

4 – 6 June 2018

EARLI SIG22  
Neuroscience  
and Education  
Conference



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# Introduction

Welcome to the 5<sup>th</sup> biennial meeting of the Special Interest Group (SIG) 22 'Neuroscience and Education' of the European Association for Research on Learning and Instruction (EARLI), hosted by Wellcome.

We are delighted to bring together attendees from over 25 countries, spanning the breadth of this exciting field: cognitive and developmental psychologists, cognitive neuroscientists, education researchers, teachers, and policy makers.

Over the first two days we hope you will enjoy hearing about a wide variety of research and translation projects from speakers and poster presenters from a range of countries and career stages.

On the third day we hope to make the most of the shared expertise at the conference by inviting you to be part of an 'Open Space' event. This simple format gives you ownership of the day, allowing you to set the agenda and work with others on projects or ideas important to you.

Do share your thoughts on Twitter – you can tweet us @EarliSig22 and using #earlisig22, or #edneuro to reach the wider educational neuroscience community.

Yana and Megan, co-founders of the Learning Scientists, will be recording interviews with delegates to be made into podcasts. If you haven't yet signed up, email to find out if there's a space for you – [megan.sumeracki@gmail.com](mailto:megan.sumeracki@gmail.com).

We hope that you have a fantastic conference.

Local organising committee,

Lia Commissar and Annie Brookman-Byrne

## Local Organising Committee

Lia Commissar, Wellcome Trust, UK  
Annie Brookman-Byrne, Birkbeck, University of London, UK

## Scientific Committee

Annie Brookman-Byrne, Birkbeck, University of London, UK  
Lia Commissar, Wellcome Trust, UK  
Iroise Dumontheil, Birkbeck, University of London, UK  
Bert De Smedt, KU Leuven, Netherlands  
Sabine Peters, Leiden University, Netherlands  
Nienke van Atteveldt, VU University of Amsterdam, Netherlands

## Wellcome Trust

Wellcome Trust is a global charitable foundation, both politically and financially independent. We support scientists and researchers, take on big problems, fuel imaginations and spark debate. Our funding supports 14,000 people in more than 70 countries. Our philosophy is that good health makes life better – we want to improve health for everyone by helping great ideas to thrive.

## EARLI SIG22

The SIG brings together researchers from diverse fields including educational research, cognitive and developmental psychology, genetics, and (cognitive) neuroscience as well as interdisciplinary scientists with training in each of these fields, all of which investigate human learning and development. Taking interdisciplinarity as a basic principle, the SIG conceives the relation between educational research and neuroscience as a two-way street with rich bi-directional and reciprocal interactions between educational research and (cognitive) neuroscience.

# Agenda

**Monday 4 June 2018**

**Wellcome Collection**  
**183 Euston Road**

08:30	<i>Registration</i>	<i>Williams Lounge</i>
09:00	<b>Wellcome address</b> Lia Commissar Hilary Leever	<i>Auditorium</i>
09:15	<b>Introducing neuroscience into initial teacher education</b> Keynote speaker: Paul Howard Jones	
10:15	<b>Poster session A</b> <i>Refreshments available</i>	<i>Burroughs room</i>
11:15	<b>Oral poster presentations</b> <b>Differential effects of spelling and reading deficits in the phonological brain network</b> Agnieszka Dębska <b>Predicting mathematical ability before school by linking genes, brain and behaviour</b> Michael Skeide <b>The context and purpose of executive functions assessments: Beyond the tripartite model</b> Janina Eberhart	<i>Auditorium</i>
12:30	<i>Lunch</i>	<i>Williams Lounge</i>
13:30	<b>Symposium:</b> <b>Making science accessible to the public, teachers and policy makers</b> <b>Public</b> Steve Cross <b>Teachers</b> Yana Weinstein Megan Sumeracki <b>Policy makers</b> Ben Bleasdale	<i>Auditorium</i>
15:00	<b>Poster session B</b> <i>Refreshments available</i>	<i>Burroughs room</i>
16:00	<b>Effect of physical activity on brain and cognition: Implications for education</b> Keynote speaker: Heidi Johansen-Berg	<i>Auditorium</i>
17:00	<i>Meeting close</i>	
18:45	<i>Drinks reception</i>	<i>Medicine Now Gallery, Wellcome Collection</i>

## Tuesday 5 June 2018

Wellcome Collection  
183 Euston Road

08:30	<i>Registration</i>	
09:00	<b>How genetics shapes what we learn</b> Keynote speaker: Robert Plomin	<i>Auditorium</i>
10:00	<b>Poster session C</b> <i>Refreshments available</i>	<i>Burroughs room</i>
11:00	<b>Symposium: Teacher-led research and translation</b> <b>Teacher-led randomised controlled trials</b> Richard Churches Charlotte Hindley Sharon Baker Daria Makarova <b>How to create a research-informed school</b> Glenn Whitman	<i>Auditorium</i>
12:15	<i>Lunch</i>	<i>Williams Lounge</i>
13:15	<b>Oral poster presentations</b> <b>Learning with friends: Neural processing of performance feedback in a social context across adolescence</b> Berna Guroglu <b>Distraction in a school lesson can be predicted from a behavioural measure of irrelevant distractor effects</b> Michael Hobbiss <b>Is virtual/augmented reality beneficial for learning? EEG mental load indices associated with learning in 2D compared to 3D displays</b> Miriam Reiner	<i>Auditorium</i>
14:30	<b>Poster session D</b> <i>Refreshments available</i>	<i>Burroughs room</i>
15:30	<b>The typical and atypical reading brain:</b> <b>How a neurobiological framework of reading development can inform educational practice and policy</b> Keynote speaker: Nadine Gaab	<i>Auditorium</i>
16:30	<i>Closing remarks</i>	
17:00	<i>Meeting close</i>	

## Wednesday 6 June 2018

Wellcome Trust  
215 Euston Road

08:30	<i>Registration</i>	
09:00	<b>Introduction</b>	<i>6<sup>th</sup> Floor</i>
09:15	<b>OpenSpace – Opening session</b> <b>We will be answering the question:</b> <b>What can we all do to work together better and improve learning?</b>  Today you will be able to work on any issues or ideas you may have relating to Neuroscience and Education, whether you're a teacher, educational researcher, neuroscientist, psychologist or policy maker. We'll be working in Open Space, which is a simple format that gives you ownership of the day, allowing you to set the agenda and work together on what's important to you. The format will be fully explained when you arrive, and new ideas and discussions may emerge on the day, but if you have ideas of projects you would like to discuss with others feel free to prepare or bring material or ideas with you.  We hope this format will allow you to meet others with shared interests and allow you to start conversations about ideas for new projects or forge new collaborations, making the most of the shared expertise in the room.	
10:00	<b>OpenSpace – Session 1</b>	
10:45	<b>OpenSpace – Session 2</b>	
11:30	<b>OpenSpace – Session 3</b>	
12:15	<b>OpenSpace closing session</b>	
12:45	<b>Awarding of the poster prizes and close</b> Nienke van Atteveldt	
13:00	<i>Lunch</i>	
14:00	<i>Meeting close</i>	

