

Learnus[®]

Understanding Learning



PIONEERING THE UNDERSTANDING OF HOW WE LEARN
THE FIRST TEN YEARS

2014-2024

Message from Professor Sir Simon Baron-Cohen

Patron of Learning Skills Research Foundation



Learnus is a unique charity in bringing together educators, neuroscientists, and policy makers, to challenge how education is usually delivered, and to take the insights from neuroscience to see how we should design education differently.

This is vital because we know that a large

percentage of children struggle at school, may leave school without qualifications, are unhappy at school, and develop poor mental health whilst at school – so education is not working for all children.

If you visit the Learnus website you see the wide range of leading neuroscientists who are part of the exciting challenge to make their research relevant to the classroom. A wealth of videos showcase how they are communicating their science to teachers, and most importantly, ensuring children and young people are actively involved in shaping both research, teaching practice and policy.

Perhaps one of the key findings that has emerged over the past decade is that not all children learn in the same way. This means that delivering a curriculum based on just one learning style is going to advantage some children and disadvantage others. It is simultaneously going to include some children in the exciting journey of education, and also push other children to turn away from education. And we know that a non-trivial number of young people end up in the category the UK Government calls NEET – Not in Education, Employment or Training. How can we minimise the risk of this outcome?

We have known for decades how some children are visual thinkers and others are verbal thinkers, and that some children can learn through passively absorbing information whilst others learn best through active participation. Increasingly we are also recognising that

some children learn best through social channels and in conversation and in groups, whilst others learn best in solitary settings, where there is no social distraction and the information is available without time-pressure to be checked and re-checked.

Finally, the last decade has seen the concept of neurodiversity achieve a strong foothold in the field of education and the work place, and we need to take seriously not just those with formally diagnosed disabilities such as dyslexia, ADHD, and autism, who fall under this umbrella, but all of us, since diversity among brain types is no different to other forms of diversity. We all have our own unique mix of strengths and challenges. Good teachers have long known that if you play to a child's strengths, that gives the child the best chance at enjoying their one chance at education.

Making space for different learning styles, to ensure learning is engaging and fun for all children, not just for some, remains a vital priority for teachers and policy makers.

We owe Learnus a big thank you for providing the platform where education, neuroscience, and policy intersect.

Professor Sir Simon Baron-Cohen, FBA FMedSci, Kt Fellow, Trinity College, Cambridge, Director, Autism Research Centre Psychiatry Department, Cambridge University

Message from Chris Green

Chair, Learning Skills Research Foundation



When we first launched Learnus, a subsidiary of Learning Skills Research Foundation, one of our primary concerns was that the emphasis in education was almost always about what to learn with little attention being paid to how to learn. We were aware of the growing interest

in how the brain functions, and that studies in educational neuroscience were steadily unravelling the fact that children absorb knowledge in different ways. We could see that the sharing of such knowledge would be a powerful tool to teachers in the classroom.

From the beginning, our aim was to establish Learnus as an active community, bringing teachers and academics together to share knowledge in this important field. At that time hardly anyone outside the teaching profession had any idea what educational neuroscience was all about. With a membership approaching 3,000, we have successfully established a dialogue between academics and teachers as a result of which academics are now able to hone their research with a greater sense of focus in response to the needs of teachers.

Anton Chekhov wrote ‘Knowledge is of no value unless you put it into practice.’ Over the past ten years we have shared our knowledge about educational neuroscience and what it can achieve with thousands of teachers and many schools through our programme of annual lectures, our webinars, our Roving Reporter project, our FutureEd Conferences, our in-school presentations and by engaging with a number of important research projects.

We are set to go for the next ten years. This brochure will inform you about two exciting projects we are planning for the future, the BIG project and the School Award Scheme.

