



## Scientific Studying: Increasing Learning Power through Experiments

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### Abstract

We address the massive waste of intellectual resources caused by inefficient and ineffective studying by students all over the world. More specifically, we propose a study methodology that may significantly improve the learning power of students, as well as of anybody that intends to learn more efficiently and more effectively (for instance, researchers, managers, etc.). We define 'Traditional Studying' as the suboptimal methods of study that are widespread in all institutions from primary schools to universities. We re-explore the Scientific Management [1] in order to provide a remedy to this waste, namely a studying methodology that is no longer the result of a number of inputs learned unconsciously and applied mechanically since early childhood, but which crucially takes the scientific self-experiment as the centerpiece method leading to the achievement of a significant increase in learning power.

Through personal observation, a student often emulates the way an older sibling or a classmate studies. We ask the question whether these methodologies are optimal. We conclude that unless scientific experiments are conducted, it is impossible to know whether or not the methodologies used by the students are the optimal ones. Through a number of experiments we conducted with high school and university students, we have proven that it is possible to increase one's learning power by fifty percent in just a few months. Furthermore, the experiments revealed, for instance, that the increase of learning power in Math (often perceived as a rather – if not most, in some cases – difficult subject matter) has been significantly higher than the average increase in learning power. Our findings have far reaching consequences as they are compatible with theories on the modifiability of intelligence such as [2], and confirm studies revealing that brain activity (such as a decision-making task) increases more rapidly following a time of intense physical activity [3].

The innovative methodology we propose has the potential to significantly contribute to the improvement of the level of education around the world, through a series of self-designed and self-administered scientific experiments, thus implying little or no investment by the institutions but potentially yielding enormous beneficial results for our society.

### References

- [1] Taylor, Frederick Winslow. 1911. *The Principles of Scientific Management*. Dover Publications. New York.
- [2] Feuerstein, Reuven, Rafael S. Feuerstein, and Louis H. Falik. 2010. *Beyond Smarter – Mediated Learning and the Brain's capacity for change*. Teachers College Press. Columbia University. New York.
- [3] Hillman et al. 2009. "The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children" *Neuroscience* 159(3): 1044-1054.