## Speakers

**Sharon Baker**  
Westfield Community School



Sharon Baker is Deputy Headteacher at Westfield Community School and Startwell Centre. Westfield serves an area of high socio-economic deprivation and has been judged outstanding in its last two Ofsted inspections. Sharon has been an Acting Headteacher and Deputy Headteacher in two primary schools. She has taught in Key Stage 2 in two diverse local education authorities. In addition to her role as Deputy Headteacher, Sharon is Curriculum and Assessment Manager at Westfield. Westfield Primary is co-lead school in the Westbridge Teaching School Alliance. As part of her work within the teaching school she co-leads on Research and Development. Sharon has designed and carried out two randomised control trials focussing on spelling and the impact of spelling tests. As part of the Wellcome trust funded project, Westbridge teaching school has been considering how evidence from neuroscience can be translated into classroom practise, particularly how multiple-choice testing may be a learning event. Further projects, considering ways in which neuroscience can shape classroom innovation, are planned.

**Ben Bleasdale**  
Wellcome



Dr Ben Bleasdale is a Policy Adviser at Wellcome, a global and independent charitable foundation which supports researchers to improve human health. His role involves monitoring and seeking to influence the factors which support good science - from Government investment, to infrastructure and research culture - including through the generation of evidence on the performance of the sector and its components.

**Richard Churches**  
Education Development Trust  
rchurches@



Dr Richard Churches is Lead Adviser for Education Reform and Evidence Based Practice at Education Development Trust, where he is a member of the Research and Consultancy Group Leadership Team. As a government adviser, he has had a lead role in numerous large-scale reform programmes across the world. He was recently based in Brunei where he reported directly to the permanent secretary while leading the setting up of the national Literacy and Numeracy Coaching Programme across all schools in the country. Richard led Closing the Gap: Test and Learn for the Department for Education in England which involved 800 schools in the implementation of large-scale randomised controlled trials (assessing the potential of a number of approaches to the improvement of literacy and numeracy attainment). He is currently Programme Director for the DfE's new post-graduate route into teaching, Future Teaching Scholars. Richard is co-author with Eleanor Dommett of Teacher-Led Research: How to design and implement randomised controlled trials and other forms of experimental research and of Neuroscience for Teachers: applying brain science in the classroom (with Eleanor Dommett and Ian Devonshire).

**Steve Cross**  
Freelance



Steve Cross is a Wellcome Public Engagement Fellow, public engagement consultant and stand-up comedian. Steve used to be a lab scientist, before working in science centres, museums (he curated the Medicine Now gallery where our drinks reception take place) and universities. Steve was Head of Public Engagement at UCL for seven years, and there founded the international research comedy network Bright Club. He now trains experts of all kind to be funny and helps them get on stage to develop their skills. Steve is the host of Science Showoff, and part of the team behind the London Scicomm Symposium. He helps universities, research centres and cultural organisations to embed public engagement in their work.

**Agnieszka Dębska**  
The Nencki Institute of  
Experimental Biology Polish  
Academy of Sciences



Agnieszka Dębska is Postdoctoral Researcher in the Laboratory of Psychophysiology at the Nencki Institute of Experimental Biology, Polish Academy of Sciences. Her current interests focuses on behavioural and neural correlates of reading and spelling deficits.

**Janina Eberhart**  
University of Cambridge



My research interest concerns children' executive function development in a classroom context. I would like to better understand how teachers can support children's executive function.

**Nadine Gaab**  
Boston Children's  
Hospital/Harvard University  
nadine.gaab@



Nadine Gaab, Ph.D. is an Associate Professor of Pediatrics at Boston Children's Hospital and the Harvard Medical School and a member of the faculty at the Harvard Graduate School of Education. She grew up in Germany and received her PhD from the University of Zurich in Switzerland but conducted most of her doctoral research at the Harvard Medical School. She then did her postdoctoral work at Stanford and MIT with John Gabrieli. She started at Boston Children's Hospital in 2007 and her work at the Laboratories of Cognitive Neuroscience focuses on auditory and language processing in the human brain and its applications for the development of typical and atypical language and literacy skills from infancy to adolescence. She primarily works on the early identification of children at- risk for language-based learning disabilities such as developmental dyslexia, the neural correlates of reading development, environmental and genetic factors that influence language and reading development as well as the development and implementation of screening practices for young children. She works at the intersection of developmental cognitive neuroscience, clinical/educational practice and public policy with a special focus on early identification and implementation of real-world changes for struggling readers. The Gaablab works closely with numerous public and private schools within the Greater New England area and Dr. Gaab is a frequent speaker in the community. For more info please see [gaablab.com](http://gaablab.com)

**Berna Guroglu**  
Leiden University



Berna Guroglu is professor neuroscience of social relations at the Brain and Development Research Center of Leiden University in the Netherlands. She studies the links between social, cognitive and brain development across adolescence from a neuroscientific perspective. Using behavioral and fMRI assessments, her current research focuses on brain development and the neural processes involved in social decision-making and (social) learning. She is interested in the role of the social context on processes of learning, specifically in relation to peer relationships (e.g., friendships) and status within the peer group (e.g., popularity). She is interested in how the social context in which learning takes place influences learning and the related neurocognitive processes in positive (e.g., learning together with friends can be motivating) or negative (e.g., learning with friends can be distracting) ways and how these processes are related to social and brain development across childhood and adolescence.

