Towards Overturning the Dismal Mathematics Performance in Schools by Capitalizing on the Overlooked Cognitive Prowess for Adolescents to Learn Mathematics

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Abstract : Adolescents are at the front and centre of poor mathematics performance in schools. Literature has concluded in some countries that there is a permanent and perpetual mathematics crisis in schools of the persistent poor performance in mathematics by teens. There is no shortage of interventions and research to solve this problem. However, none has capitalised on the cognitive prowess of adolescents, which was revealed at the turn of the century by the introduction of neuroimaging technologies such as structural and functional magnetic resonance imaging (sMRI and fMRI). This research found that brain growth during adolescence results in enhanced cognitive abilities essential for mathematics learning. This paper is based on the four-year case study of rural high school adolescents who had a negative attitude towards mathematics and hence were failing mathematics. But through a ten-day intervention where teaching revolved around invoking their cognitive ability, their attitude and motivation for mathematics changed for the better. The paper concludes that despite educational psychology being part of teacher education as well as education systems, there are numerous overlooked gems of psychological theories which have the potential to enhance academic achievement for youth in schools. A recommendation is made to take cues from positive psychology, whose establishment was a rejection of the dominance of the disease model in psychology. Similarly, the general perspective of poor mathematics performance can take a u-turn towards the cognitive ability acquired by adolescents because of their developmental stage.

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