿童的人发现，天才儿童一般是在数学、音乐或象棋等方面展现特殊的才华。

“这主要是因为这些领域都有一套符号(symbols)和实在的规则，让天才儿童能轻易地学习和掌握。”

NIE教育专家：疯狂求知欲是前进推动力

她说：“很多人都说天才必须有天生的智慧，但或许我们可以这么说，天才都有疯狂的求知欲(rage to learn)。但天生的智慧与求知欲这两个因素通常还不足以造就天才，家人和教师的支持，以及孩子的成长环境，都扮演重要的角色。”

Dr Wright指出，天才儿童有非常大的动力(motivation)，而且把很多热忱投入其中。他们很会推动自己，他们的共同点是有强烈的掌握与精通某种事物的欲望。

的确，天才儿童的世界仿佛只有他们喜爱和擅长的东西。Marc的母亲Chloe就说，当Marc爱上某一首曲子时，“那首曲子不断萦绕在他脑海里，他甚至半夜醒来，问我不能练琴”。

后天培训 能引发无限潜能

本地“七田式儿童潜力培训机构”校长吴慧卿接受《我报》访问时则表示，婴儿出生时都是天才，具有无限的天分和潜能，不过很多父母不知道如何把孩子的能力引发出来，所以孩子必要经过后天的专门培训才能成为天才。

该校以日本教育专家七田真博士的七田式教育为基础，提供3个月以上的孩子全脑开发的培训。课程内容包括图像记忆、听觉记忆、五感协调、语音训练、语言表达等，并鼓励家长和孩子一起上课。学校从2001年开设至今已培育了约10,000名学生。

日本教育专家：0到3岁是右脑教育黄金期

七田真博士认为，右脑具有高速并大量记忆的能力，并主张把右脑训练用在幼儿教育上，通过图像、联想、配对等方法增进儿童的智能。他表示，孩子在0到3岁时，是右脑教育的黄金期。

不过Dr Wright强调，尽管儿童可经由训练增强某方面的能力，但他们还是必须具备先天的智慧或才华。“比如说，如果你想成为专业的运动员，却没有适合的体质，无论你怎么练习，也是徒劳无功的。”



七田式儿童潜力培训机构校长吴慧卿认为，很多父母不知道如何把孩子的能力引发出来，所以孩子必要经过后天的专门培训才能成为天才。(受访者提供)

天才的IQ很普通

Dr Wright提醒，人们有时忘了天才只是个广泛的概念。她引述哈佛大学教育研究所(Harvard Graduate School of Education)Dr Howard Gardner的“多元智慧”(Multiple Intelligences)理论指出，智慧包含音乐、空间、语言、逻辑等方面。因此她认为，天才是在其中一个领域拥有极高能力的人。

她告诉记者，IQ测验虽然能评估一个人的智商水平，不过音乐、文学、舞蹈等才能是无法通过智商测验衡量的。“有很多证据显示，那些长大后有杰出表现的佼佼者，智商测验的成绩并不突出。”

天才儿童提早面对“中年危机”

音乐神童从小开始表演、比赛，小小年纪就表现到最高点，并成为众人的目光焦点所在。Dr Wright指出，当天才儿童到了18岁左右，由于不再被视为拥有特殊才能的小孩，使他们未到中年就经历所谓的“中年危机”(mid-life crisis)。

“由于他们不再是明星，所以可能会觉得自己是loser(输家)。他们通常会转向另一个完全不同的领域。”

不过Dr Wright认为，只要一个人能对他的专长持续持有强大的动力，即使他长大以后，还是可以做个优秀的音乐家。

看“My Brilliant Brain”探讨天才课题

National Geographic Channel(Starhub Channel 11)将从11月26日起，一连三个星期9pm播映“My Brilliant Brain”。节目透过三组天才，探讨有关人类智慧的各种课题。

在第一集亮相的音乐神童Marc Yu，将于本月20日首次在本地上演。想观赏他演奏的读者，请浏览www.ngcasia.com，赢取免费入场券。

in brief……

ARE child geniuses born special? Or do the circumstances they are born into make them special?

This particular debate has gone on for decades with no conclusion.

Boston College psychology professor Ellen Winner, who has studied child geniuses for close to 15 years, thinks that child prodigies are born with "something extra". She illustrated her point with the case of music prodigy Marc Yu.

When Marc was two, he played Mary Had A Little Lamb on the piano after listening once to it. Prof Winner pointed out that not many three-year-olds can duplicate Marc's feat. "It is not possible to make just any child a genius."

However, research that she conducted together with a United States neuroscientist also showed that music training triggered changes in children's brains.

Ms Jocelyn Khoo, the principal at a school that helps toddlers harvest their learning potential, believes that all babies are geniuses. "But, most parents have no idea how to harvest that potential."

Nicholas Yoong (right), five, is probably more fortunate than most children. His mother realised that the golden period to develop a child's brain is before three years old. She took Nicholas to Ms Khoo's school when he was two-and-a-half. Nicholas, who wasn't speaking when he was two, turned out to be gifted with numbers and mathematics, and has a photographic memory.



