

Book Review: Evolution of the Learning Brain – Or How You Got To Be So Smart...

Book by: Paul Howard-Jones

Reviewed by: Kelly Brown, UK Coaching

Wow, what a read! As a self-confessed learning geek, this book was by far the most fascinating I've read to date. I was taken on a learning journey of how molecules became organisms, which evolved into the learning brains of our primates, who later developed into humans as we know now. Over billions of years, one thing has remained – even a small organism such as e-coli has memory and the ability to learn and adapt. How we as humans can unlock our full learning brain, and the potential of others, by learning from evolution and forecasting the future of learning are the primary themes of Paul Howard-Jones' book.

Evolution of the Learning Brain has nine fascinating chapters, each as insightful as the next. The book is written in a friendly style, engaging the reader from start to end. Howard-Jones leaves no stone unturned and tells the story of how we developed into such intelligent learners, all from the evolution of a tiny molecule.



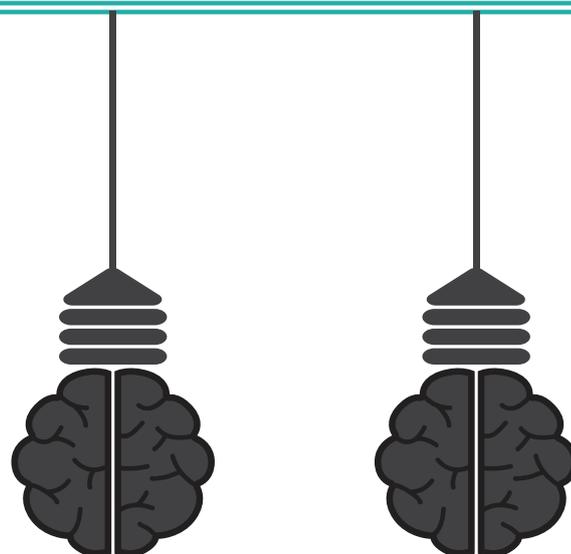
As individuals and as society, by mastering and distributing the ability of our brains to learn, we may earn the chance to transform ourselves and our future.



As a reader, you are taken on a journey through time, discovering how Charles Darwin was fundamental to discovering how even tiny species had the ability to remember and learn in order to survive. You also discover how Darwin was ahead of his time when writing a letter to the Secretary of the Educational Department in 1881, explaining that we should be less concerned with the object which learners interact with and more concerned about the nature of the interactions. He goes on to say how more emphasis should be placed on the ability to develop the learning brain as opposed to the accumulation of specific knowledge.

The evolutionary journey is jampacked with research examples, such as how sleep affects our ability to learn, and how fruit flies are also affected by lack of sleep when learning who their mating partner is. We also uncover how emotions linked to learning make for much stronger, vivid learning and how the part of the brain which triggers emotions is a neighbour of the part of the brain which holds the key to our memories. Due to their close proximity, 'emotional learning' often makes for longer lasting learning and enables learners to more easily recall this memorable learning.

As humans, we often think that we were the first to discover many things, and while that is frequently true, we realise through our evolutionary journey that 'social learning' from others is actually a fundamental trait within primates. Organically, primates use social learning, typically from an individual higher than themselves, to learn how to behave, survive and develop. Much like we may learn from a more knowledgeable other, or even as a young child learning from our parents and peers. Or much like learning from a great coach. We discover how a world of learning existed way before humans walked the planet.

