



Test 3

passage 1

The concept of intelligence

智力的概念

A Looked at in one way, everyone knows what intelligence is; looked at in another way, no one does. In other words, people all have unconscious notions - known as 'implicit theories' - of intelligence, but no one knows for certain what it actually is. This chapter addresses how people conceptualize intelligence, whatever it may actually be.

But why should we even care what people think intelligence is, as opposed only to valuing whatever it actually is? There are at least four reasons people's conceptions of intelligence matter.

A 当以某种方式审视智力时，每个人都知道它是什么；而以另一种方式审视时，却没有人知道。换言之，每个人对智力都有自己潜意识的界定，这被称为“内隐理论”，但没有人确切地知道智力到底是什么。无论智力实际上是什么，这一章会解决人们给智力下定义的问题。但是我们为什么要关注人们如何理解智力，而不是仅仅评价智力实际上是什么？至少有四个理由可以说明人们对智力的理解非常重要。

B First, implicit theories of intelligence drive the way in which people perceive and evaluate their own intelligence and that of others. To better understand the judgments people make about their own and others' abilities, it is useful to learn about people's implicit theories. For example, parents' implicit theories of their children's language development will determine at what ages they will be willing to make various corrections in their children's speech. More generally, parents' implicit theories of intelligence will determine at what ages they believe their



children are ready to perform various cognitive tasks. Job interviewers will make hiring decisions on the basis of their implicit theories of intelligence. People will decide who to be friends with on the basis of such theories. In sum, knowledge about implicit theories of intelligence is important because this knowledge is so often used by people to make judgments in the course of their everyday lives.

B 首先，智力的内隐理论影响人们理解和评价自身及其他人的智力。为了更好地理解人们对自身和其他人能力的判断，了解人们的内隐理论十分有帮助。例如，父母关于孩子语言发展的内隐理论会决定他们将在什么时候对孩子的言语做出各种各样的纠正。而更普遍的是，父母关于智力的内隐理论将决定他们会在什么时候相信孩子已经能够处理各种各样的认知任务。职业面试官会基于他们关于智力的内隐理论做出招聘决定。人们会基于这种理论决定与谁交朋友。总之，理解有关智力的内隐理论非常重要，因为在每天的生活中，人们常常通过这样的理解做出判断。

C Second, the implicit theories of scientific investigators ultimately give rise to their explicit theories. Thus it is useful to find out what these implicit theories are. Implicit theories provide a framework that is useful in defining the general scope of a phenomenon - especially a not-well-understood phenomenon. These implicit theories can suggest what aspects of the phenomenon have been more or less attended to in previous investigations.

C 第二，科学研究者的内隐理论最终会带来他们的外显理论。因此研究这些内隐理论是什么非常有用。内隐理论提供了一种框架，这种框架对定义某一现象的广义范畴非常有用，尤其是对尚未被充分理解的现象。这些内隐理论可以提示这一现象的哪些方面曾经在过去的研究中被或多或少地关注过。

D Third, implicit theories can be useful when an investigator suspects that existing explicit theories are wrong or misleading. If an investigation of implicit theories reveals little correspondence between the extant implicit and explicit theories, the implicit theories may be wrong. But the possibility also needs to be taken into



account that the explicit theories are wrong and in need of correction or supplementation. For example, some implicit theories of intelligence suggest the need for expansion of some of our explicit theories of the construct.

D 第三，当一名研究者怀疑现存的外显理论有误或存在误导时，内隐理论会非常有用。如果关于内隐理论的研究无法揭示现有的内隐和外显理论间的一致性，那么内隐理论可能存在问题。但是也需要考虑“外显理论存在错误或者需要纠正、补充”的可能性。例如，一些关于智力的内隐理论表明我们需要扩展有关其构造的某些外显理论。

E Finally, understanding implicit theories of intelligence can help elucidate developmental and cross-cultural differences. As mentioned earlier, people have expectations for intellectual performances that differ for children of different ages. How these expectations differ is in part a function of culture. For example, expectations for children who participate in Western-style schooling are almost certain to be different from those for children who do not participate in such schooling.

E 最后，理解关于智力的内隐理论有助于解释发展差异和跨文化差异。正如之前提到的，人们期望不同年龄的儿童有不同的智力表现。这种期望的差异在一定程度上是文化造成的。例如，对接受西式教育儿童的期望几乎必然不同于那些没有接受这类教育的儿童。

F I have suggested that there are three major implicit theories of how intelligence relates to society as a whole (Sternberg, 1997). These might be called Hamiltonian, Jeffersonian, and Jacksonian. These views are not based strictly, but rather, loosely, on the philosophies of Alexander Hamilton, Thomas Jefferson, and Andrew Jackson, three great statesmen in the history of the United States.

