Science of Learning
Strategic Research Theme

Winter Institute 2016

What the Brain Reveals about the Nature of Human Learning

Date: 12 January 2016 (Tuesday)

Time: 12:45 - 14:00

Venue: Room 101 & 104, Runme Shaw Building

[Sandwiches will be served with coffee]

Chair: Prof. Amy B M Tsui

Speaker: ***Professor Kevin Niall Dunbar***

Visiting Research Professor of the University of Hong Kong;
Director of the Laboratory for Complex Thinking, Creativity and Educational Neuroscience;
Professor of the Department of Human Development and Quantitative Methodology, College of Education, University of Maryland College Park

Abstract

In this lecture, Professor Dunbar will present his ongoing research into the underlying mechanisms involved in key aspects of reasoning and learning. Using fNIRS neuroimaging technologies he and his team have uncovered a variety of flexible strategies that people use when they reason about the underlying patterns of information that they encounter such as learning mathematics, science and literature. They have found that the types of relations presented and the goals of learners can be shaped to facilitate the use of successful reasoning strategies that facilitate learning. Furthermore, they have uncovered a distinct temporal signature of a network of brain sites activated during relational thinking that provide a new and deeper understanding of relational thinking. In an extension of this work, they have found that the same strategies and brain sites are used when students plan future situations. These results have led him to propose the Flexible Strategy Model of Learning as an alternative to the more brittle Fixed Strategy models. The discovery of different strategies used by students helps explain a number of paradoxes in human learning such as why students sometimes use previous experiences to understand current problems and sometimes ignoring these relevant experiences. Overall, this work demonstrates how educational research combined with neuroimaging can be used to elucidate the underlying mechanisms of learning in the Sciences and beyond, facilitating the translation of research into classroom practices.

This seminar is one of the Science of Learning Winter Institute 2016 activities.

For detailed information and registration, please visit
http://sol.edu.hku.hk/what-the-brain-reveals-about-the-nature-of-human-learning/

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