English Translation for the “Wo Bao” Feature on The Shichida Kid, Nicholas Yoong

The Genius At Home Recognizes Numbers Earlier Than Speaking

Nicholas Yoong, at five years old, was able to recognize numbers 1 to 20 when he wasn't speaking at two years old. His mother realized that the golden period to develop a child's brain is before three years old. She took Nicholas to attend The Shichida Method Programme when he was two-and-a-half. Nicholas turned out to be gifted with numbers and mathematics, and has a photographic memory.

When he was four, he asked mummy to buy him a road directory while visiting a bookstore one day. Since then, he read the road directory daily as though it is a story-book. He knows the name of every MRT station by heart after that; Nicholas is also able to turn to the page in the road directory that showed the map of the road right after his mummy said its name. He did not need to check the page number at all. Mummy is very amazed by his ability!

“Nicholas liked numbers a lot since young. There was a period of time when he likes to look at the calendar everyday. We discovered later on that when we said a date, he is able to say which day it is.”

From Mummy: The environment plays a very important role in the growth of a child

The reporter suggested playing games with him when she met up with Nicholas. When Nicholas saw the math matrix which the reporter brought along, his eyes glowed with light. He asked for more after he completed the first math matrix.

Mummy said when Nicholas was three-and-a-half, he asked to do math worksheets himself and he would immerse doing them for a few hours. When mummy saw her son enjoying math activities, she brought him to Kumon to attend math class in June this year.

Nicholas is smarter than his peers; his learning ability is fast. Mummy feels that it is too early to say whether Nicholas is a genius or not.

Does your son's inborn ability make him special? Or does the environment make him special? Mummy said, “I feel both play a part in it, but the environment plays a greater role. The environment plays a very important role in the growth of a child. As parents, we will do our very best to provide a good environment for Nicholas to grow and learn.”

The structure of a genius's brain is very different

Are child geniuses born special? Or do the circumstances they are born into make them special? This particular debate has gone on for decades with no conclusion.

Boston College psychology professor Ellen Winner, who has studied child geniuses for close to 15 years, thinks that child prodigies are born with “something extra”. She illustrated her point with the case of music prodigy Marc Yu.

When Marc was two, he played “Mary Had A Little Lamb” on the piano after listening once to it. Professor Winner pointed out that not many three-year-olds can duplicate Marc's feat. “It is not possible to make any child a genius.”

Scientist: The circumstances they are in can stimulate the child's brain

However, research that she conducted together with a United States neuroscientist, Gottfried Schlaug also showed that music training triggered changes in children's brains.

Geniuses are sensitive to symbols

According to Dr Susan Wright (NIE), from many researches, they showed that geniuses show special abilities in math, music or chess.

“This is because these areas have a set of symbols and standard rules that enabled the geniuses to learn and understand easily.”

NIE Educator: The rage to learn is a motivator

She also said that geniuses have the rage to learn. Dr Wright feels that other than having the innate ability and the rage to learn, the support from the family and teachers and the circumstance which the child is born into also play a vital role.

Dr Wright points out genius children have very great motivation. They are very self-motivated and they have great interest in gaining understanding and knowledge about certain thing.

The after-birth training can withdraw innate potential

Ms Jocelyn Khoo, the principal of The Shichida Method, helps toddlers harvest their learning potential, believes that all babies are geniuses. “But, most parents have no idea how to harvest that potential.’ So the children need to undergo professional after-birth training.

The centre is using the right-brain method derived by Professor Makoto Shichida to train the children. It provides whole-brain training for babies 3 months and above. The lesson includes Photographic Memory, Auditory Memory, Senses Play, etc, and it encourages parents to attend the class with their children. The school has trained about 10000 students since 2001.

Japanese Educator: 0-3 years old is the golden period to train the right brain

Professor Shichida believes that the right side of the brain possesses high-speed mass memorization function and he proposes applying the right-brain training on babies. The children will be stimulated through images, linking memory and matching, etc methods. He said 0-3 years old is the golden period to train the right brain.

However, Dr Wright stressed that although the child is able to strengthen certain ability through training, he/ she must possess the innate ability.

Do Geniuses have average IQ?

Dr Wright reminds, people tend to overlook that genius potential covers a wide range of areas. Importing Dr Howard Gardner's Multiple Intelligences, Dr Wright points out intelligence includes music, spatial, language, logic, etc. So she feels that a genius is a person who has high ability in one of the aspects.

She told the reporter that although IQ tests reveals a person's IQ level, it cannot measure music, philosophy, dancing, etc. “Many evidences showed that geniuses' IQ are not outstanding.”

Genius children face mid-life crisis earlier

Since young, music geniuses started to perform and participated in competitions. They showed their potential to the fullest and became the center of attraction. Dr Wright points out that when geniuses turn 18 plus, they are no longer considered as children with special ability, then they will face a ‘mid-life crisis’.

“As they are no longer stars, they will see themselves as losers. Usually, they will turn to other areas.”

But Dr Wright feels that if there is someone who can continue to motivate the child, even when the child grows up, he or she can still continue to be an outstanding musician.