F 我曾指出有三种主要的内隐理论，它们主要探讨智力与作为一个整体的社会之间的关系 (Sternberg, 1997)。这些理论或许可以被称为 Hamiltonian、Jeffersonian 和 Jacksonian。这些观点并非完全基于 Alexander Hamilton, Thomas Jefferson 和 Andrew Jackson 这三



位美国历史上伟大政治家的思想，但是在一定程度上与之相关。

G The Hamiltonian view, which is similar to the Platonic view, is that people are born with different levels of intelligence and that those who are less intelligent need the good offices of the more intelligent to keep them in line, whether they are called government officials or, in Plato's term, philosopher-kings. Herrnstein and Murray (1994) seem to have shared this belief when they wrote about the emergence of a cognitive (high-IQ) elite, which eventually would have to take responsibility for the largely irresponsible masses of non-elite (low-IQ) people who cannot take care of themselves. Left to themselves, the unintelligent would create, as they always have created, a kind of chaos.

G Hamiltonian 的观点与柏拉图的看法类似，认为人们生而具有不同的智力水平并且那些智力稍逊的人需要智力优异的人组成优秀的政府机关保证他们共同发展，无论他们被称为政府官员还是柏拉图说的“哲人王”。Herrnstein 和 Murray(1994) 似乎认可这一观点，他们写到了认知精英（高智力人群）的出现，这个群体最终需要承担大多数不负责任的非精英（低智力人群），这些低智力人群无法很好地照顾自己。如果让他们自生自灭，智力逊色的人会像他们一直做的那样，产生某种混乱。

H The Jeffersonian view is that people should have equal opportunities, but they do not necessarily avail themselves equally of these opportunities and are not necessarily equally rewarded for their accomplishments. People are rewarded for what they accomplish, if given equal opportunity. Low achievers are not rewarded to the same extent as high achievers. In the Jeffersonian view, the goal of education is not to favor or foster an elite, as in the Hamiltonian tradition, but rather to allow children the opportunities to make full use of the skills they have. My own views are similar to these (Sternberg, 1997).

H Jeffersonian 的观点是人们应当具有同等的机会，但他们并不需要平等地受益于这些机会，也不需要为自己的成就获得同样的回报。如果获得平等的机会，人们会因为自己的成就



而获得回报。低成就者不会获得像高成就者一样的回报。在 Jeffersonian 的观点中，教育的目的并不是为了帮助和培养精英，就像 Hamiltonian 的传统一样，而是让儿童有机会充分使用他们的技能，我自己的观点也与之类似 (Sternberg, 1997)。

I The Jacksonian view is that all people are equal, not only as human beings but in terms of their competencies - that one person would serve as well as another in government or on a jury or in almost any position of responsibility. In this view of democracy, people are essentially intersubstitutable except for specialized skills, all of which can be learned. In this view, we do not need or want any institutions that might lead to favoring one group over another.

I Jacksonian 的观点是人人平等，不仅作为人类而言，而且在他们的能力方面也是如此——在政府或陪审团或几乎任何需要承担责任的岗位，一个人应当能与另一个人同样出色地完成任务。在这种民主观点中，除了在一些专业技能方面，人们是可以互相替代的，而这些专业技能可以通过学习获取。这一观点认为，我们不需要也不希望有任何机构偏袒某一类人群。

J Implicit theories of intelligence and of the relationship of intelligence to society perhaps need to be considered more carefully than they have been because they often serve as underlying presuppositions for explicit theories and even experimental designs that are then taken as scientific contributions. Until scholars are able to discuss their implicit theories and thus their assumptions, they are likely to miss the point of what others are saying when discussing their explicit theories and their data.

J 关于智力以及智力与社会的关系的内隐理论或许需要受到比之前更为细致的关注，因为它们经常被作为外显理论甚至被视为科学贡献之前的实验设计的潜在假设。只有学者们讨论他们的内隐理论并因而可以讨论他们的假设，他们才不会在其他人讨论外显理论和数据时，显得毫无头绪。

Passage 2



Saving bugs to find new drugs

保护昆虫以发现新药品

Zoologist Ross Piper looks at the potential of insects in pharmaceutical research

动物学家 Ross Piper 探寻昆虫在制药研究中的潜在价值

A More drugs than you might think are derived from, or inspired by, compounds found in living things. Looking to nature for the soothing and curing of our ailments is nothing new - we have been doing it for tens of thousands of years. You only have to look at other primates - such as the capuchin monkeys who rub themselves with toxin-oozing millipedes to deter mosquitoes, or the chimpanzees who use noxious forest plants to rid themselves of intestinal parasites - to realise that our ancient ancestors too probably had a basic grasp of medicine.

