

Workbook for hubs

NOBEL PRIZE TEACHER SUMMIT 2024

An online programme with a mix of short lectures, interviews, and discussions

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Minding the Brain

How does the brain work? This is a question that has occupied scientists for centuries. In recent decades, there have been remarkable breakthroughs in mapping and furthering our understanding of the human mind. Yet, among scientists there is consensus: Our brain remains vastly unexplored. As educators, understanding our brain is essential in forming a positive learning environment. What, then, do we know about the mind today? How does learning actually occur?

This workbook is a tool for you to use along with the recorded version of the summit. It is divided into chapters to facilitate discussions after each talk.

More material from the speakers can be found at <u>https://nobelprizemuseum.se/en/presentations-4/</u>

We hope you enjoy it!



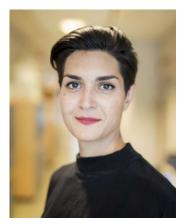
MARTIN NILSSON Memory Master and Teacher

The Art of Memory

Demonstration 5 minutes

Questions to discuss:

1. How can methods for memorising be helpful in lifelong learning?



ARMITA GOLKAR Associate Professor of Psychology at Stockholm University

Emotional Learning

Interview 15 minutes

Can our feelings change what we remember - and what consequences does that have for learning?

In this interview, Armita Golkar, Associate Professor in psychology at Stockholm University, talks about how we can better understand the connections between emotions and learning, and how the social context affects our ability to regulate emotions.

Questions to discuss:

- 1. How do you take emotional regulation in consideration, in different situations that can occur in your classroom? (Teacher and students)
- 2. Do you have examples of how you make your teaching engaging and emotionally relevant in different ways?
- 3. Can you think of ways to use peer-influence, as a tool for positive social development in your school?



SARA BENGTSSON Associate Professor in Psychology at University of East Anglia

A Look Inside the Brain of Teenagers

Lecture 15 minutes

How does neural activity flow between brain areas when teenagers learn computer programming? Can these findings also apply to reading and word processing? And what are the effects on brain activity, confidence, and performance for the person typing compared to the one observing and learning through discussion?

In this lecture, Sara Bengtsson will present a recent neuroimaging study based on Embodiment theories, focusing on the role of motor actions in learning.

Questions to discuss:

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- 1. What did you learn about the effects that occur in hands-on work like programming?
- 2. Students working in pairs. How can you as a teacher, use the information on different learning effects, depending on whether the student is a "driver" or a "traveler"?

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DAVID MACMILLAN Nobel Prize in Chemistry, 2021

A Generous Mind

Interview 20 minutes

Are scientists competitive and closed off from society? Not according to David MacMillan, who views doing science as a way to help the world and the key to success as being generous with your ideas.

In this interview, professor MacMillan talks about his passion for chemistry, for education and about why he gave his Nobel prize money to a charity.

Questions to discuss:

- 1. How do you encourage your students to be creative, ask questions, and put forward ideas?
- 2. According to Macmillan it is more important to collaborate and be generous with your ideas when you are a researcher, rather than being competitive. How do you practice collaboration and being generous at your school?



AGNETA GULZ Professor of Cognitive Science at Lund University

Why Learning and Instruction Should Be Based on Science, Not on Research

Lecture 15 minutes

There is a difference between using science versus using research as a basis for real-world decisions about educational approaches.

In this lecture, Agneta Gulz presents two examples to illustrate her arguments: One addressing cell phones in classrooms, the other addressing methods to support beginners in their reading acquisition.

Questions to discuss:

- 1. What did you learn about the difference between science and research, as a basis for educational decisions?
- 2. Is science versus research, something you reflect upon among your colleagues at school?
- 3. How do you work with digital screens/mobile phones in your school? Are the learning instructions based on science?



LARS STRANNEGÅRD President of the Stockholm School of Economics

Specialising and the Art of Blending

Interview 15 minutes

What do we need to become good at something? Is streamlining the best way or should education provide a mixture of disciplines even when the students are specialising?

Lars Strannegård is the President of Stockholm School of Economics. In this interview, Lars Strannegård and Carin Klaesson discuss what stimulates learning.

- 1. Do you use a mix of disciplines at your school, to enhance the educational experience? If so, in what way?
- 2. How do you think the space/building and school environment, influences the students at your school?

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AMY LOUTFI Professor of Computer Science towards AI and Robotics

Artificial Curiosity?

Interview 15 minutes

To learn things, children need to explore and be curious about the world. Can the same be true for machines? Should we encourage their curiosity and playfulness?

In this interview, Amy Loutfi draws from her work on curiosity-driven learning and empathy in AI to provide insights on how intelligent systems could either complement or challenge our mental capacities in the near future.

- 1. How can we encourage students to be curious and reflect upon what they don't know?
- 2. What possibilities do you see for the development of AI in the classroom?
- 3. Within development of AI, "learning how to learn" and "agency over learning" are important aspects. How can we help students to have agency over their own learning?

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JOHN H. FALK Founder and CEO of the Institute for Learning Innovation

Learning and Well-Being

Lecture 15 minutes

Humans are born to learn, but learning is a complex, dynamic process influenced by prior experiences and histories. Learning must be retrievable, linked to other knowledge, and support well-being to be meaningful.

John H. Falk, a learning researcher and biologist, talks about how well-being, viewed as an ancient and fundamental capacity of life, is both a prerequisite for and an outcome of successful learning experiences.

- 1. Which of the four aspects of well-being would you say your school best addresses for its students?
- 2. What could your school do to increase the well-being of your students?

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BJÖRN HEDENSJÖ Psychologist, writer, and podcast host

How Can We Be So Smart and Still Act So Stupid?

Interview 15 minutes

We are creative and sometimes even brilliant. Yet we fight wars and destroy the planet we live on. In this interview, Björn Hedensjö reflects on the complexity of the human mind and the possibility to predict our behaviour.

- 1. Do you talk with your students about how behavior influences the way one is perceived?
- 2. Do you have an example where you as a teacher, made a mistake that you have learned from?

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ELENA ZHEMKOVA Co-founder of Memorial – receiver of Nobel Peace Prize, 2022

Understand the Past and Foresee the Future

Interview 25 minutes

How can we develop and reach atonement if there is a systemised falsification of history? The human rights Organisation Memorial was founded in the late 1980s to study violations during the Sovjet era. By investigating what is true about the past, we can raise awareness about the present.

Dr Elena Zhemkova is one of the founders of Memorial, and served as the Executive Director until the organisation was dissolved in 2022 by the Russian authorities. In exile, she continues to coordinate Memorial's regional network. Memorial received the Nobel Peace Price in 2022 together with the Ukrainian organisation Center for Civil Liberties and the imprisoned Belarusian human rights advocate Ales Bialiatski.

Questions to discuss:

- 1. Does your country have collective memories that are sensible to talk about?
- 2. How does your school teach about issues that might be controversial?
- 3. How can you encourage students to distinguish between disinformation and facts?

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Find more at: <u>nobelprizemuseum.se/en</u> <u>nobelprize.org/educational</u>

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