**Charlotte Hindley**  
Platt Bridge Community School



Charlotte Hindley is Assistant Head and an outstanding teacher at Platt Bridge Community School, in Northern England. Platt Bridge serves an area of high socio-economic deprivation and was judged Outstanding in its most recent Ofsted visit. Charlotte's passion for teaching and learning and her quality first practice ensure that all pupils in her Key Stage make good and rapid progress. In addition to her role, she also delivers professional development both in the UK and internationally. Charlotte works as part of her local Teaching School Alliance, Westbridge, in a role co-leading Research and Development. As part of this role, she explores the effectiveness and impact of existing classroom strategies and new initiatives. Previously, she has worked alongside her colleague to design and carry out two randomised control trials on the impact of spelling tests. This year, they have carried out a small scale RCT into multiple choice testing as a learning event, as part of a wider study into the use of Neuroscience practices to support pupils' learning. She would be interested in continuing to discuss the impact of Neuroscience on children's memory, comprehension skills and acquisition of new learning. She would like to discuss other research in these fields that other practitioners, schools and organisations have carried out.

**Michael Hobbiss**  
University College London



Following an undergraduate degree in Psychology and Philosophy, I spent 8 years as a secondary school teacher in a variety of roles and responsibilities, before returning to study for my PhD. I am interested in the types of cognitive control required for educational success, especially during the period of adolescence. How well do young people, whose ability to control their thoughts and attention is still developing, cope with the sometimes overwhelming number of concurrent information sources in the modern world? What differences are there between adolescents and adults, and what do these differences tell us about brain and cognitive development in this period? I run laboratory experiments and also work with schools to try to answer these sorts of questions, measuring things like distraction, mood and multi-tasking ability. I'm also very interested in the translation of research into teaching practice, and the challenges of applied research in education in general. I am always keen to hear from and speak to others who are also grappling with these issues, such as school recruitment, teacher buy-in, impact minimisation in schools etc.

**Paul Howard-Jones**  
University of Bristol



Paul Howard-Jones has authored numerous reviews and one of the first text books in the area of Neuroscience and Education (Routledge, 2010). He has participated in many international academic and public debates regarding the interrelation of these two diverse subject areas and is currently implementing neuroscience into Initial Teacher Education at the University of Bristol (supported by the Wellcome Trust). He has specific research interests in the cognitive and neural processes around learning games, using research methods ranging from classroom observation to neuroimaging. Last year he completed a fellowship at UNESCO (Geneva) focused on the relation of neuroscience to global educational and cultural contexts. He is more widely known for his contributions to Channel Four's "Secret Life of Four Year Olds" and other broadcasts, and his second book "A Short History of the Learning Brain" has just been published by Routledge.

**Heidi Johansen-Berg**  
University of Oxford



Heidi Johansen-Berg is a Wellcome Principal Research Fellow and Director of the new Wellcome Centre for Integrative Neuroimaging (WIN), based at FMRIB at the University of Oxford. The WIN aims to exploit the ability of non-invasive neuroimaging to bridge the gap between laboratory neuroscience and human health. Heidi's own research group investigates plasticity and recovery in the sensorimotor system, with particular focus on white matter plasticity.

**Daria Makarova**  
Swanshurst School

I am currently Deputy Head of Science at Swanshurst School, Birmingham. My background is from psychology having graduated with a degree in Natural Sciences (Experimental Psychology) from Cambridge University and an MSc in Clinical Psychology (Warwick University). I am a passionate proponent of evidence-based practice and applying current research in schools. I was involved in the Early Adopter small-scale teacher-led randomised controlled trials in 2014-2015 researching the effects of peer versus teacher feedback on performance in essays. Since then I have collaborated on a large RCT examining progress in mixed ability sets versus standard sets in science at KS3. My current research is focused on applying memory research to teaching and the effects of low-stakes pre-testing on high-stakes exam performance. I am particularly interested in applying neuroscience research to improve outcomes for pupils in secondary school in science. Specifically, how best to utilise neuroscience research to prepare students for the higher cognitive and motivational demands of the new specifications.

**Robert Plomin**  
King's College London



Robert Plomin is MRC Research Professor in Behavioural Genetics at the Institute of Psychiatry, Psychology and Neuroscience, King's College London. He has published more than 800 papers and is the author of the best-selling textbook in the field as well as a dozen other books. After 40 years of research, he has come to the view that inherited DNA differences are the major systematic force that makes us who we are as individuals - our mental health and illness, our personality and our cognitive abilities and disabilities. The environment is important but it works completely different from the way we thought it worked. He will describe his research on educationally-relevant traits that has led him to these dramatic conclusions and he will consider their implications for education. The second half of his talk will be about the DNA revolution because now, for the first time, we can predict educationally relevant traits from DNA alone. This is a game changer for education, as well as for basic research charting the pathways between genes, brain and behaviour. The title of his talk and of his forthcoming book is *Blueprint: How DNA Makes Us Who We Are* (Penguin Press, 1 October 2018).

**Miriam Reiner**  
Technion



My research integrates neuroscience methods and virtual/augmented reality (V/AR) to identify conditions for enhanced learning, memory and problem solving. Briefly, I correlate stimuli in a V/AR with behavioral/brain/physiological measures such as EEG and eye-trackers, in an attempt to identify conditions for optimal learning. This was inspired by my earlier work on thought experiments and conceptualization in physics. In a typical experiment, participants perform a task in an immersive-controllable V/AR, while connected to brain/physiological sensing devices such as EEG, eye-trackers. Among my published results: multimodal cues reduce processing time and error rate compared to unisensory cues by ~35%/~20%; memory consolidation is enhanced significantly following neurofeedback of elevated theta brain oscillations, and the speed-accuracy-tradeoff switches from positive to negative after neurofeedback, suggesting a technology for expedited memory consolidation; Memory is underlying 'insight', thus I looked at the brain oscillations associated with insight, and found that 'insight', but not analytical problem solving, correlates uniquely with elevated beta and gamma oscillations in the frontal areas, hinting at a possible neuroregulation protocol that may enhance insight; identified neural signatures of errors, even before they happen, and unique EEG signals correlate with unique patterns pointing at an error-correction theory in learning. These results were integrated into a theory for e-learning systems, 'beaming', i.e. creating a digital 'double' of a person, and then reconstruct 'her' in real time, remotely, in multiple locations, in 3D, for 'face-to-face' like interactions with remote learners. In parallel, I developed an objective method to assess learning based on EEG measures.

**Michael Skeide**  
Max Planck Institute for Human  
Cognitive and Brain Sciences



Michael studied linguistics and neuroscience at Heidelberg University (Germany) and Harvard University. He obtained a Ph.D. from Leipzig University (Germany) for his work on brain-maturational factors underlying the emergence of language comprehension (syntactic and semantic processing). Michael is now a postdoctoral researcher at the Max Planck Institute for Human Cognitive and Brain Sciences. He combines genetic, neural and behavioral methods to study the ontogenetic origins of language, literacy and mathematics.

