**1. Reconceptualizing and Repositioning in the 21st Century : A Global Paradigm Shift - 21世纪课程的重新概念化与定位：全球性的范式转变**

We, human beings, tackle with rapid, relentless, unpredictable, complex, disruptive change in this 21st century. The gap between education and learning systems and their development contexts will exponentially widen as the impact of Industry 4.0 (I4.0) begin to set in.

在21世纪，我们人类要应对迅速、无情、不可预测、复杂和破坏性的变化。随着工业4.0 (I4.0)的影响开始显现，教育和学习系统及其发展环境之间的差距将呈指数级扩大。

Many young learners are being educated for the past, instead of the future.

In this regard, education systems have to change to reflect competences that prepare learners for an unknown future. Within the 21st century and I4.0, education systems must prepare people for seven macro competences: (i) Lifelong learning; (ii) Self-agency; (iii) Interactively using diverse tools and resources; (iv) Interacting with others; (v) Interacting with the world; (vi) Multi-literateness; and (vii) Trans-disciplinarity. Facilitating these competencies and preparing for the unknown are critical challenges for education today. In a global paradigm, curriculum is reconceptualized and repositioned to best meet current and future challenges and opportunities. Key drivers of change in the 21st century that impel the reconceptualization and repositioning of curriculum are outlined. It notes that current conceptualizations position curriculum almost exclusively within the education sector; tightly associate it with general education (K-12), with children of K-12 age, and with schools. Tis further limits the significance, role, and impact of curriculum. Curriculum is much more than that. Learners (both young and old) require to thrive, to be fulfilled, and to drive individual, national, and global development within fast changing and mostly disruptive 21st century development context. It notes that the fourth Industrial Revolution (Industry 4.0) is an unstoppable accelerant to the complexity and velocity of change in the 21st century

许多年轻人接受的是过去的教育，而不是未来的教育。

在这方面，教育系统必须改变，以反映为学习者准备未知未来的能力。在21世纪和工业4.0时代，教育体系必须为人们的七种宏观能力做好准备:(1)终身学习;(2)Self-agency; (3)交互式地使用各种工具和资源; (4)与他人交往;(5)与世界互动;(6)Multi-literateness;(7)Trans-disciplinarity。促进这些能力，并为未知做好准备，是当今教育面临的重大挑战。在全球范例中，课程被重新概念化和重新定位，以最好地应对当前和未来的挑战和机遇。概述了21世纪推动课程重新概念化和重新定位的关键驱动力。它指出，目前的概念化定位课程几乎完全在教育部门;它与通识教育(K-12)、K-12岁儿童和学校密切相关。这进一步限制了课程的意义、作用和影响。课程远不止这些。学习者(无论年轻人还是老年人)都需要在快速变化和极具破坏性的21世纪发展环境中茁壮成长，获得成就感，推动个人、国家和全球的发展。报告指出，第四次工业革命(工业4.0)是21世纪变化的复杂性和速度不可阻挡的催化剂。

The future of education systems must strengthen teaching, leaning and assessment; improve global learning standards and measurement tools; institutionalize parent’s education through diverse platforms; strengthen public education through diverse media; strengthen informal education to reinforce formal STEM education; intervene as early as Early Childhood Care and Education (ECCE); rid curricula and learning materials of all forms of gender bias; adopt competence-based STEM education; provide students role modelling, career counselling, mentoring, internships and apprenticeships.

未来的教育体系必须加强教学、学习和评价;改进全球学习标准和测量工具;通过多种平台，将家长教育制度化;透过多元化媒体加强公众教育;加强非正规教育，加强正规STEM教育;早期干预儿童早期保健和教育(ECCE);消除所有形式的性别偏见的课程和学习材料;采用基于能力的STEM教育;为学生提供角色示范、职业咨询、辅导、实习和学徒培训。

**2. Addressing the Global Learning Crisis : What can Neuroscience offer? -全球学习危机：脑科学能带来什么？**

Across the world, governments are slowly but increasingly interested in developing a 21st-century education system that is supported by concrete evidence about how we learn.

世界各地，各国政府正慢慢地但越来越感兴趣地发展一种21世纪的教育体系，这种体系得到有关我们如何学习的具体证据的支持。

For a long time, research on understanding and developing new methods of learning has not moved as quickly as in many other areas. In addition, the challenges to combine learning and neuroscience remain in unrealized potential of science to transform how we facilitate learning (e.g. health sector) notwithstanding contentions on the applicability (esp. classroom practices); limited, impactful dialogue between scientists and educators on the science behind learning.

长期以来，关于理解和开发新的学习方法的研究并没有像其他许多领域那样进展迅速。此外，将学习和神经科学相结合的挑战仍然存在于科学尚未实现的潜力中，以改变我们如何促进学习(例如卫生部门)，尽管对其适用性(特别是课堂实践)存在争议;科学家和教育家之间关于学习背后的科学的有限的、有影响力的对话。

However, we need to close the gap between scientific knowledge on learning and its application in education policies and practice. Governments, educational institutes and teachers, we all must acknowledge the possibilities to make positive changes in learners by introducing the idea of scientific ideas in classroom and thinking how current problems and needs in education can drive new directions for neuroscience research, and how neuroscience can feed into educational thinking, policy, and practice.

然而，我们需要缩小学习的科学知识与其在教育政策和实践中的应用之间的差距。政府、教育机构和教师,我们都必须承认的可能性做出积极改变学习者通过引入科学思想在课堂的想法和思考如何教育当前的问题和需求可以推动神经科学研究的新方向,以及神经科学如何融入到教育思想、政策和实践。