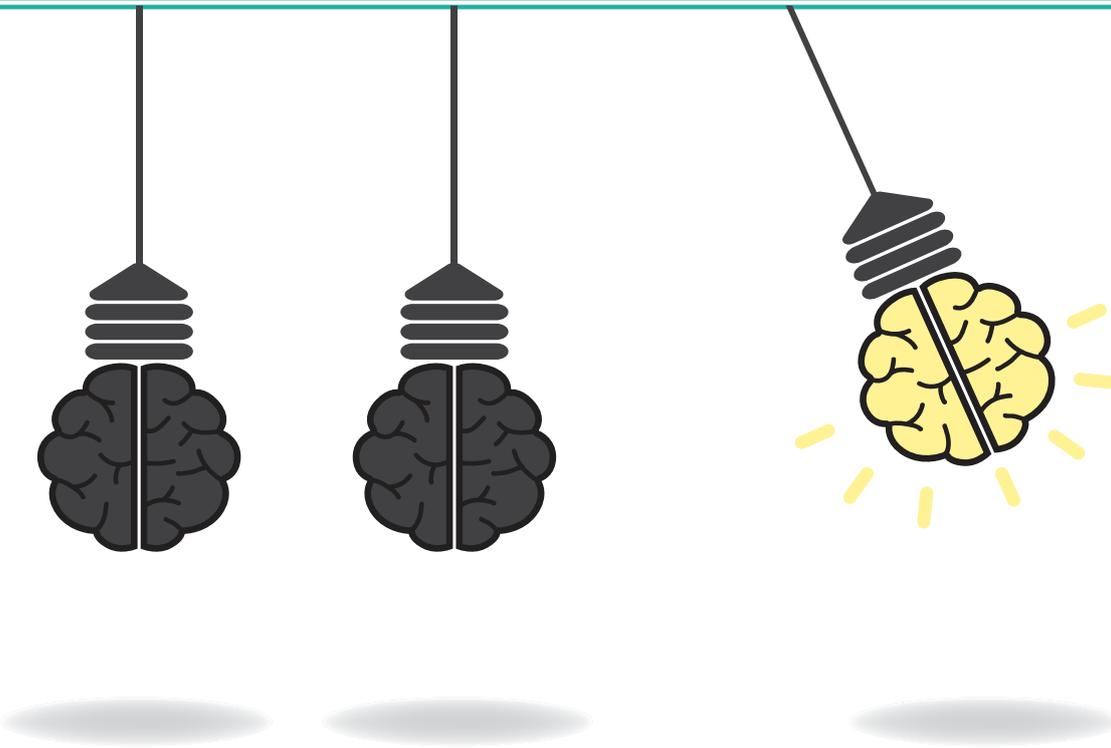


The book explores how social learning can best support us when learning things that are slightly trickier, and when our 'working brain' is being stretched. When we are learning something just ahead of reach this is known as the Zone of Proximal Development (ZPD), and we are best supported to achieve learning in this zone with the help of others, hence reverting to the learning practice of primates.

As the book considers the current landscape, it explores how we can learn better and how we can help others to learn better. One strategy explored is the use of gesture and sound, and how combining rhythm and language makes for stickier learning. Think about your own environment. Perhaps you are a teacher, coach or a parent and want to help others to remember information? This book explains how we can remember information better and explains the science behind it, informed by evolution.

Have you ever had a really creative idea to solve a problem, and wondered where it came from? Paul explains, through science, exactly that. The role social learning plays in creativity, and why more brains are better than one when trying to problem solve creatively.

The book explains how the traditional school education system is beneficial in some ways, but that evolution is perhaps the school of life. We learn that through scientific studies where people can recite a list of words regardless of whether they



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attended school, but the way in which they do so differs (ie people use clusters of categories that are meaningful to them). It explores the emergence of learning pedagogy, and that even in the first century AD, Quintilian (one of the first pedagogy practitioner's, or pedagogues) advised that people who support others to learn should use praise, always respond to questions, and include everyone in the learning experience. He even provided suggestions of how we support and guide others to learn, termed today as 'scaffolding'.

Fast forward a few pages and the book explores how we can tap into the natural reward system in the brain through simple techniques, and how learning practitioners can incorporate these into learning opportunities, thus increasing motivation, and the desire for lifelong learning. Whether you are a primate or a human, the best source of support is from the 'more knowledgeable other'. Despite the volume of information we can receive from technology, paper or other sources, a great supporting other can make sense of the learner's world and select specific information from the most appropriate sources to enhance their learning.

As the book considers the future, Howard-Jones uses a combination of knowledge from the past and scientific advances, to predict some future learning scenarios. He explores a number of potential scenarios, one of which was the potential for technology to play a part in connecting thoughts, feelings and core values as one big community,

to better humankind. Kevin Warwick (a neuroscientist) demonstrated the potential of this through an experiment he conducted by implanting electrodes into the nerve fibres of his and his wife's left arm. Over the internet, they were able to feel each other's pain and understand each other's thoughts. Another scenario played out is how technology can support learning practitioners to monitor engagement while learning, through mobile technology sensing brain activity and relaying the information to the learning practitioner, to help enhance the learning environment for everyone.

If you are curious about how we came to be, and how we can unlock our full potential, this book is for you.