A 提取自生物中的化合物或受到生物中化合物的启发制成的药品，要比人们想象中的更多。在自然界中寻找用来减轻和治愈疾病的营养物并不是新鲜事——我们已经这么做了成千上万年。你只需要了解一下其他灵长类动物——比如卷尾猴用带有毒素的千足虫驱除蚊子，黑猩猩使用有毒的森林植物摆脱肠内寄生虫——就会意识到或许我们的祖先也掌握一些基本的医药知识。

B Pharmaceutical science and chemistry built on these ancient foundations and perfected the extraction, characterisation, modification and testing of these natural products. Then, for a while, modern pharmaceutical science moved its focus away from nature and into the laboratory, designing chemical compounds from scratch. The main cause of this shift is that although there are plenty of promising chemical compounds in nature, finding them is far from easy. Securing sufficient numbers of the organism in question, isolating and characterising the compounds of interest, and producing large quantities of these compounds are all significant hurdles.

B 药物科学和化学就建立在这些古代的基础之上，并完善了对这些自然界产物的提取、鉴定、改良和检验。在之后的一段时期内，现代药物科学将关注重点从大自然转移到了实验室



中,从头开始设计化合物。这一转变的主要原因是尽管自然界中有许多有使用前景的化合物,找到它们却并非易事。获得大量尚在讨论中的微生物,分离并鉴定人们关注的化合物,对这些化合物进行大规模生产都有巨大的困难。

C Laboratory-based drug discovery has achieved varying levels of success, something which has now prompted the development of new approaches focusing once again on natural products. With the ability to mine genomes for useful compounds, it is now evident that we have barely scratched the surface of nature's molecular diversity. This realisation, together with several looming health crises, such as antibiotic resistance, has put bioprospecting - the search for useful compounds in nature - firmly back on the map.

C 基于实验室的药物发现取得了不同程度的成功,这促使新研究方法的发展再一次聚焦自然界的产物。通过获取有用化合物基因组的能力,很明显目前我们对自然界的分子多样性仅仅进行了浅层的研究。意识到这一点,加之一些潜在的健康危机如抗生素耐药性,使生物勘探技术,也就是在自然界中寻找有用的化合物,回到了人们关注的视野里。

D Insects are the undisputed masters of the terrestrial domain, where they occupy every possible niche. Consequently, they have a bewildering array of interactions with other organisms, something which has driven the evolution of an enormous range of very interesting compounds for defensive and offensive purposes. Their remarkable diversity exceeds that of every other group of animals on the planet combined. Yet even though insects are far and away the most diverse animals in existence, their potential as sources of therapeutic compounds is yet to be realised.

D 昆虫毫无疑问是陆地上的主导者,它们占据着每一处可能的地方。因此,它们与其他生物体有复杂的互动方式,这促进了一系列以防卫和进攻为目的的化合物的进化。它们显著的多样性超过了地球上其他所有动物类型的总和。然而即使昆虫是现存最具多样性的物种,他们作为治疗型化合物的潜力仍有待研究。



E From the tiny proportion of insects that have been investigated, several promising compounds have been identified. For example, alloferon, an antimicrobial compound produced by blow fly larvae, is used as an antiviral and antitumor agent in South Korea and Russia. The larvae of a few other insect species are being investigated for the potent antimicrobial compounds they produce. Meanwhile, a compound from the venom of the wasp *Polybia paulista* has potential in cancer treatment.

E 通过被研究的少部分昆虫，人们已经确认了一些有前景的化合物。比如，alloferon，一种丽蝇幼虫产生的抗菌剂，在韩国和俄罗斯被作为一种抗病毒剂和抗癌剂。同时，人们还在研究其他一些昆虫物种的幼虫，以了解它们产生的有效抗菌物质。同时，黄蜂毒液中的化合物 *Polybia paulista* 在癌症治疗方面也有潜在效用。

F Why is it that insects have received relatively little attention in bioprospecting? Firstly, there are so many insects that, without some manner of targeted approach, investigating this huge variety of species is a daunting task. Secondly, insects are generally very small, and the glands inside them that secrete potentially useful compounds are smaller still. This can make it difficult to obtain sufficient quantities of the compound for subsequent testing. Thirdly, although we consider insects to be everywhere, the reality of this ubiquity is vast numbers of a few extremely common species. Many insect species are infrequently encountered and very difficult to rear in captivity, which, again, can leave us with insufficient material to work with.

