Meta-learning

Meta-learning is a branch of metacognition concerned with learning about one's own learning and learning processes.

The term comes from the meta prefix's modern meaning of an abstract recursion, or "X about X", similar to its use in metaknowledge, metamemory, and meta-emotion.

Meta learning model for teams and relationships

Marcial Losada and other researchers have attempted to create a meta learning model to analyze teams and relationships.[1] A 2013 paper provided a strong critique[2] of this attempt, arguing that it was based on misapplication of complex mathematical modelling. This led to its abandonment by at least one former proponent.[3]

The meta learning model proposed by Losada is identical to the Lorenz system, which was originally proposed as a simplified mathematical model for atmospheric convection. It comprises one control parameter and three state variables, which in this case have been mapped to "connectivity", "inquiry-advocacy", "positivity-negativity", and "other-self" (external-internal focus) respectively. The state variables are linked by a set of nonlinear differential equations.[4] This has been criticized as a poorly defined, poorly justified, and invalid application of differential equations.[2]

Losada and colleagues claim to have arrived at the meta learning model from thousands of time series data generated at two human interaction laboratories in Ann Arbor, Michigan, and Cambridge, Massachusetts,[1] although the details of the collection of this data, and the connection between the time series data and the model is unclear.[2] These time series portrayed the interaction dynamics of business teams doing typical business tasks such as strategic planning. These teams were classified into three performance categories: high, medium and low. Performance was evaluated by the profitability of the teams, the level of satisfaction of their clients, and 360-degree evaluations.

One proposed result of this theory is that there is a ratio of positivity-to-negativity of at least 2.9 (called the Losada line), which separates high from low performance teams as well as flourishing from languishing in individuals and relationships.[5] Brown and colleagues pointed out that even if the proposed meta-learning model were valid, this ratio results from a completely arbitrary choice of model parameters carried over from the literature on modeling atmospheric convection by Lorenz and others, without any justification.[2]

Ideas for implementation and goals

Meta learning can also be a very effective tool to assist students in becoming independently self-reflective. Students will require feedback in order to reflect on their learning, strengths, and weaknesses. Meta learning tasks will help students be more proactive and effective learners by focusing on developing self-awareness. Meta learning tasks would provide students with the opportunity to better understand their thinking

processes in order to devise custom learning strategies. The goal is to find a set of parameters that work well across different tasks so that learners start with a bias that allows them to perform well despite receiving only a small amount of task-specific data.

See also

- Learning styles
- Mentalization
- Metacognition
- Metaknowledge
- Metamemory
- Meta-emotion
- Self-regulated learning

References

1. (Losada, 1999; Losada & Heaphy, 2004; Fredrickson & Losada, 2005)
2. Brown, N. J. L., Sokal, A. D., & Friedman, H. L. (2013). The Complex Dynamics of Wishful Thinking: The Critical Positivity Ratio (https://www.ncbi.nlm.nih.gov/pubmed/23855896). American Psychologist. Electronic publication ahead of print.
3. Fredrickson, B. L. (2013) Updated thinking on positivity ratios. (http://www.unc.edu/peplab/publications/Fredrickson%202013%20Updated%20Thinking.pdf) American Psychologist. Electronic publication ahead of print.
4. (Losada, 1999; Fredrickson & Losada, 2005; for a graphical representation of the meta learning model see Losada & Heaphy, 2004)
5. (Fredrickson & Losada, 2005; Waugh & Fredrickson, 2006; Fredrickson, 2009)

Further reading

- Norton, L. & Walters, D. (2005). Encouraging meta-learning through personal development planning: first year students' perceptions of what makes a really good student (https://www.academia.edu/download/6126826/pr1.pdf#page=111). PRIME (Pedagogical Research In Maximising Education), in-house journal, Liverpool Hope University, 1 (1) 109–124.
- Meyer, J. H. F. & Shanahan, M. P. (2004). Developing metalearning capacity in students — Actionable theory and practical lessons learned in first-year economics (http://srhe.tandfonline.com/doi/abs/10.1080/1470329042000277020). Innovations in Education and Teaching International (Special issue: Meta learning in Higher Education), 41 (4) 443–458.
- Losada, M. (1999). The complex dynamics of high performance teams. *Mathematical and Computer Modelling*, 30 (9–10), pp. 179–192.[1] (http://losada.socialpsychology.org)
- Losada, M. & Heaphy, E. (2004). The role of positivity and connectivity in the performance of business teams: A nonlinear dynamics model. *American Behavioral Scientist*, 47 (6), pp. 740–765.[2] (https://web.archive.org/web/20100602052915/http://mattselker.org/Documents/positive%20to%20negative%20attractors%20in%20business%20teams.pdf)
- Fredrickson, B. L. & Losada, M. (2005). Positive affect and the complex dynamics of human flourishing. (http://www.unc.edu/peplab/publications/human_flourishing.pdf) *American Psychologist,* 60 (7) 678–686.[3] (http://losada.socialpsychology.org)

- Waugh, C. E. & Fredrickson, B. L. (2006). Nice to know you: Positive emotions, self-other overlap, and complex understanding in the formation of a new relationship. (http://www.unc.edu/peplab/publications/Waugh%20-%20PE-self-other%20overlap_in%20new%20relationships_JOPP.pdf) *The Journal of Positive Psychology*, 1 (2), 93–106.
- Fredrickson, B. L. (2009). *Positivity*. Crown Publishers, New York.

External links

- Summary of meta learning research by Dr. Losada (http://blog.enablersnetwork.com/2009/11/01/marcial-losada-explains-his-research-for-our-blog-readers/)
- Comment from Losada about executives implementing the model (http://www.leadingwithlift.com/blog/2010/02/22/increasing-profit-how-far-should-an-executive-go/comment-page-1/#comment-1080)
- Article about meta learning from Losada (part 1) (http://PositivePsychologyNews.com/news/guest-author/200812081289)
- Article about meta learning from Losada (part 2) (http://PositivePsychologyNews.com/news/guest-author/200812091298)
- Comment from Losada about negativity in the workplace (https://web.archive.org/web/20060902101254/http://www.tenfacesofinnovation.com/stories/archives/12)