**Megan Sumeracki**  
Rhode Island College



Megan Sumeracki (formerly Smith) is an Assistant Professor at Rhode Island College. She received her Master's in Experimental Psychology at Washington University in St. Louis and her PhD in Cognitive Psychology from Purdue University. Megan studies human learning and memory, specifically applying the science of learning in educational contexts. Her research focuses on retrieval-based learning strategies, and the way retrieval can improve meaningful learning. Megan is passionate about bridging the gap between research and practice in education. In an effort to promote more conversations between researchers and practitioners, she co-founded The Learning Scientists ([www.learningscientists.org](http://www.learningscientists.org)).

**Yana Weinstein**  
University of Massachusetts  
Lowell



Yana Weinstein is an Assistant Professor at University of Massachusetts, Lowell. She received her PhD in Psychology from University College London in 2009 and then had 4 years of postdoctoral training at Washington University in St. Louis. The broad goal of her research is to help students make the most of their academic experience. Yana's research interests lie in improving the accuracy of memory performance and the judgments students make about their cognitive functions. Yana tries to pose questions that have direct applied relevance, such as: How can we help students choose optimal study strategies? Why are test scores sometimes so surprising to students? And how does retrieval practice help students learn?

**Glenn Whitman**  
The Center for Transformative  
Teaching and Learning,  
St. Andrew's Episcopal School



Glenn Whitman (@gwhitmancttl) is the co-author of Neuroteach: Brain Science and the Future of Education and directs the Center for Transformative Teaching and Learning at St. Andrew's Episcopal School. Glenn is a former Martin Institute for Teaching Excellence Fellow and author of Dialogue with the Past: Engaging Students and Meeting Standards through Oral History as well as co-editor of Think Differently and Deeply, the international publication of the CTTL. Glenn is also a blogger for Edutopia. Glenn earned his MALS from Dartmouth College and a BA from Dickinson College. Glenn has presented at more than a dozen, major conferences world-wide including: New Teacher Center Symposium (2018), SXSWedu (2016, 2017), Festival of Education (UK, 2015, 2017), Ideas in Education Festival (2015, 2016), researchEd (2015, 2016, 2017), National Association of Independent Schools Annual Conference (2013, 2017), National Network of Schools in Partnership (2018), and Learning and the Brain Conference (2016, 2017, 2018). His most recent publications include: "A Bridge No Longer Too Far: A Case Study of One School's Exploration of the Promise and Possibilities of Mind, Brain, and Education Science for the Future of Education" in Mind, Brain and Education and "Bridging the Gap Between Mind, Brain, and Education Research and Practice: One School's Replicable Model in Impact the Journal of the Chartered College of Teaching.

# Poster abstracts

## Session A

### **Watching the brain during the acquisition on new words with rich and poor meaning: an ERP study**

Roberto A. Ferreira<sup>1</sup>, Patricia Román<sup>2</sup>, Ton Dijkstra<sup>3</sup>,

<sup>1</sup>Universidad Católica de la Santísima Concepción; <sup>2</sup>Universidad Loyola Andalucía; <sup>3</sup>Radboud University

### **Neuronal plasticity during foreign language learning in adulthood**

Sarah Steber<sup>1,2</sup>, Sonja Rossi<sup>2</sup>

<sup>1</sup>Department of Psychology, Leopold-Franzens-University, Innsbruck, Austria; <sup>2</sup>Department for Hearing, Speech, and Voice Disorders of the Medical University of Innsbruck, Austria

### **How the brain attunes to complex sentence processing: The tripartite relationship between cognitive, brain structural, and brain functional maturation**

Anja Fengler<sup>1</sup>, Lars Meyer<sup>2</sup>, Angela D. Friederici<sup>2</sup>

<sup>1</sup>Martin Luther University of Halle-Wittenberg, University of Leipzig; <sup>2</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig

### **Working memory moderates the relationship between domain-specific skills and mathematics achievement**

Lucy Cragg<sup>1</sup>, Camilla Gilmore<sup>2</sup>

<sup>1</sup>University of Nottingham; <sup>2</sup> Loughborough University

### **Using artificial orthographies and fMRI to investigate abstraction along the ventral visual stream**

Jo Taylor<sup>1</sup>, Matthew H. Davis<sup>2</sup>, Kathleen Rastle<sup>3</sup>

<sup>1</sup>Aston University; <sup>2</sup>MRC Cognition and Brain Sciences Unit, <sup>3</sup>Royal Holloway University of London

### **Domain-general predictors of mathematics skills in 4-year-olds: The role of executive functions and language skills**

Andrea Diaz-Barriga Yanez<sup>1</sup> Daniel J. Carroll<sup>1</sup>, Danielle Matthews<sup>1</sup>, Michelle McGillion<sup>1</sup>

<sup>1</sup>The University of Sheffield

### **The teenage brain: Public perceptions of neurocognitive development during adolescence**

Sibel Altikulaç<sup>1</sup>, Nikki C. Lee<sup>1</sup>, Chiel van der Veen<sup>1</sup>, Ilona Benneker<sup>1,2</sup>, Lydia Krabbendam<sup>1</sup>, Nienke van Atteveldt<sup>1</sup>

<sup>1</sup>Amsterdam, Vrije Universiteit Amsterdam; <sup>2</sup>Breda, Mencia de Mendozalyceum

### **Relationship between resting-state connectivity and social network structure in school-aged girls**

Carolyn Beth McNabb<sup>1</sup>, Laura Grace Burgess<sup>1</sup>, Amy Fancourt<sup>2</sup>, Patricia Riddel<sup>1</sup>, Kou Murayama<sup>1</sup>

<sup>1</sup>University of Reading; <sup>2</sup>Queen Anne's School

### **Neurophysiological and cognitive mechanisms of enhancing intelligent behaviour**

Anna-Katharine Brem<sup>1</sup>, Karen Mansfield<sup>1</sup>, Franziska Plessow<sup>2</sup>, James McKanna<sup>3</sup>, Todd Thompson<sup>2</sup>, Jessamy Norton-Ford Almquist<sup>4</sup>, Umut Orhan, Misha Pavel<sup>3</sup>, Alvaro Pascual-Leone<sup>2</sup>, Mathan Santosh<sup>4</sup>, Nick Yeung<sup>1</sup>, Roi Cohen Kadosh<sup>1</sup>

<sup>1</sup>University of Oxford; <sup>2</sup>Harvard Medical School; <sup>3</sup>Northeastern University; <sup>4</sup>Honeywell Labs