F 为什么相对而言昆虫在生物勘探中几乎没有受到关注？首先，昆虫数量如此之多，以至于在没有某种标靶方法的情况下，研究如此多样的物种是一项艰巨的任务。第二，昆虫通常体型很小，而含有潜在有用化合物的腺体就更小了，这就使为之后的研究获取足够化合物变得很困难。第三，尽管我们认为昆虫无处不在，但现实情况是一些非常普遍的物种数量巨大。许多昆虫物种并不常见，并且在圈养状态下很难培养，这再一次使我们在研究时缺乏足够的材料。



G My colleagues and I at Aberystwyth University in the UK have developed an approach in which we use our knowledge of ecology as a guide to target our efforts. The creatures that particularly interest us are the many insects that secrete powerful poison for subduing prey and keeping it fresh for future consumption. There are even more insects that are masters of exploiting filthy habitats, such as faeces and carcasses, where they are regularly challenged by thousands of microorganisms. These insects have many antimicrobial compounds for dealing with pathogenic bacteria and fungi, suggesting that there is certainly potential to find many compounds that can serve as or inspire new antibiotics.

G 我和英国阿伯里斯特威斯大学的同事们研究了一种方法，使用我们生态学的知识指导我们的工作。令我们非常感兴趣的生物是一些昆虫，它们分泌强力的毒药来捕杀猎物并使其保持新鲜以备之后食用。还有更多的昆虫擅于探寻污秽的栖息地，例如粪便和尸体，在这里它们通常会受到数以千计微生物的威胁。这些昆虫有很多应对致病细菌和真菌的抗菌化合物，这意味着一定有很多潜在的化合物可以作为新的抗生素使用，或是启发我们获得新的抗生素。

H Although natural history knowledge points us in the right direction, it doesn't solve the problems associated with obtaining useful compounds from insects. Fortunately, it is now possible to snip out the stretches of the insect's DNA that carry the codes for the interesting compounds and insert them into cell lines that allow larger quantities to be produced. And although the road from isolating and characterising compounds with desirable qualities to developing a commercial product is very long and full of pitfalls, the variety of successful animal-derived pharmaceuticals on the market demonstrates there is a precedent here that is worth exploring.

H 尽管自然历史的知识为我们指出了正确的方向，但这并没有解决与通过昆虫获得有用化合物的相关问题。幸运的是，如今剪下昆虫基因中携带着我们关注的化合物的编码的片段已



经成为可能,并且可以将其插入细胞系中以允许更大规模的化合物生产。尽管从高质量地分离并鉴别化合物到开发出一款商业产品的路很漫长并且充满困难,但市场上多种成功的动物提取药物证明已经有先例值得人们探索。

I With every bit of wilderness that disappears, we deprive ourselves of potential medicines. As much as I' d love to help develop a groundbreaking insect-derived medicine, my main motivation for looking at insects in this way is conservation. I sincerely believe that all species, however small and seemingly insignificant, have a right to exist for their own sake. If we can shine a light on the darker recesses of nature' s medicine cabinet, exploring the useful chemistry of the most diverse animals on the planet, I believe we can make people think differently about the value of nature.

I 随着每一片荒地的消失,我们失去了许多可能的药品。我十分希望帮助开发来自昆虫的开创性药品,我以这种方式研究昆虫的主要动力是为了保护它们。我由衷地相信所有物种,不管多么微小且看上去多么不重要,依然有生存的权利。如果我们可以照亮自然界药物宝库黑暗的深处,探索来自世界上最具多样性物种的有用化合物,我相信我们可以让人们以不同的方式看待大自然的价值。

Passage 3

The power of play

游戏的力量

Virtually every child, the world over, plays. The drive to play is so intense that children will do so in any circumstances, for instance when they have no real toys, or when parents do not actively encourage the behavior. In the eyes of a young child, running, pretending, and building are fun. Researchers and educators know that these playful activities benefit the development of the whole child across social,



cognitive, physical, and emotional domains. Indeed, play is such an instrumental component to healthy child development that the United Nations High Commission on Human Rights (1989) recognized play as a fundamental right of every child.

