

Interesting scientific studies:

[The impact of non-cognitive skills on outcomes for young people. A literature review \(2013 Gutman and Shoon\)](#)

Very interesting literature review structuring non-cognitive skills. They highlight the importance of

- **"self-efficacy beliefs** (belief that they have the capability to succeed at a particular task in the future) are an essential precursor to enhancing both cognitive and non-cognitive skills."
- **"intrinsic** versus extrinsic-related goals encourage greater motivation, more persistence, and higher achievement for students of all ages." **Intrinsic motivation** can be improved by providing choice, hands-on activities, long-term intrinsic goals (for example: personal growth and health) and can be decreased by extrinsic rewards or goals (ex. physical attractiveness).
- **Growth mindset:** "When individuals believe that they can increase their ability through their own efforts, they are more motivated, put forth sustained effort and persistence, and use strategies to accomplish their goals."
- Expected Value (**perception of the overall value of the activity** or task) has a significant impact on achievement in the future. For example writing weekly essays about "connections between their lives and what they were learning in their science course (vs summaries of the weekly science topics)" brought "greater interest in science" and "higher academic performance".

The study also highlights the limitations of the current research, such as the fact that most studies around self-efficacy have been conducted by the same group of researchers, or that growth mindset studies are mainly on short term vs long term impact.

A broader definition of learning could help stimulate interdisciplinary research