### **Associations between executive functions and maths and science misconceptions in primary school children**

Claire R. Smid<sup>1a</sup>, Hannah R. Smith<sup>1a</sup>, Roshni Modhvia<sup>2a</sup>, Emily K. Farran<sup>3</sup>, Iroise Dumontheil<sup>1</sup>, Denis Mareschal<sup>1</sup>, the UnLocke team

<sup>a</sup>authors contributed equally; <sup>1</sup>Birkbeck, University of London; <sup>2</sup>University of Surrey; <sup>3</sup>University College London

### **Reading-induced shifts of cortical speech representations in dyslexic and typically reading children**

Linda Romanovska<sup>1</sup>, Roefje Janssen<sup>1</sup>, Milene Bonte<sup>1</sup>

<sup>1</sup>Department of Cognitive Neuroscience, Faculty of Psychology and Neuroscience, Maastricht University

### **Look math anxiety in the eyes: a physiological study.**

Sara Caviola<sup>1</sup>, Karolina Farr<sup>1</sup>, Dénes Szűcs<sup>1</sup>

<sup>1</sup>Department of Psychology, University of Cambridge

### **Reading ability modulates the brain network of children with mathematical difficulties**

Edward Z. Mei<sup>1</sup>, Tanya M. Evans<sup>2</sup>, Michael A. Skeide<sup>3</sup>, John Kochalka<sup>1</sup>, Lang Chen<sup>1</sup>, Mark Beidelman<sup>1</sup>, Marie Schaer<sup>4</sup>, V. Menon<sup>1</sup>

<sup>1</sup>Stanford University; <sup>2</sup>University of Virginia; <sup>3</sup>Max Planck Institute for Human Cognitive and Brain Sciences; <sup>4</sup>University of Geneva

### **Task preparation and emotion regulation in numerical cognition**

Silke Maria Bieck<sup>1</sup>, Elise Klein<sup>2</sup>, Johannes Bloechle<sup>2</sup>, Julia Bahnmueller<sup>123</sup>, Korbinian Moeller<sup>123</sup>

<sup>1</sup>LEAD Graduate School and Research Network, University of Tuebingen & Leibniz-Institut für Wissensmedien, Tuebingen; <sup>2</sup>Leibniz-Institut für Wissensmedien, Tuebingen; <sup>3</sup>Department of Psychology, University of Tuebingen

### **Interference and problem size effect in multiplication fact solving: Individual differences in brain activations and arithmetic performance**

Alice De Visscher<sup>1</sup>, Stephan E. Vogel<sup>2</sup>, Gernot Reishofer<sup>3</sup>, Eva Hassler<sup>3</sup>, Karl Koschutnig<sup>3</sup>, Bert De Smedt<sup>4</sup>, Roland H. Grabner<sup>2</sup>

<sup>1</sup>Université catholique de Louvain, Belgium; <sup>2</sup>University of Graz, Austria; <sup>3</sup>Medical University of Graz, Austria; <sup>4</sup>University of Leuven, Belgium

### **Context dependent memory effects as measured in virtual reality: effects of age and working memory capacity**

Franc Donkers<sup>1</sup>, Mari Ader<sup>1</sup>, Mia Mirecki<sup>1</sup>, Elrisfa Magistarina<sup>1</sup>, Kristaps Bekis<sup>1</sup>

<sup>1</sup>Maastricht, Maastricht University

### **The effect of acute physical activity on children's memory for language learning**

Carla Pastorino Campos<sup>1</sup>, John N. Williams<sup>1</sup>

<sup>1</sup>University of Cambridge

### **Moving towards spaced learning in medical education: time to start an instructional revolution?**

Marjolein Versteeg<sup>1</sup>, Paul Steendijk<sup>1</sup>

<sup>1</sup>Leiden, Leiden University Medical Center

### **A brain-inspired method for second language vocabulary learning**

Peta Baxter<sup>1</sup>, Harold Bekkering<sup>1</sup>, Ton Dijkstra<sup>1</sup>, Mienke Droop<sup>2</sup>, Marianne van den Hurk<sup>2</sup>, Frank Leoné<sup>1</sup>

<sup>1</sup>Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour; <sup>2</sup>Radboud University Nijmegen, Behavioural Science Institute

### **Domain-general skills in early learning? Cross-sectional and longitudinal data on emerging mathematics, the preschool and the home educational environment point beyond attention maturation**

Gaia Scerif<sup>1</sup>, Emma Dove<sup>1</sup>, Anne Mills<sup>1</sup>, Megan von Spreckelsen<sup>1</sup>, Daniel Ansari<sup>2</sup>, Ann Dowker<sup>1</sup>, Rebecca Merkley<sup>2</sup>, Victoria Murphy<sup>1</sup>

<sup>1</sup>University of Oxford, <sup>2</sup>University of Western Ontario

## Session B

### **Learning numbers: effects of learning new number symbols on number processing-related brain activity**

Fabian C.G. van den Berg<sup>1</sup>, P. de Weerd<sup>1</sup>, L.M. Jonkman<sup>1</sup>

<sup>1</sup>Maastricht, Maastricht University

### **Mind-wandering in children: Examining task-unrelated thoughts in laboratory and classroom settings, and the association with executive functions**

Esther H.H. Keulers<sup>1</sup>, Lisa M. Jonkman<sup>2</sup>

<sup>1</sup>Department of Neuropsychology & Psychopharmacology, Faculty of Psychology and Neuroscience, Maastricht University; <sup>2</sup>Department of Cognitive Neuroscience, Faculty of Psychology and Neuroscience, Maastricht University.

