



Physical Movement – the Basis of Learning and Creativity

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Abstract

Learning and knowledge – a result of learning – are cornerstones of both the future professional career of every individual and of the economic future of a country. Furthermore, knowledge is a condition for creativity. Without knowledge no creativity is possible. And creativity is a condition for successful innovation. Creativity and innovation are related with a means-end relationship. Physical activity is an important part of learning and supports the learning process. In school, not only the design of lessons (or: work process) influence the movement behavior, but also the timetable (or: organization of work), the design of workplaces and the architecture of buildings. These two last aspects are mostly neglected. In innovation-intensive companies, other places of knowledge apart from schools, not only the immediate physical effects are of interest, but also the psychological and social aspect of movement must be taken into consideration. The design of workplaces and the architecture of buildings are important factors for improvement of creativity and therefore of innovation.

- Physical activity affects the learning processes and the ability to learn. This means that physical activity influence creativity and thus innovation. This may happen in three different ways:
- Physical Aspect: Physical activity influences the learning ability and the cognitive performance. The circulation of the brain and thus the supply of oxygen and nutrients is improved. The increased synthesis of neurotransmitter has a positive effect on memory. Impressions that are absorbed over several sensory channels remain better in memory.
- Psychological Aspect: An increased synthesis of neurotransmitter regulates and improves the mood state. Physical Activity improves mental equilibrium. Moreover, when performing semiautomatic activities (e.g. swimming, walking or driving a car), people often reach the highest level of creativity, because some attention is left for the mind to make connections among knowledge modules normally are not made.
- Social Aspect: More physical activity leads to more contacts with others. The more you meet others the better implicit knowledge can be passed to other people. And the more people you know and the more encounters between people with different knowledge take place, the better is the access to expertise in another discipline. Both promote creative work.

The aim of this paper is to show the different relationship of physical activity, learning and creativity. A framework helps to illustrate this.