On behalf of all my colleagues I would like to thank all the grant-giving trusts and foundations, commercial sponsors and private individuals who have so generously supported our work over the past 10 years. I am also indebted to Richard Newton-Chance (Chair of Learnus), Derek Bell (Director of Learnus), Caroline Shott (Founder and CEO of The Learning Skills Research Foundation) and to all the senior academics and teachers who have tirelessly given of their time over the past ten years.

“Congratulations on a decade of influencing, educating and inspiring. There can be no more important work than supporting the learning of those who educate our children”

Professor Dame Alison Peacock Chief Executive, Chartered College of Teaching

Message from Richard Newton-Chance

Chair of Learnus



Why do we need to do things better? Well, we have a system which works some of the time for some of the people. It is tried and tested - so tried and tested that we still deliver a largely medieval curriculum using methods Shakespeare would

have recognised. And if you want an education system whose apogee is an Oxbridge don, then it's fine. But we want the range of skills, knowledge and understanding at the highest levels across all areas of human endeavour, don't we?

There are still thousands of young people leaving the education system without any qualifications at all. An Institute for Fiscal Studies report concluded that

there is overwhelming evidence the education system leaves too many poorer students behind and that despite decades of policy focus. So, in spite of our best efforts, the disadvantage gap is not closing.

The IFS report also points out the strong correlation between income and achievement. However, it is ridiculous to expect schools to address all of the issues caused by social and economic deprivation on their own.

As well as deprivation, in the UK, 15-20% of the population is neurodivergent. This equates to 13 million people, including 700,000 people with autism spectrum condition and two million people with dyslexia. This is a massive issue in a school system aimed at the average learner.

Given all this, a better understanding of how children's brains actually work might stop us perpetually trying very hard to do the same thing and expecting a different outcome.

"In 2022, two in five pupils (41 per cent) completed year 6 without meeting the expected standards in reading, writing and maths (combined). In total, over 275,000 children left year 6 without a secure grasp of foundational skills."

"Cracks in our Foundation" Report, Centre for Social Justice 2023

Our understanding of how the brain processes information has the potential to help us improve teaching and learning. Often, though, the research has not spoken to the practicalities of the classroom environment.

Over the past decade, Learnus has played an important role in bringing neuroscientists and teachers together, so that they can better utilise insights from neuro-scientific research in ways that have a direct impact in the classroom.

Here's to another successful decade of sharing knowledge, fostering understanding, and utilising research to improve teaching and learning.

Professor Becky Francis CBE, CEO of the Educational Endowment Foundation.

Learnus' Mission

Learnus is at the forefront of initiating and supporting engagement and dialogue between researchers working in the field of educational neuroscience, education practitioners and policymakers. We believe this multi-disciplinary activity has huge potential for improving and emphasising how we learn, not just what we learn. Our mission is to act as a bridge between the challenges of classroom practice and academic research into the brain, the mind and behaviour in order to use the insights gained to improve and enrich the quality of teaching and learning for all. Through our programme of activities over the first 10 years we have established a diverse community and networks through which Learnus is:

- facilitating dialogue between the different professional groupings;
- building partnerships with leading organisations;
- transmitting key messages for teachers and other educational professionals;
- looking forward, initiating new innovative projects and activities.

Yearly Expansion of Learnus

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mediated Workshops											
Annual Lectures											
Research Projects											
FutureEd Conferences											
Interviews											
YouTube Channel											
Webinars											
Roving Reporter											

Taking advantage of technological developments Learnus has expanded its programme of activities as shown in this table: Mediated Workshops, Annual Lectures, Research Projects, FutureEd Conferences, Interviews with leaders in the field, YouTube Channel, Webinars and Roving Reporter videos.

This has expanded both the geographical reach and number of interactions with individuals in the UK and world-wide.

