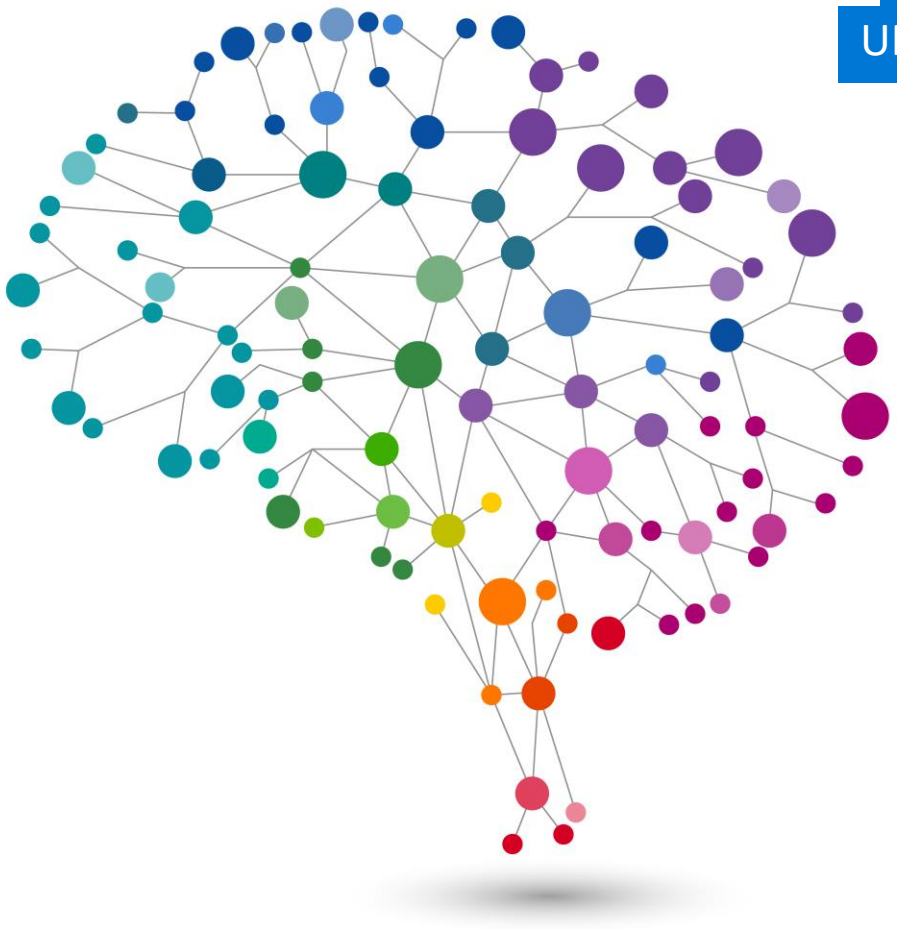
Expert meeting on the Learning Sciences

Concept note

25-26 October 2023

UNESCO Headquarters



Anita Ponne/Shutterstock.com

Background and rationale

As the world has made progress on getting more children into school, the issues of quality, equity and relevance, together with the subsequent questions of whether and how effectively students are learning have become increasingly prominent. Clearly, the international community has committed to achieving the learning agenda by focusing the Sustainable Development Goal 4 (SDG 4) on effective learning and the acquisition of relevant knowledge, skills and competencies. This is evident in the targets and global indicators, including for pre-primary (Target 4.2), primary and secondary education (Target 4.1), as well as for youth and adult literacy (Target 4.6).

While the evidence demonstrates that education is a developmental multiplier and key to safeguarding human rights, hundreds of millions of children and young people remain out of school. The number has risen by 6 million since 2021, and many of those in school are not even acquiring the basic skills. Over 763 million youth and adults lacked basic literacy skills in 2023. The participation rate in organized learning (one year before the official primary entry age) has been stable at 75% since 2015, though there is an uneven distribution across regions. A key issue that emerged in the discussion during the COVID-19 pandemic on the role of digital technologies in helping students learn and recover from learning losses is the need for sound, rigorous and impartial evidence of technology's added value in learning, yet this remains lacking. Digital literacy, critical thinking and problem-solving are increasingly important skills, particularly with the growth of generative AI, thus putting people, regardless of age, under pressure to learn and relearn to survive and strive. More than ever, young people today need education that not only supports their acquisition of knowledge and development of competencies and

mindset, but also their (re)engagement in learning, and social-emotional well-being, which should be grounded on strong foundational skills. Without more inclusive, equitable and transformative policies and actions that tackle the multiple causes of the learning crisis, educational exclusion and the missed opportunities to equip learners with 21st century skills and competencies, the vision of the Education 2030 Agenda will not be achieved.

