Understanding how learning takes place with neuroscience and applying the results to education

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Our understanding of brain function advances constantly and in many different directions, each demanding specialized knowledge and continuous updating from an ever increasing volume of publications. The implications of the neuroscience findings for learning in general and the evaluation of the methods used in schools in particular are not always obvious and often their significance is clouded by the (often conflicting) political biases and accepted views that prevailed for many years and have become dogmas in education. The talk will start with a short review of recent key results of neuroscience research and the way these have capture the interest of education policy makers and transnational organizations.The second part of the talk will be devoted to the research in the last eight years that attempted to address the problem of early evaluation of children at pre-school or first year of elementary school initially focusing on specific needs like developmental dyslexia and eventually moving to the development of methods for efficient mass screening for special needs or abilities,with minimal disruption of school teaching. The talk will conclude with a synthesis of the results presented earlier and other recent neuroscience findings that show learning at schools as a natural continuation of tendencies endowed to humans by their evolutionary history and reinforced by parents in the protected family environment of the early years of life: it is a refinement of the constant drive to retain the individuality of the cognitive and social self while at the same time updating the internal model of the world (with the neural representation of self at its center) according to the ever changing and often challenging experiences of the modern world.

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