“Learnus occupies a unique place, like no other organization I know of. It sits right at the intersection between education and neuroscience, constantly seeking new ways to create dialogue, make research more practically relevant, and improve outcomes for all children”

Professor Duncan Astle, Programme Leader, MRC Cognition and Brain Sciences Unit, University of Cambridge

Learnus Facilitating Dialogue

Key to the success of Learnus over the last 10 years has been its commitment and innovative approaches to initiating dialogue between neuroscientists, psychologists, teachers, students and policy makers. Starting with the model for its mediated workshops, all Learnus events ensure there is a multidisciplinary group of participants covering the wide range of specialisms. In addition, key to a successful outcome has been the structuring of discussions through provocative questions addressed by cross-disciplinary groups. The table below provides a flavour of the topics of debate over the years.

Activity	Topics Included
Mediated Workshops	<p>2013: “Understanding Learning - is it all in the brain?” Led by: Professor Michael Thomas, Centre for Educational Neuroscience, London, UK</p> <p>2016: “The impact of touchscreens on early child development: Is it really all bad news?” Led by: Professor Annette Karmiloff-Smith, Birkbeck College, University of London</p> <p>2016: “Lessons from neuroscience for music learning” Led by: Professor Lauren Stewart, Goldsmiths, University of London</p>
Annual Lectures	<p>2016: “Diagnosis, which diagnosis? Pitfalls and prospects for supporting the struggling learner.” Professor Susan Gathercole MBE, University of Cambridge</p> <p>2021: “Socioeconomic Inequality and Children’s Brain Development” Professor Kimberley Noble, Teachers College, Columbia University USA</p> <p>2022: “Approaches to Neurodiversity in the classroom” Professor Sue Fletcher-Watson, Edinburgh University UK</p> <p>2023: “How We Learn: Why brains learn better than any machine....for now” Professor Stanislas Dehaene Chair of Experimental Cognitive Psychology at Collège de France in Paris</p>



FutureEd Conferences

2017: “How can findings from Educational Neuroscience reshape teaching and learning now and in the future?”

Keynote speakers included: Professor Daphne Bavelier, University of Geneva, Switzerland; Kate Atkins, Headteacher, London UK

2018: “Maximising the potential of the adolescent brain”

Speakers included: Professor Sarah-Jayne Blakemore, University of Cambridge, UK; Geoff Barton, Association of School and College Leaders, UK; Dr Martina Lecky, Headteacher, London UK

2023: “What is the place of educational neuroscience in teacher education with particular reference to the Early Careers Framework?”

Keynote speakers included: Professor Paul Howard-Jones, University of Bristol, Professor Michael Thomas, Director of Centre of Educational Neuroscience, London UK; Professor Duncan Astle, University of Cambridge, UK; Dr Kendra McMahon, Bath Spa University, UK; Peter Mather, School Leader, London UK

“To continue developing an outstanding education system we need evidence based practice - the field of educational neuroscience has to be the heart of this. As a Headteacher and Education Advisor I have found the Learnus events and lectures thought provoking and inspiring and a very useful tool for staff development. Bringing together researchers and educators is vital so we can meld theory with its practical application to make informed change in our classrooms’.”

Gwen Lee, Education Advisor, Christopher Hatton School



Learnus looking to a big future

Learnus is a pioneering organisation championing the important contribution the cognitive sciences can make to improve the quality of education for all. While it is possible to look back over the last 10 years with pride, there is still much to do. There are multiple challenges ahead, not least the rapid expansion of “artificial intelligence”, that need to be addressed.

Learnus is committed to playing its unique part in future developments. In particular it plans to introduce two new initiatives.

- The first is a **Schools’ Award** to recognise the achievements of teachers and schools that are incorporating lessons from the cognitive sciences into their practice to the benefit of their students.
- The second, **Building Impact Groups**: the BIG Project aims to address the core challenges of ‘what’ research is needed and ‘how’ the outcomes can be translated more effectively and efficiently to improve teaching and learning in practice. The very complex nature of this multi-dimensional problem has its own challenges but so does getting the funding for such a large-scale multi-disciplinary project. Learnus announced the BIG project in 2023.

In addition, over the coming years, Learnus will continue to evolve its core activities in order to deliver on its mission “to act as a bridge between the challenges of classroom practice and academic research into the brain, the mind and behaviour in order to use the insights gained to improve and enrich the quality of teaching and learning for all”.

