



**Curriculum  
and quality  
learning:  
How can  
neuroscience  
contribute?**

# **BUILDING BACK**

# **BRIDGE**



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Co-organized by the International Bureau of Education (IBE-UNESCO), The Knowledge and Innovation Exchange (KIX) Africa 21 Hub, and the International Brain Research Organization (IBRO), this event seeks to contribute to closing the gap between scientific knowledge on learning and its application to education policies and practice, with a focus on curriculum.

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Friday, 4 June 2021  
4:00–5:45 PM CET (Geneva)

Location  
Online (Zoom meetings)

Registration  
<https://bit.ly/3wyzEch>

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4:00 PM, Central European Time (CET)

10:00 AM Eastern Standard Time (EST)

7:00 AM Pacific Standard Time (PST)

# PROGRAM

## 4.00–4.15 pm

*Welcome and opening remarks*

**Yao Ydo**

Director, UNESCO International Bureau of Education (IBE-UNESCO)

**Mona Laroussi**

Director, Institut de la Francophonie pour l'éducation et la formation (IFEFOIF)

**Tasia Asakawa**

Director of Development and Communications, International Brain Research Organization (IBRO)

## 4.15–5.15 pm

*Panel presentations*

**Building back better from COVID-19.**

**Curriculum and quality learning:**

**How can neuroscience contribute?**

**Moderator:**

**Grégoire Borst**

University of Paris, France

*Bridging education and the science of learning*

**Grégoire Borst**

University of Paris, France

*Nurturing the learning brain: Leveraging the home learning environment to build back*

*from COVID-19*

**Jérôme Prado**

Lyon Neuroscience Research Center, France

*Tailored approaches to education:*

*The case of poor reading*

**Irene Altarelli**

University of Paris, France

*The biological evidence of the negative effects of stress on learning*

**Espérance Kashala Abotnes**

University of Bergen, Norway

## 5.15–5.40 pm

*Discussion*

**Q & A with the audience**

## 5.40–5.45 pm

*Closing remarks*

**Abdel Rahamane Baba-Moussa**

Secretary-General, Conference of Ministers of Education of French-speaking Countries (CONFEMEN)

# CONCEPT NOTE

## **Brain science, education, and learning: Making connections**

A scientific groundwork for education and learning has the potential to revolutionize the current understanding of learning and to provide an expanded, updated, and potentially useful toolkit to shape educational practice and policy. To effectively envision and guide critical improvements and reforms, policy makers, practitioners, and researchers need to be fully cognizant of this momentous dialogue between education and the science of learning.

## **Urgent need to build back better**

This dialogue is now more relevant than ever. Besides leading to an extraordinary global health and economic crisis, the COVID-19 pandemic has led to unprecedented educational disruptions, with unprecedented government responses (UN 2020, UNESCO 2020). As catastrophic as it is, the COVID-19 pandemic offers a moment of reflection. We are gaining some keen insights into how both education systems and students' learning have been working, or not working, and a picture is emerging of what needs to change. These insights have to be set with an understanding of a major crisis the world was facing before the pandemic: the learning crisis.

Even before COVID-19 hit, education data were showing a grim picture: 258 million children of primary- and secondary-school age were out of school. In low- and middle-income countries, over half of all 10-year-old children could not read and understand a simple text.

The COVID-19 pandemic has exacerbated learning gaps further, taking 1.6 billion students out of school at its peak. The learning crisis, and the impact on the human capital of this generation of learners is likely to be long-lasting (World Bank 2020, 2021).

## Renewed relevance for the neuroscience of learning

Urgent, effective action is required to quell the impact of COVID-19 on education worldwide (UNESCO 2020). We should not just respond to the crisis, but we need to build back better, and use this window of opportunity to shape more resilient systems, better prepared to cope with future shocks, as well as more equitable systems that ensure opportunities for all. Strong support and preparation for educators, alongside the development of thoughtful curriculum and assessments, as well as sound resource policy based on students' needs, are required to achieve these goals at scale (Darling-Hammond et al., 2020).

We are at an exceptional moment in time to redirect our course. For education communities, this is a chance to take a close look at aspects of education systems that we have taken for granted for far too long. Also, the lessons of COVID-19 compel us to imagine education systems in which students of all ages can thrive, and we need to take meaningful action to bring about that desired future.

Can we transform this crisis into a renewing wave? Will it help bring about a better education system, a better society, and a better world?

In this complex context, the neuroscience of learning has two new responsibilities: first, to offer guidance about how best to deal with the impact of the current situation (including lockdown, homeschooling, and delaying children's return to school) on learning outcomes and psychosocial development.

The second responsibility is to consider bigger questions about what this "large scale educational experiment" might mean for the future (Thomas and Rogers 2020). This includes the potential negative impact of the COVID-19 crisis in increasing inequality and, with many students not being able to properly complete their school curriculum and assessment, in deepening the learning crisis; but also the potential positive impact of driving innovations in technology use for learning and teaching.

Alongside the many new challenges posed by the COVID-19 crisis is a somewhat familiar one: how to translate scientific evidence into education policy? On a smaller scale, the neuroscience of learning faces the same challenge as before the COVID-19 crisis: How can a scientific understanding of teaching and learning inform the much broader canvas of education policy and educational practices

and, more specifically curriculum development, its teaching, learning, and assessment?