In September 2022, Heads of State and Government came together at the Transforming Education Summit convened by the UN in response to the global crisis in education in order to mobilize action and solutions to recover pandemic-related learning losses and sow the seeds to 'transform education'. The Summit called for strengthening political commitment at the highest level and targeted actions in six key areas: education in crisis contexts, foundational learning, greening education, digital learning, gender equality, and financing. The UN Secretary General's Vision Statement on Transforming Education also emphasizes the importance of curriculum and pedagogy, and the need for innovation in teaching and learning processes to prepare the learners of today for a rapidly changing world. If we are to transform education as envisaged by the commitments made at the Summit, then the international community must give Learning Sciences – which drive innovations in the curriculum, pedagogy and assessment practices – the attention they deserve. But other than the emerging consensus that education systems are no longer fit for purpose and therefore must be fundamentally different from the current system, it is not clear what a transformed system will look like.

In his "Our Common Agenda Policy Brief 10 on Transforming Education" (July 2023), the UN Secretary-General brought to light the twin crises of equity and relevance in education, which will have enormous consequences for individual rights, for national Governments and, increasingly, for the international community as a whole. "As the movement of goods, services, capital and people becomes increasingly global, and as the digital and green transitions urgently call on our collective action, so too will the need increase for people in every corner of the world to possess an evolving pool of knowledge, skills and capacities. Failure to reset education systems globally to ensure everyone is prepared for the markets and uncertain future risks further entrenching a two-speed world, deepening inequalities and exacerbating global instability."

The case of Learning Sciences for education transformation

It is often the case in education that decision-making has little choice but to rely on unproven 'best' or 'promising' practices. Typically, policies and practices are borrowed from high-performing education systems without sufficient consideration to the cultural, political, and social differences. Furthermore, education policies and practices generally ignore what decades of scientific research have shown about how children learn and develop, and therefore, how teachers should teach. For example, the recent call for investing in early stimulation and early learning to improve school readiness and foundational learning stems from much insightful research in developmental psychology, neurosciences, and cognitive development. Likewise, the call for supporting children's social-emotional skills development is based on decades of studies in educational neuroscience, which point to the role of emotion and pleasure in learning.

Learning sciences research also suggest several alternative models of learning, particularly those that involve organic links between formal schooling and the many other learning institutions, spaces, opportunities and resources available to students, such as libraries, museums, after school clubs, online activities that can be accessed from home, and even interactions between students and working professionals. Despite diverse, and sometimes contradictory findings on the impact of remote and online teaching on student learning outcomes, the proliferated use of technologies of varying types and scales during the COVID-19 school closures has opened up an intensive debate on the potential of

technologies in 'transforming' teaching - learning processes and delivering more personalized, equitable, relevant, and efficient education. For example, advanced educational technologies that can be adapted to students' specific learning needs and knowledge gaps can free up teachers' time in the classroom so they can focus on the social-emotional aspects of learning or provide hands-on support to struggling students.

In its report, *Reimagining our futures together: a new social contract for education*, the International Commission on the Futures of Education called for a worldwide and collaborative research agenda to strengthen our capacity for foresight and innovation. The report, along with many others before it, calls for the use of data, evidence, and knowledge to inform policymaking, teaching and learning practices, education management and education transformation.

Inquiries and knowledge about these different aspects of education policies and practices have made the case for leveraging the different sciences on and for learning. While scholars have been studying learning for centuries, the Learning Sciences as a distinct field made its appearance in the late 20th century. For example, it was in 1991 that the first international conference was held, and the *Journal of the Learning Sciences* was first published. Learning Sciences investigates learning in a variety of settings – not only in the more formal setting of school classrooms, but also the more informal learning that takes place at home, on the job, and among peers. The objective is to better understand the cognitive and social-emotional processes that result in the most successful learning, and to use this knowledge to redesign pedagogy, classrooms and other learning environments so that learners can learn more deeply and more effectively. The Learning Sciences include cognitive science, educational psychology, developmental psychology, computer sciences, anthropology, sociology, information and communication technologies, human-computer interaction, neurosciences, instructional design, psychometrics, and other related fields. The integration of these diverse fields of research each with the same goal to better understand learning has resulted in a new interdisciplinary approach, with collaboration in its DNA. The collaboration among these disciplines has resulted in new ideas, new methodologies and new thinking about learning as well as new explanations and new ways for improving it, offering great potentials for leveraging its insights to transform teaching and learning.[1]

Why is an expert meeting on Learning Sciences research needed?