“Learning from others is a huge upgrade to learning by trial and error, and learning from a teacher is an even bigger upgrade and unique to humans.”

Dame Uta Frith, Emeritus Professor of Cognitive Development,
UCL Institute of Cognitive Neuroscience.

“It has been a tremendous privilege to be associated with the important work Learnus is doing”

Robin and Jessica Lough, The Dovedale Foundation



A recent YouGov survey found:

- “76% of teachers who are aware of Educational Neuroscience have found its insights useful in their teaching”
- “The majority also agree that it is relevant to their their professional development and over half believe it would be possible to implement in their classrooms”
- “39% feel that it underpins the future of teaching”

Learnus Schools Award

To mark our tenth anniversary, we are absolutely delighted to announce the launch of an important new initiative, the Learnus Schools Award. This award recognises innovative practice in schools that are exploring the practical application of the Science of Learning, schools that personify what Learnus is all aboutapplying research in psychology and neuroscience to improve the educational life chances of young people.

Through our many lectures, webinars and conferences over the last ten years, we have been connecting educators and world-leading scientists who specialise in the study of the brain, the mind and behaviour in order to use the evidence and insights from high quality research in these multi-disciplinary fields to improve and enrich teaching and learning for all. And over that time, we have seen more and more teachers showing real interest in applying this research in their classrooms.

Our Learnus Schools Award is intended to recognise those schools which have become interested in what the research is telling us about how children and young people learn and which have started to apply that knowledge to the way they organise teaching and learning.

The award consists of a Learnus Schools Award Plaque for schools to keep and display and a visit from our Roving Reporter team to film the activity involved. This footage will then form part of a national video database of innovative practice from which other schools can benefit.

Our goal is to create a rich and engaging resource freely available to all those who are interested in applying the science of learning to their practice. In this way we intend to support change that will bring about better outcomes for all.

To participate in the Learnus Schools Award, please go to www.learnus.co.uk/schoolsaward where you will find details of how to participate

ROVING REPORTER

In this new series, we have been visiting organisations leading the way in educational neuroscientific endeavour, and we have been making short documentary films about them by way of making teachers and practitioners aware of leading developments. Programmes include:

- **Centre for Attention, Learning and Memory (CALM) Lab**, University of Cambridge – Duncan Astle, Programme Leader at The Medical Research Council's Cognition and Brain Sciences Unit.
- **Toddler Lab (Birkbeck College)** the World's first dedicated centre, where researchers use cutting edge wearing tech. to see how toddlers' brains develop. Denis Mareschal, Director CBCD
- **The Blakemore Lab, University of Cambridge** Sarah-Jayne Blakemore is Professor of Psychology and Cognitive Neuroscience. Her group's research focuses on the development of social cognition and decision making in the human adolescent brain.
- **The Attention, Brain and Cognitive Development (ABCD) Lab**, part of University of Oxford's Experimental Psychology Division led by Professor Gaia Scerif.

All videos are filmed by Edmund Trevelyan-Johnson and are available on our YouTube Channel and on the Learnus website.

Learnus developing partnerships

Over the 10 years Learnus has built strong partnerships with a wide range of organisations with whom we have worked on academic research projects, our FutureEd conferences, researcher interviews and our ‘Roving reporter’ programme. The willingness of such well-respected bodies and individuals to give of their time so freely is a testament to the reputation and respect that Learnus has earned.

In particular we are grateful for the support and encouragement we have had from our longest standing partner, the London Centre for Educational Neuroscience (CEN). In the words of the Director,

“It is my great pleasure to offer heartfelt congratulations to Learnus on the occasion of their tenth anniversary.

Learnus’s achievements over those 10 years - from their education conferences to their support of research projects, to their engagement with teachers, their webinars, publications, videos and more - represent an enduring commitment to building a bridge between research and education. They have been very successful in facilitating dialogue between different professional communities, and have helped deliver a range of collaborative projects between researchers and educators.