### **How does the form of feedback influence the way we process the message? An EEG Study**

Chelsea Dainton<sup>1</sup>, Bertram Opitz<sup>1</sup>, Naomi Winstone<sup>1</sup>

<sup>1</sup>University of Surrey

### **Executive functions explain unique variance in mathematics but not science performance, in primary school children aged 5-10 years**

Su Morris<sup>1</sup>, Emily Farran<sup>1</sup>, Iroise Dumontheil<sup>2</sup>

<sup>1</sup>UCL Institute of Education; <sup>2</sup>Birkbeck, University of London

### **Eye tracking as a measure of strategy use in number sense and mathematics**

Anne van Hoogmoed<sup>1</sup>

<sup>1</sup>University of Groningen

### **White matter alterations and tract lateralization in children with isolated spelling deficits and dyslexia**

Chiara Banfi<sup>1</sup>, Karl Koschutnig<sup>1</sup>, Kristina Moll<sup>2</sup>, Gerd Schulte-Körne<sup>2</sup>, Andreas Fink<sup>1</sup>, Karin Landerl<sup>1</sup>

University of Graz<sup>1</sup>, Ludwig-Maximilian University, Munich<sup>2</sup>

### **Suboptimal processing of print in dyslexics can not be explained only by their poorer reading - fMRI study**

Agnieszka Dębska<sup>1</sup>, Magdalena Łuniewska<sup>1</sup>, Einar Mencl<sup>2</sup>, Kenneth Pugh<sup>2</sup>, Katarzyna Jednoróg<sup>1</sup>

<sup>1</sup>Nencki Institute of Experimental Biology, <sup>2</sup>Haskins Laboratories

**The componential nature of arithmetic: implications for interventions for children with arithmetical difficulties.**

Ann Dowker<sup>1</sup>

<sup>1</sup>Department of Experimental Psychology, Oxford University

**Language development in preschool children participating in a multimodal music-based pilot project**

Matthieu Paré<sup>1</sup>, Jean-François Lepage<sup>1</sup>, Alain Savoie<sup>1</sup>

<sup>1</sup>Sherbrooke, University of Sherbrooke;

**What skills predict children's understanding of causal processes?**

Selma Dundar-Coecke<sup>1</sup>, Andy Tolmie<sup>1</sup>

<sup>1</sup> Birkbeck/UCL Centre for Educational Neuroscience & Department of Psychology and Human Development, UCL Institute of Education

**Physical activity and sedentary behavior in adolescents in vocational education and training: Compositional patterns and predicting executive performance**

Hieronymus Gijsselaers<sup>1</sup>, Bob Ramakers<sup>1</sup>, Hans Savelberg<sup>2</sup>, Amika Singh<sup>3</sup>, Renate de Groot<sup>1</sup>

<sup>1</sup>Open University of the Netherlands; <sup>2</sup>Maastricht University <sup>3</sup>VU University Amsterdam

**Reconsolidation of memory: the case of learning a foreign language**

Ayelet Katzoff<sup>1</sup>, Tehiya Winograd Jean<sup>2</sup>, Carol Goldfus<sup>3</sup>

<sup>1</sup>Levinsky College of Education; <sup>2</sup>Talpyot College of Education and Levinsky College of Education; <sup>3</sup>University of the Free State South Africa

**The effect of classroom noise on creativity in primary school children**

Jessica Massonnié<sup>1</sup>, Cathy J. Rogers<sup>1</sup>, Denis Mareschal<sup>1</sup>, Natasha Kirkham<sup>1</sup>

<sup>1</sup>Birkbeck, University of London

### **Learning by moving: Unraveling the mechanisms of physical activity's effect on cognition by examining functional changes in the brain**

A.G.M. (Anne) de Bruijn<sup>1</sup>, I.M.J. (Irene) van der Fels<sup>2</sup>, R.J. (Remco) Renken<sup>3</sup>, D.D.N.M. (Danny) Kostons<sup>1</sup>, E. Hartman<sup>2</sup>, C. (Chris) Visscher<sup>2</sup>, R.J. (Roel) Bosker<sup>1</sup>

<sup>1</sup>Groningen Institute for Educational Research (GION), University of Groningen; <sup>2</sup>Center for Human Movement Sciences, University Medical Centre Groningen (UMGC), University of Groningen; <sup>3</sup>Neuroimaging Center, University Medical Centre Groningen (UMCG), University of Groningen

### **Tailoring the individual learning experience to primary school children**

Susanne de Mooij<sup>1</sup>, Han van der Maas<sup>2</sup>, Maartje Raijmakers<sup>2</sup>, Iroise Dumontheil<sup>1</sup>, Natasha Kirkham<sup>1</sup>,

<sup>1</sup>Birkbeck, University of London; <sup>2</sup>University of Amsterdam

### **Constructivist against direct instruction approaches to teaching: Empirical evidence from a study exploring the effects of different learning environments on primary school students' decision-making competence**

Maria Tsapali<sup>1</sup>, Michelle R Ellefson<sup>1</sup>

<sup>1</sup>University of Cambridge, UK

### **Cognitive neuroscience in the classroom: relationship between education and neuroscience in Italy**

Demis Basso<sup>1</sup>, Serena Giovannini<sup>1</sup>, Alice Tovazzi<sup>2</sup>

<sup>1</sup>Cognitive and Educational Laboratory, Free University of Bozen, Italy; <sup>2</sup>International Center of Studies on Educational Research and Advanced Training, Ca' Foscari University of Venice, Italy

### **Learning to play a videogame: The effects of in-game tutorials on players' affect and cognition**

Julien Mercier<sup>1</sup>, Pierre Chalfoun<sup>2</sup>, Babak Khosravifar<sup>1</sup>

<sup>1</sup>NeuroLab, University of Quebec in Montreal; <sup>2</sup>User Research Lab – Ubisoft Montreal

### **Spaced learning: An approach to minimize the forgetting curve, or much more?**

Gili Joseph<sup>1</sup>, Avigdor Yaakobi<sup>1</sup>, Ronit Ram-Tsur<sup>1</sup>, Miri Getz<sup>1</sup>, Ilana Avissar<sup>1</sup>

<sup>1</sup>The Faculty of Science, Kibbutzim College of Education, Technology and the Arts

## Session C

### **Implicit spatial perspective taking: an fNIRS investigation into the role of the mirror neuron system**

Natania Shuyi Ang<sup>1</sup>, Birgit Brucker<sup>2</sup>, Thomas Dresler<sup>1,3</sup>, Ann-Christine Ehlis<sup>1,3</sup>, Peter Gerjets<sup>1,2</sup>

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### **Enhancement of cognitive control in rewarding contexts in adolescence and adulthood**

Lucía Magis-Weinberg<sup>1</sup>, Ruud Custers<sup>2</sup>, Iroise Dumontheil<sup>3</sup>

<sup>1</sup>University of California, Berkeley; <sup>2</sup>Utrecht University; <sup>3</sup>Birkbeck, University of London

### **Commonalities and differences in brain activation associated with ordinal processing: Evidence from functional magnetic resonance imaging**

Stephan E. Vogel<sup>1</sup>, Sabrina Turker<sup>1</sup>, Lena Schulz<sup>1</sup>, Sonja Zeidler<sup>1</sup>, Ian Lyons<sup>2</sup>, Daniel Ansari<sup>3</sup>, Roland H. Grabner<sup>1</sup>