Since 1991, the enquiry and interest in how the learning sciences can be applied to improve learning outcomes have been growing exponentially, with many new publications, journals, associations, and conferences being established worldwide. There is increasingly a desire for education stakeholders, notably policymakers, researchers, school leaders, administrators, and teachers, to share experiences and expertise, experiment, and learn from each other to improve the way education systems enable and deliver effective learning. The Learning Sciences offer tremendous potential to bridge these knowledge gaps, not only from policy to practice but also in areas that are potentially effective for transforming teaching and learning.

But many initiatives are scattered and remain "experimental" in nature, and many come to an end when financing ends. The gap between the scientific knowledge and how it can be applied to policy and practice remains enormous and the 'translation' issue continues to be a challenge. Translating the knowledge generated by scientists and researchers for policymakers, education leaders, school principals, teachers, and teacher educators to use remains tough because these groups speak different languages and pursue different goals.

[1] The first comprehensive overview of the field was published in 2006: the *Cambridge Handbook of the Learning Sciences* (Sawyer, 2006).

There have been some attempts to 'bridge' this gap. For example, the International Mind, Brain and Education Society (IMBES) holds biennial conferences to bring together scientists, practitioners, and policymakers to engage in dialogue and review the state of knowledge in education, biology, and the developmental and cognitive sciences. The UK-based Education Endowment Fund uses data and scientific evidence to design and implement educational interventions to improve learning outcomes in disadvantaged schools in the UK. They produce scientifically-backed guidance reports for schools and teachers and recommendations for policymakers. The Global Science of Learning Education Network (GSoLEN) works to build global scientific infrastructure to address learning needs. The network represents a broad cross-section of international scientists, education leaders and practitioners, policy experts, philanthropists, and education technology companies from over 60 countries. The GSoLEN network grew out of a set of meetings organized between the National Sciences Foundation (NSF) in the USA and the OECD beginning with an event in 2012 where NSF-funded scientists leading Science of Learning Centres were invited to discuss their research findings with implications for policy. This led to the International Convention on the Science of Learning in 2014 in Shanghai, followed by the International Satellite Symposium on the Science of Learning in 2015 during the Congress of the International Brain Research Organisation (IBRO) in Brazil.

Within UNESCO, the Asia-Pacific Education Research Institutes Networks (ERI-Net) was established in 2009 by the UNESCO Asia and Pacific Regional Bureau for Education to facilitate regional collaboration among education research institutions (including universities and think-tanks) in education policy issues relevant to the region, such as transversal competencies. The office also established NEQMAP (Network on Education Quality Monitoring in the Asia-Pacific) to improve the quality of learning in the region through collaborative efforts, providing a forum for exchange of expertise, experiences and lessons to improve student learning assessment and its alignment with curriculum and pedagogy. A similar network of stakeholders was also established in Africa to improve the quality of learning (Teaching and Learning: Educators' Network for Transformation - TALENT). Another initiative that grew out of the discussions from the invited meetings organized by the OECD are the Science of Learning fellowships, hosted by the UNESCO International Bureau for Education (IBE). Financed by the International Brain Research Organization (IBRO), the IBE Science of Learning fellowships are awarded to senior scientists to support the translation of key neuroscience research on learning and the brain to insights for educators, policymakers, and governments.

Recently, the UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP) produced a first-ever scientifically robust and evidence-based assessment of the accumulated knowledge on education. The report aims to provide policy-relevant information and recommendations for improving and 'transforming' education systems and the way learning is organized in formal and non-formal settings. The UNESCO Chair of Science for Education hosted by the Brazilian Network of Science for Education is a recent attempt at gathering multiple disciplines focused on transdisciplinary research about learning and teaching, including pedagogy, cognitive and developmental psychology, neuroscience, paediatrics, and others.