实际上世界范围内每一位儿童都会游戏。游戏的动力如此强烈以至于孩子们会在任何情况下做游戏，比如在他们没有真实的玩具或者父母并不主动鼓励这种行为时。在儿童的眼中，奔跑、假扮和搭建都是乐趣。研究者和教育者认为这些游戏活动对儿童的社交、认知、身体和情感等领域的发展有好处。实际上，游戏对儿童的健康发展而言是一个重要的要素以至于联合国人权高级委员会（1989）将游戏作为每一位儿童的基本权利。

Yet, while experts continue to expound a powerful argument for the importance of play in children's lives, the actual time children spend playing continues to decrease. Today, children play eight hours less each week than their counterparts did two decades ago (Elkind 2008). Under pressure of rising academic standards, play is being replaced by test preparation in kindergartens and grade schools, and parents who aim to give their preschoolers a leg up are led to believe that flashcards and educational 'toys' are the path to success. Our society has created a false dichotomy between play and learning.

然而，尽管专家们不断地极力阐明游戏在儿童生活中的重要性，但是儿童实际用来进行游戏的时间却在持续减少。如今，儿童每周用来游戏的时间比20年前少了8小时（Elkind 2008）。在不断提高的学业标准的压力下，游戏在幼儿园和小学中正被准备考试代替，那些希望帮助自己的学龄前孩子提高的家长们被引导相信，抽认卡和具有教育意义的“玩具”才是通向成功的路径。我们的社会在游戏和学习之间创造了一种错误的对立关系。

Through play, children learn to regulate their behavior, lay the foundations for later learning in science and mathematics, figure out the complex negotiations of social relationships, build a repertoire of creative problem-solving skills, and so much more. There is also an important role for adults in guiding children through playful



learning opportunities.

通过游戏，儿童可以学习如何管理自己的行为，为之后学习科学和数学打下了基础，学会处理复杂的社交关系，培养创造性解决问题的能力以及更多其他能力。通过游戏化的学习机会，成年人同样在引导自己的孩子方面扮演着重要角色。

Full consensus on a formal definition of play continues to elude the researchers and theorists who study it. Definitions range from discrete descriptions of various types of play such as physical, construction, language, or symbolic play (Miller & Almon 2009), to lists of broad criteria, based on observations and attitudes, that are meant to capture the essence of all play behaviors (e.g. Rubin et al. 1983).

研究游戏的学者和理论家依然没有就游戏的正式定义达成完全一致的意见。这些定义从对各种游戏类型的独立描述，例如感觉运动、结构性、语言或象征性游戏 (Miller & Almon 2009)，到基于观察和态度的一系列宽泛标准，这些标准旨在抓住一切游戏行为的本质 (如 Rubin et al. 1983)。

A majority of the contemporary definitions of play focus on several key criteria. The founder of the National Institute for Play, Stuart Brown, has described play as 'anything that spontaneously is done for its own sake'. More specifically, he says it 'appears purposeless, produces pleasure and joy, [and] leads one to the next stage of mastery' (as quoted in Tippett 2008). Similarly, Miller and Almon (2009) say that play includes 'activities that are freely chosen and directed by children and arise from intrinsic motivation'. Often, play is defined along a continuum as more or less playful using the following set of behavioral and dispositional criteria (e.g. Rubin et al. 1983):

当前多数有关游戏的定义都集中在一些核心标准上。国家游戏协会的建立者 Stuart Brown，将游戏描述为“只为其本身考虑的、自发进行的行为”。更具体地说，他认为游戏“没有目的，产生快乐和愉悦，(并)引导一个人进入下一个掌握能力的阶段”(引用自 Tippett 2008)。类似地，Miller 和 Almon (2009) 认为游戏包括“由儿童自由选择和进行并由内在



动机所引起的活动”。通常，游戏的定义伴随着一个有关游戏程度的连续体，并使用下面这一套“行为和意向的标准”（如 Rubin et al 1983）:

Play is pleasurable: Children must enjoy the activity or it is not play. It is intrinsically motivated: Children engage in play simply for the satisfaction the behavior itself brings. It has no extrinsically motivated function or goal. Play is process oriented: When children play, the means are more important than the ends. It is freely chosen, spontaneous and voluntary. If a child is pressured, they will likely not think of the activity as play. Play is actively engaged: Players must be physically and/or mentally involved in the activity. Play is non-literal. It involves make-believe.