<sup>1</sup>University of Graz; <sup>2</sup>University of Georgetown; <sup>3</sup>University of Western Ontario

### **Young children's responses to harm and injustice – an EEG study**

Minkang Kim<sup>1</sup>, Ling Wu<sup>1</sup>; Wendy Sae Me Lee<sup>1</sup>, Jean Decety<sup>2</sup>

<sup>1</sup>The University of Sydney; <sup>2</sup>Child Neurosuite, The University of Chicago

### **Neural and behavioral development of direct versus reflected self-evaluations in adolescence**

Renske van der Cruijssen<sup>1</sup>, Sabine Peters<sup>1</sup>, Eveline A. Crone<sup>1</sup>

<sup>1</sup>Department of Developmental Psychology, Leiden University, the Netherlands

### **Neurocognitive processing of arithmetic complexity depends on math ability – An fNIRS study**

Christina Artemenko<sup>1,2</sup>, Mojtaba Soltanlou<sup>1,2</sup>, Thomas Dresler<sup>2,3</sup>, Ann-Christine Ehlis<sup>2,3</sup>, Hans-Christoph Nuerk<sup>1,2</sup>

<sup>1</sup>Department of Psychology, University of Tübingen, Germany; <sup>2</sup>LEAD Graduate School & Research Network, University of Tübingen, Germany; <sup>3</sup>Department of Psychiatry and Psychotherapy, University Hospital of Tübingen, Germany

### **Data-driven subtyping of executive-function-related behavioural problems in children**

Joe Bathelt<sup>1</sup>, Joni Holmes<sup>1</sup>, Duncan Astle<sup>1</sup>

<sup>1</sup>University of Cambridge

## **Phasic heart rate changes associated with feedback and letter-speech sound learning in dyslexia**

Gorka Fraga González<sup>1</sup>, Dirk J.A. Smit<sup>2</sup>, Melle J. W. van der Molen<sup>3</sup>, Jurgen Tijms<sup>4</sup>, Cornelis J. Stam<sup>5</sup>, Eco J.C. de Geus<sup>2,6</sup>, Maurits W. van der Molen<sup>7</sup>

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<sup>6</sup>Neuroscience Campus Amsterdam, VU University, Amsterdam; <sup>7</sup>Department of Psychology, University of Amsterdam, Amsterdam Brain and Cognition, University of Amsterdam

## **Intervention on mathematics in students with ADHD**

Beatriz Vargas Dorneles<sup>1</sup>, Luciana Vellinho Corso<sup>2</sup>, Jacqueline Raquel Bianchi Enricone<sup>3</sup>, Yasmini Lais Spindler Sperafico<sup>4</sup>

<sup>1</sup>Universidade Federal do Rio Grande do Sul (UFRGS); <sup>2</sup>UFRGS, Nelba Maria Teixeira Pisacco, Universidade Estadual de Ponta Grossa; <sup>3</sup>Universidade Regional Integrada do Alto Uruguai; <sup>4</sup>UFRGS

## **The neural correlates of academic self-concept in adolescence and their relation to making future-oriented academic choices**

Laura van der Aar<sup>1</sup>, Sabine Peters<sup>1</sup>, Eveline Crone<sup>1</sup>,

<sup>1</sup>Leiden University

## **Executive functions explain the link between socioeconomic status and mathematical skills in preschoolers**

Emma Blakey<sup>1</sup>, Danielle Matthews<sup>1</sup>, Lucy Cragg<sup>2</sup>, Daniel Carroll<sup>1</sup>

<sup>1</sup>University of Sheffield; <sup>2</sup>University of Nottingham

## **Theoretical model of arithmetic development and learning in children – evidence from empirical studies**

Mojtaba Soltanlou<sup>1</sup>, Christina Artemenko<sup>1</sup>, Thomas Dresler<sup>1</sup>, Hans-Christoph Nuerk<sup>1</sup>

<sup>1</sup>University of Tuebingen

## **A new theoretical framework that serves to improve inclusion of neuroscientific insights in school instruction**

Nadja Marie Mariager<sup>1</sup>

<sup>1</sup>University of Southern Denmark, Department for the Study of Culture, Education

## **Brain space: Improving spatial thinking with instructional videos**

Katie A. Gilligan<sup>1</sup>, Michael S.C. Thomas<sup>2</sup>, Emily K. Farran<sup>1</sup>

<sup>1</sup>UCL Institute of Education, University College London; <sup>2</sup>Birkbeck, University of London

### **Effects of anodal tDCS on arithmetic performance and electrophysiological activity**

Jochen A. Mosbacher<sup>1</sup>, Clemens Brunner<sup>1</sup>, Roland H. Grabner<sup>1</sup>

<sup>1</sup>University of Graz

### **Improving teaching with research from the learning sciences**

Tracey Tokuhama-Espinosa<sup>1</sup>

<sup>1</sup>Harvard University Extension School and the Latin American Faculty For Social Science Research in Ecuador

### **Value of a set of neuroscience concepts for lesson planning**

Vicki Hinesley<sup>1</sup>, Janet M Dubinsky<sup>2</sup>, Zhengsi Chang<sup>3</sup>, Marc Schwartz<sup>1</sup>

<sup>1</sup>University of TX Arlington; <sup>2</sup>Dept. Neuroscience, University of Minnesota, Minneapolis;

<sup>3</sup>University of Texas at Dallas

### **More than number sense: Associations between cognitive control, metacognition and arithmetic in primary school.**

Elien Bellon<sup>1</sup>, Wim Fias<sup>2</sup>, Bert De Smedt<sup>1</sup>

<sup>1</sup>KU Leuven; <sup>2</sup>Ghent University

### **The integration of science of learning into secondary initial teacher education**

Paul Howard-Jones<sup>1</sup>, Jayne Prior<sup>1</sup>, Ruth Bailey<sup>1</sup>, Konstantina Ioannou<sup>1</sup>

<sup>1</sup>University of Bristol

### **Enhancing human spatial skills: neurofeedback, machine learning and optimal performance - the case of upper alpha and mental rotation**

Miriam Reiner<sup>1</sup>

<sup>1</sup>The Virtual Reality and Neurocognition lab, Technion, Israel

## Session D

### **Inhibitory control and the neural correlates of science and maths reasoning in children**

Sumanapala, D. K.<sup>1</sup>, Wilkinson, H. R.<sup>1</sup>, Smid, C. R.<sup>1</sup>, Farran, E. K.<sup>2</sup>, Thomas, M. S. C.<sup>1</sup>, Dumontheil, I.<sup>1</sup>, Mareschal, D.<sup>1,3</sup>