Towards a global forum of Learning Sciences

In recognition of the urgency to transform education, leading experts and actors have agreed to organize an international meeting of experts to discuss the potential of the Learning Sciences to contribute to transforming education and examine the possibility of establishing a global forum of networks in support of inclusive, quality and holistic learning. An forum of networks could be made up of actors from across interdisciplinary education research networks from national, regional and global levels for peer learning, knowledge sharing, collaborative knowledge creation, capacity strengthening, and coordinated actions across multiple networks and efforts to inspire, catalyse and support systemic changes for learning. Actors would work in partnership with UNESCO to co-construct the agenda, structure, and methodology to weave together existing and emerging networks

to amplify efforts for transforming teaching and learning. A specific emphasis will be put towards building the capacity of African researchers to work on African-specific learning challenges as part of UNESCO's Priority Africa mission, for example, through the Campus Africa initiative. Furthermore, there is high potential for the outputs of such a global alliance to inform the High-Level Steering Committee (HLSC) for SDG 4's Functional Area 1 on evidence-based policymaking and implementation.[2]

UNESCO is uniquely positioned to convene and host a global network of networks. As part of UNESCO's functions, the organization is mandated to serve as a catalyst with convening power for regional and international cooperation, functioning as a laboratory of ideas, a clearinghouse, and standard-setter. By its constitution, UNESCO is interdisciplinary and can facilitate intersectoral synergies with the Science and Culture sectors, as well as mobilize UNESCO Chairs and UNITWIN Networks to work on common challenges.[3]

A global network of networks would aim to accelerate the uptake of scientific research for improving policies and practices in education by:

1. Co-constructing a collaborative research agenda for collective action to address the global learning crisis through:
   - Identification of priority research areas to improve teaching and learning.
   - Engagement in collaborative enquiry of agreed-upon research topics across diverse contexts, geographies and income levels.

2. Sharing research findings for peer-learning, dialogue, and advocacy to influence policies and practices through:
   - Showcasing effective policies and practices for inclusive, quality, and holistic learning.
   - Deliberations on translating evidence into action at the systems level, especially in support of the most disadvantaged learners.
   - Advocacy for education transformation to address persistent global learning challenges.

3. Connecting networks and initiatives for policy learning and capacity strengthening to improve teaching and learning through:
   - Establishment of collaboration spaces to explore, experiment, and learn with peers within and across existing and emerging networks.
   - Deployment of a multilingual repository of research articles, project reports, policy briefs, and other pertinent resources.
   - Linking senior professionals with experience in research-policy translation and more junior researchers across different geographies to facilitate the formation of a new cohort of inter- and multidisciplinary professionals.

Draft programme outline

The inaugural meeting of experts will take place in-person at UNESCO's Headquarters in Paris on 25 and 26 October 2023. The first day of the meeting will bring together a small group of international experts in areas of Learning Sciences to report on emerging insights from their research and the implications for policy and practice. The second day of the meeting will be devoted to showcasing national, regional and global networks and how these networks translate findings from the Learning Sciences to inform policy

[2] SDG4-Education 2030 High-Level Steering Committee. https://www.sdg4education2030.org/hlsc
[3] UNESCO Chairs and UNITWIN Networks. https://www.unesco.org/en/unitwin

and practice. The meeting will end with a summing up of the work presented over the two days, followed by a discussion about the potential value of establishing a global alliance of networks and a plan for the following steps.

	Wednesday, 25 October 2023	**Thursday, 26 October 2023**
Morning	Welcome and Opening • Setting the stage on current educational challenges with a focus on the mismatch and missing links between the Learning Sciences and educational policies and practices.	• Experiences of national, regional, and global networks in bridging sciences, polices, and practices. • What have we learned about challenges and enablers in bridging science, policy and practice?
Afternoon	• Theme 1: How the science of learning can mitigate the impacts of poverty and inequality on learning outcomes. • Theme 2: Pedagogical innovations for improving early and foundational learning.	Summing up and Closing • How can we further leverage and operationalize networks on the Learning Sciences for implementation of education policies and practices?What important knowledge and research gaps remain that can be facilitated by collaboration and joint research?

Expected outputs

1. A compendium of insights from invited speakers on Learning Sciences for education innovation, which will be published in non-technical language as part of the meeting proceedings.

2. A community created on the Global Learning House website for sharing resources, peer learning and networking to promote the uptake of learning research for improving policies and practices in education.

Advisory group

An Advisory Group has been established to guide UNESCO in organizing this first meeting:

- Grégoire BORST, Professor of Developmental Psychology and Cognitive Neuroscience of Education, La Sorbonne
- Donika DIMOVSKA, Chief Knowledge Officer, Jacobs Foundation
- Roberto LENT, Professor of Neuroscience, Institute of Biomedical Sciences, Federal University of Rio de Janeiro and D'Or Institute of Research and Education, UNESCO Chair on Science for Education
- Bob WISE, Director of the Global Science of Learning Education Network (GSoLEN)

For more information

Section of Education Policy - Education Sector
educationpolicy@unesco.org
https://www.unesco.org/en/articles/expert-meeting-learning-sciences

7, Place de Fontenoy, 75007 Paris