More specifically, how can the slow, cumulative knowledge built up through research translate to meet the needs of students, caregivers, and teachers?

## References

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron B., & Osher, D. (2020) Implications for educational practice of the science of learning and development, *Applied Developmental Science*, 24(2), 97-140.

OECD (2020). *Combatting COVID-19's effect on children*. Policy responses to Coronavirus (COVID-19) series. Paris: OECD.

Thomas, M.S.C., & Rogers, C. (2020). Education, the science of learning, and the COVID-19 crisis. *Prospects*, 49, 87-90.

UN [United Nations] (2020). *Education during COVID-19 and beyond*. Policy brief. New York, NY: UN.

UNESCO (2020). *Education: From disruption to recovery*. Paris: UNESCO. <https://en.unesco.org/covid19/educationresponse>

World Bank (2020). *The COVID-19 pandemic: Shocks to education and policy responses*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/33696>

World Bank (2021). *Urgent, effective action required to quell the impact of COVID-19 on education worldwide*. Washington, DC: World Bank. <https://www.worldbank.org/en/news/immersive-story/2021/01/22/urgent-effective-action-required-to-quell-the-impact-of-covid-19-on-education-worldwide>

# ABOUT THE PANELISTS

Building back better from COVID-19

**Grégoire Borst** is Professor of Developmental Psychology and Cognitive Neuroscience of Education at the University of Paris. He is the director of the Laboratory for the study of Child Development and Education (CNRS) at La Sorbonne and a junior member of the Institut Universitaire de France. His work focuses on the role of cognitive and emotional control on the cognitive and socio-emotional development of children and adolescents and on learning at school and in everyday life. He has published more than 70 scientific articles and 6 books including two for children to explain the basics of the brain and the mind.

**Irene Altarelli** is Associate Professor in Developmental Psychology and Neuroscience at Paris University. Her research focuses on inter-individual variability in learning, with a special interest in reading acquisition. The long-term goal of her work is gaining a better understanding of the cognitive and neural factors underlying both effective and impaired learning, in order to develop successful training strategies. In this context, Irene's investigations comprise behavioural studies as well as anatomical and functional neuro-imaging paradigms, in adult and in children populations.

**Jérôme Prado** is a developmental cognitive neuroscientist working at the Lyon Neuroscience Research Center (CRNL) and the head of the Brain, Behavior, and Learning lab. Jérôme's research focuses on the cognitive and neural mechanisms that underlie the development of logical and mathematical thinking in children and adolescents. His work notably involves children with learning disabilities, such as dyscalculia.

**Espérance Kashala Abotnes** is Associate Professor in the Centre for International Health, Department of Global Public Health and Primary Care Centre for International Health, at the University of Bergen. She is the first female neuropsychiatrist from the Democratic Republic of Congo (DRC). Her current research grant from Grand Challenge Canada implements a mediational intervention to reduce cyanogenic exposure and improve early child development and maternal mental health in affected populations in the DRC. She is also an appointed expert to the International Criminal Court for the management of post-traumatic stress disorder in war affected areas in DRC.

# OBJECTIVES OF THE WEBINAR

This is, therefore, a particularly opportune time for the IBE to organize this special Learning Series session, which brings together leading scholars from neuroscience, cognitive psychology, and education, for a sweeping discussion on the relevance and prospects of the neuroscience of learning during the COVID-19 crisis.

It is hoped that the webinar would provide:

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A broader understanding of the "learning brain", which, in turn, can provide an additional tool for educators and caregivers to facilitate students' learning and development.

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A basic grounding about how the brain learns, which promises to expand teachers' education, help them avoid various neuromyths, and empower them to approach their own practice more scientifically.

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A broader understanding of the many factors, within and beyond the classroom, which "sculpt" the unique brain of an individual learner, with direct implications for education policy makers and practitioners.

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A glimpse at new discoveries about the basic mechanisms of learning that can begin to inform, in an authentic manner, curriculum, education policy and everyday practices of teaching and learning.

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An overview of new dimensions that have not traditionally or explicitly been linked to classroom learning, such as emotion, and underlying environmental, evolutionary, and biological variables—all factors that are both potential constraints and potential springboards for acquiring human learning and knowledge.

# MORE INFO

Building back better from COVID-19

## Participation

The webinar will take place on 4 June 2021, at:

4:00 PM, Central European Time (CET)  
10:00 AM Eastern Standard Time (EST)  
7:00 AM Pacific Standard Time (PST)

The webinar is open to all interested stakeholders, including, but not limited to: staff from international organizations and other agencies working on the education response to COVID-19; ministers of education; curriculum specialists; educators; etc.

A special invitation is extended to the Permanent Missions to the United Nations Office at Geneva (UNOG); UNESCO HQ and Field Offices staff; and UNESCO National Commissions.

## Technical platform and interpretation

The webinar will be held in French, with simultaneous interpretation to English, conducted through the Zoom webinar platform.

**Interested participants should register by 4 June through this form:**

<https://bit.ly/3wyzEch>

## Contact information

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