游戏是令人愉快的：儿童必须享受这种活动，否则这就不是游戏。游戏是出于内在动机的：儿童进行游戏只是为了这种行为本身带来的满足感。游戏没有外部动机的功能或目标。游戏是过程导向的：当儿童游戏时，过程比结果更为重要。游戏是自由选择、主动发生并且自愿的行为。如果儿童有压力，他们或许不会认为这种活动是游戏。游戏是主动参与的：游戏者必须在身体和 / 或心理上参与到活动中。游戏是非文字行为。游戏包含了伪装。

According to this view, children's playful behaviors can range in degree from 0% to 100% playful. Rubin and colleagues did not assign greater weight to any one dimension in determining playfulness; however, other researchers have suggested that process orientation and a lack of obvious functional purpose may be the most important aspects of play (e.g. Pellegrini 2009).

根据这种观点，儿童游戏行为的程度可以从 0%到 100%不等。Rubin 和同事们定义游戏时并没有更强调其中任何一个方面；然而，其他研究者认为过程导向和没有明显的功能性目的可能是游戏最重要的特征（如 Pellegrini 2009）。

From the perspective of a continuum, play can thus blend with other motives and attitudes that are less playful, such as work. Unlike play, work is typically not viewed as enjoyable and it is extrinsically motivated (i.e. it is goal oriented). Researcher



Joan Goodman (1994) suggested that hybrid forms of work and play are not a detriment to learning; rather, they can provide optimal contexts for learning. For example, a child may be engaged in a difficult, goal-directed activity set up by their teacher, but they may still be actively engaged and intrinsically motivated. At this mid-point between play and work, the child's motivation, coupled with guidance from an adult, can create robust opportunities for playful learning.

从一个连续体的角度来看,游戏可以与其他不那么具有游戏性的目的或态度结合,例如工作。与游戏不同,工作通常被认为是无趣的,它是由外在动机驱动的(例如,它是目标导向的)。研究者 Joan Goodman(1994)指出工作和游戏的混合形式并不会妨碍学习;相反,这种形式可以提供最佳的学习环境。例如,一名儿童可能会参与一项由老师设置的、困难的且目标导向的活动,但他们依然可能主动参与并且是出于内在动机的。在游戏和工作的中间点,儿童的动机,与来自成年人的指导一起,可以建立游戏化学习的良好机会。

Critically, recent research supports the idea that adults can facilitate children's learning while maintaining a playful approach in interactions known as 'guided play' (Fisher et al. 2011). The adult's role in play varies as a function of their educational goals and the child's developmental level (Hirsch-Pasek et al. 2009). 很重要的是,最近研究支持的观点是成年人可以在互动中通过保持游戏化的方法促进儿童的学习,这种方法被称为“引导式游戏”(Fisher et al. 2011)。成年人在游戏中的角色随着他们教育的目标以及儿童的发展水平会产生不同(Hirsch-Pasek et al. 2009)。

Guided play takes two forms. At a very basic level, adults can enrich the child's environment by providing objects or experiences that promote aspects of a curriculum. In the more direct form of guided play, parents or other adults can support children's play by joining in the fun as a co-player, raising thoughtful questions, commenting on children's discoveries, or encouraging further exploration or new facets to the child's activity. Although playful learning can be somewhat structured, it must also be child-centered (Nicolopolou et al. 2006). Play



should stem from the child's own desire.

引导式游戏有两种形式。在一个非常基础的层面上,成年人可以通过提供促进一门课程各方面的物品和经历来丰富儿童的游戏情境。在引导式游戏更直接的形式中,家长和其他成年人可以通过下面的方式支持儿童的游戏:作为合作玩家加入游戏,提出引人思考的问题,对孩子们的发现进行评论,或是鼓励儿童活动的进一步探索或新的角度。尽管游戏化学习可以在一定程度上被精心安排,但它也必须是以儿童为中心的(Nicolopolou et al.2006)。游戏应该源于儿童自身的渴望。

Both free and guided play are essential elements in a child-centered approach to playful learning. Intrinsically motivated free play provides the child with true autonomy, while guided play is an avenue through which parents and educators can provide more targeted learning experiences. In either case, play should be actively engaged, it should be predominantly child-directed, and it must be fun.

自由游戏和引导式游戏在以儿童为中心的游戏化学习中都是至关重要的要素。内在动机驱使的自由游戏为儿童提供了真正的自主性,而引导式游戏则是一种途径,通过引导式游戏家长和教育者们可以提供更有目的性的学习体验。无论何种情况,游戏应当是主动参与的,是明显以儿童为中心的,并且一定是快乐的。