It has been a joy to work with the whole team at Learnus, particularly our work together on the UnLocke project which established a method to improve science and maths learning in primary age children, and our new collaboration on the Building Impact Groups project. I continue to be impressed by their passion and commitment in supporting the use of insights gained from high-quality research on the study of the brain, the mind and behaviour to improve and enrich learning for all. From the successes of the first 10 years, to the excitement of the next ten years: well done and good luck!”

Professor Michael S. C. Thomas,

Director, University of London Centre for Educational Neuroscience, UK.

Key Partnerships: FutureEd Conferences have all been run in partnership with other leading bodies including:

- Association of School and College Leaders (2017 and 2018)
- University College London (2018)
- Chartered College of Teaching (2023)

Research Projects

Learnus has played a leading role in several long term research projects.

- **The UnLocke Project**
Learning Counter-intuitive concepts in primary maths and science (2016-2020)
The project was funded through a joint initiative with the Wellcome Trust and the Education Endowment Foundation (EEF) to develop and evaluate educational interventions based on neuroscience.
- **iRead Project**
The project was funded by the European Union H2020 programme (2017-2020) and developed personalised learning technologies to support reading skills for primary school children. Learnus partnered with the London Knowledge Lab and UCL Institute of Education.
- **The SPAtial Cognition to Enhance mathematics (SPACE) programme**
funded by the Education Endowment Foundation (EEF) (2022-2023). Led by Emily Farran, this study brought together researchers from the University of Surrey, Loughborough University, University College Dublin, Birkbeck College and Learnus (the SPACE team) to explore the use of LEGO® in training spatial skills of young children (6-7 years). An independent evaluation team from the Centre of Evidence & Implementation (CEI) will assess whether the SPACE programme is effective and feasible for teachers to deliver in Year 2 maths lessons.

Learnus influencing teaching and learning in classrooms

At the core of the Learnus mission is the concept that understanding how we learn is just as important as what we learn. Thus by improving our understanding of learning the better our ability to influence teaching and classroom practice. Learnus activities encourage teachers and others to engage with the outcomes of research across the cognitive domains; reflect on them and implement appropriate adjustments to their own practice in order to address the challenges of learning faced by their students.

Learnus reaches out to teachers and other practitioners through its combination of:

- **Face-to-face presentations**, free of charge to schools, that highlight some of the issues involved and exemplify how the neuroscience of how the brain works can impact on day to day practice.
- its **webinar series** which focuses on specific topics addressing the ways in which research can influence everyday classroom practice.
- and the **Roving Reporter videos** that provide insights into the research behind the fast developing knowledge base of educational neuroscience and related disciplines.

“With a professional understanding of the mind and brain, educators will always be better positioned to support the learning and well-being of their students. Learnus has been playing a fantastic role in helping to provide that understanding - Happy anniversary Learnus!”

Paul Howard-Jones, Professor of Neuroscience and Education, School of Education, University of Bristol
Incorporating research into practice: a case study, in the words of a headteacher.

“It has been an absolute privilege to have worked with colleagues from Learnus for the past decade. The joining of cutting-edge neuroscience research with educators at the chalkface has allowed me to engage in incredible work in schools across the country. A key project that I was involved in with Professor Alice Jones Bartoli from Goldsmiths resulted in the development of behavioural modification and management systems that were focused on trauma-informed, relational approaches in Alternative Provision and SEMH schools. The systems were predicated upon the belief that sanctions do not work for the majority of the students in those schools and may even have militated against positive behaviour modification. Following the successful implementation of the interventions, the schools were rated as outstanding in all areas by Ofsted. I am excited to see where the next phase of Learnus’ journey might lead us over the next ten years.”

Steven Baker OBE FCCT, CEO for The People’s Learning Trust (TPLT)

We are enormously grateful to all our benefactors for supporting Learnus over this important period of development

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