<sup>1</sup>Birkbeck, University of London; <sup>2</sup>University College London; <sup>3</sup>UnLocke team

### **Integrating memories: How congruency and reactivation aid integration of old and new memories**

Marlieke van Kesteren<sup>1,2</sup>, Paul Rignanes<sup>3</sup>, Lydia Krabbendam<sup>2</sup>, Martijn Meeter<sup>1,3</sup>

<sup>1</sup>LEARN!; <sup>2</sup>Institute for Brain and Behavior Amsterdam, Vrije Universiteit Amsterdam; <sup>3</sup>Vrije Universiteit Amsterdam

### **Assessing the relationship between executive functions, emotional traits and educational attainment during adolescence**

Georgina Donati<sup>1</sup>, Emma Meaburn<sup>1</sup>, Iroise Dumontheil<sup>1</sup>

<sup>1</sup>Birkbeck, University of London

### **Elucidating the role of executive functioning and metacognition on academic outcomes**

Rina Pak Ying Lai<sup>1</sup>, Michelle M.R Ellefson<sup>1</sup>, Qian Wang<sup>2</sup>, Florrie Fei-Yin Ng<sup>2</sup>, Claire Hughes<sup>1</sup>

<sup>1</sup>University of Cambridge; <sup>2</sup>Chinese University of Hong Kong

### **Phonological awareness in children developing dyslexia – a longitudinal fMRI study**

Katarzyna Chyl<sup>1</sup>, Anna Banaszkiwicz<sup>1</sup>, Agnieszka Dębska<sup>1</sup>, Agata Źelechowska<sup>1</sup>, Artur Marchewka<sup>1</sup>, Anna Grabowska<sup>1</sup>, Katarzyna Jednoróg<sup>1</sup>

<sup>1</sup>Nencki Institute of Experimental Biology

### **Brain structure in elementary school late talking children with and without developmental dyslexia**

Agnieszka Kacprzak<sup>1</sup>, Katarzyna Chyl<sup>1</sup>, Agnieszka Dębska<sup>1</sup>, Gabriela Dzięgieł<sup>1</sup>, Magdalena Łuniewska<sup>1</sup>, Joanna Plewko<sup>1</sup>, Anna Grabowska<sup>1</sup>, Ewa Haman<sup>2</sup>, Katarzyna Jednoróg<sup>1</sup>

<sup>1</sup>Nencki Institute of Experimental Biology Polish Academy of Sciences, University of Warsaw; <sup>2</sup>University of Warsaw

### **Exploring the role of the hypersensitivity-to-interference in memory hypothesis in adults**

Alexander E. Heidekum<sup>1</sup>, Alice De Visscher<sup>2</sup>, Stephan E. Vogel<sup>1</sup>, Bert De Smedt<sup>3</sup>, Roland H. Grabner<sup>1</sup>

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**Visual and audiovisual processing of artificial letters in the prereading brain is related to early reading outcome**

Iliana Irimi Karipidis<sup>1</sup>, Georgette Pleisch<sup>1</sup>, Silvia Brem<sup>1</sup>

<sup>1</sup>Department of Child and Adolescent Psychiatry and Psychotherapy, University of Zurich;

**Early cerebral constraint on reading and on inhibitory control development**

Grégoire Borst<sup>1</sup>, Arnaud Cachia<sup>1</sup>, Olivier Houdé<sup>1</sup>

<sup>1</sup>LaPsyDE-CNRS, Université Paris Descartes

**Is metacognition of 'desirable difficulties' and applied to 'self-efficacy' the key to unlocking test anxiety in 10 – 12 year olds?**

Helen Barsham<sup>1</sup>

<sup>1</sup>University of Cambridge

**Similarity in motivation between friends at high school: Investigating behaviour and the brain**

Laura Grace Burgess<sup>1</sup>, Carolyn Beth McNabb<sup>1</sup>, Patricia Riddell<sup>1</sup>, Amy Fancourt<sup>2</sup>, Kou Murayama<sup>1,3</sup>

<sup>1</sup>University of Reading; <sup>2</sup>BrainCanDo, Queen Anne's School, Reading, UK; <sup>3</sup>Kochi University of Technology

**Symbolic approximate arithmetic relies more on number semantic processing: A training study of preschooler**

Wei Wei<sup>1</sup>, Wanying Deng<sup>1</sup>, Yu Liang<sup>1</sup>

<sup>1</sup>Department of Psychology and Behavioral Sciences, Zhejiang University, Hang Zhou

**Exposing practicing teachers to neuroscience concepts: Impact on teaching and classroom management**

Esther Grobgeld<sup>1</sup>, Isaac A. Friedman<sup>1</sup>, Ariela Teichman-Weinberg<sup>1</sup>

<sup>1</sup>The Achva Teacher Training Academic College, Israel

**Proportional reasoning: Improving students' performance by reducing the interference of natural numbers**

Reuven Babai<sup>1</sup>, Eldad Cohen<sup>1</sup>, Ruth Stavy<sup>1</sup>

<sup>1</sup>School of Education, Tel Aviv University

**Pretend play and the development of children's self-regulation skills: Are the results real or simply made-up?**

Tanya M. Paes<sup>1</sup>, Michelle R. Ellefson<sup>1</sup>

<sup>1</sup>University of Cambridge

### **"Skies of Manawak": A videogame for cognitive training**

Angela Pasqualotto<sup>1</sup>, Zeno Menestrina<sup>1</sup>, Irene Altarelli<sup>2</sup>, Paola Venuti<sup>1</sup>

<sup>1</sup>University of Trento; <sup>2</sup>France, Neurospin

### **Structural frameworks of educational neuroscience: In search of the best approach**

Astrid Schmied<sup>1</sup>

<sup>1</sup>University of Minnesota

### **The "Doppler" time management strategy in the context of a learning strategies and habits program**

Ignatius Gert Petrus Gous<sup>1</sup>

<sup>1</sup>Department of Biblical and Ancient Studies, University of South Africa

### **"The brain goes to school": Evaluating the impact of neuro-education training workshops**

Mónica Arson de Sousa Lemos<sup>1</sup>

<sup>1</sup>Colégio Pedro Arrupe (Lisbon)

### **The design and optimization of SMART Spaces: A science revision program utilizing a spaced learning framework.**

Liam O'Hare<sup>1</sup>, Alastair Gittner<sup>2</sup>, Patrick Stark<sup>1</sup>

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