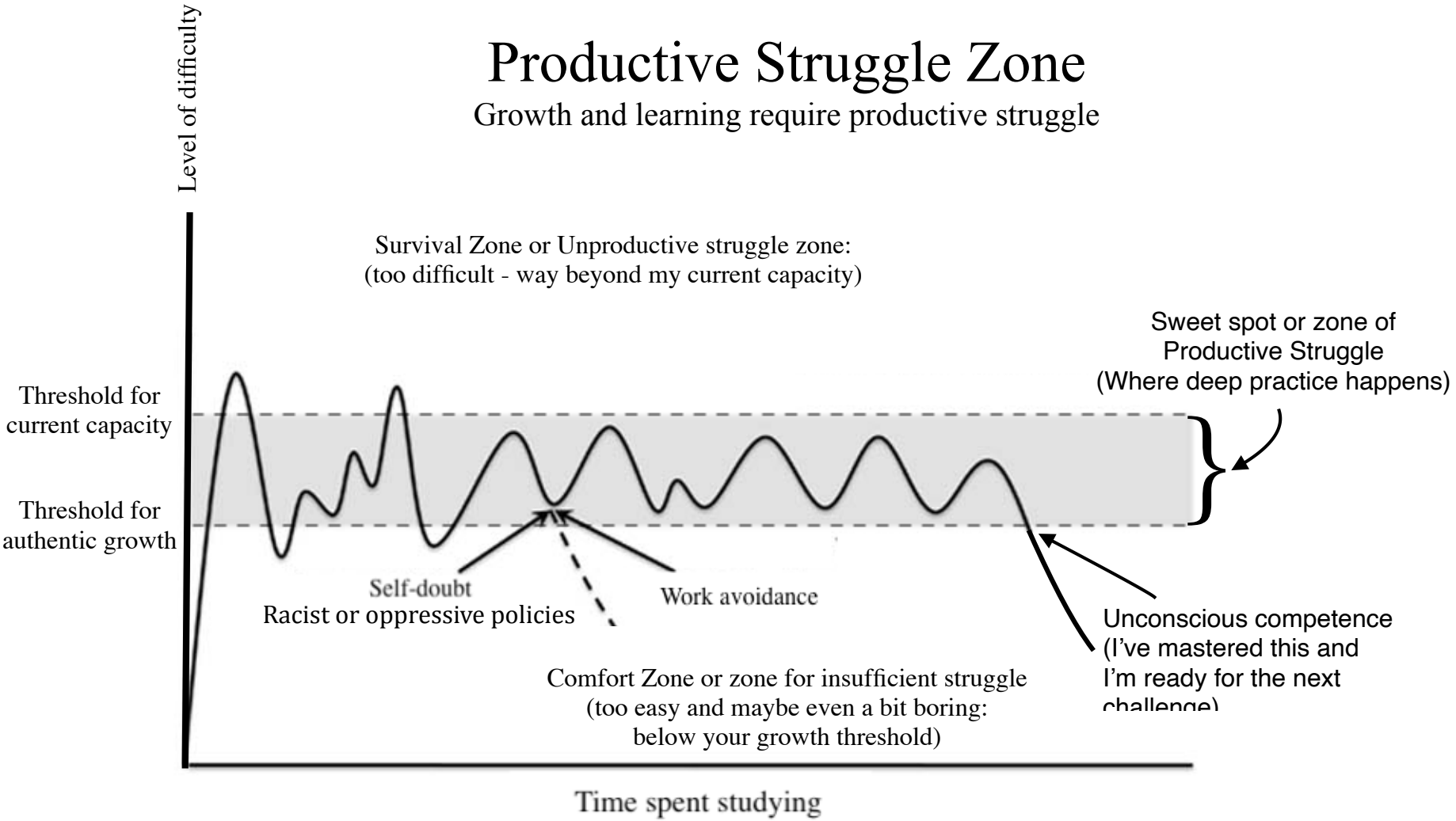


Productive Struggle Zone

Growth and learning require productive struggle



The following terms list comes from [Daniel Coyle](#)'s book entitled *The Little Book of Talent*. These terms are helpful as we develop your math learning routines.

Shallow practice noun

- The opposite of deep practice
- Marked by a lack of intensity, vagueness of goal, or unwillingness to reach beyond current abilities.
- Often caused by an aversion to making mistakes.
- Results in vastly slowed skill acquisition and learning.

Ignition noun.

- The motivational process that occurs when your identity becomes linked to a long-term vision for your future.
- This triggers significant amounts of unconscious energy
- This is usually marked by the realization *This is who I want to be*

Deep practice noun

- Also called deliberate practice
- A form of learning marked by two features:
 1. the willingness to operate on the edge of your ability, aiming for targets that are just out of reach
 2. the embrace of attentive repetition

Reach

verb.

- The act of stretching slightly beyond your current abilities toward a target, which causes the brain to form new connections.
- Reaching invariably creates mistakes, which are the guideposts you use to improve the next attempt

Repetition

noun. (abbreviated as *rep*)

- The act of attentively repeating an action, often with slight variances at gradually increasing difficulty.
- Repetition causes the brain's pathways to increase speed and improve accuracy leading to myelination of nerve cells.

Rule of 10000 hours noun

- The scientific finding that all world-class experts in every field have spent a minimum of 10,000 hours deep practicing their craft.
- While this number is sometimes misinterpreted as a magical threshold, in reality it functions as a rule of thumb underlining a larger truth: Greatness is not born, but grown through deep practice, no matter what.

Comfort Zone: noun

- Zone that is well within your current ability.
- Comfort zone sensations: Ease, effortlessness. You're working but not reaching or struggling.
- Comfort zone percentage of successful attempts: 80 percent and above

Sweet Spot: noun

- The zone on the edge of current ability where learning happens fastest.
- Marked by a frequency of mistakes, and also by recognition of those mistakes. (Tip #13)
- The sweet spot might also be called the zone of productive struggle, the zone of accelerated learning, the deliberate practice zone.
- Sweet spot sensations: Frustration, difficulty, alertness to errors. You're fully engaged in an intense struggle- as if you're stretching with all your might for a nearly unreachable goal, brushing it with your fingertips, then reaching again.
- Sweet spot percentage of successful attempts: 50 - 80 percent.

Survival zone: noun

- The survival zone might also be called the unproductive struggle zone or the zone beyond our threshold of capacity.
- The survival zone sensations: Confusion, desperation. You feel like you're overmatched: scrambling, thrashing, and guessing. You guess right sometimes, but it's mostly luck.
- The survival zone percentage of successful attempts: below 50 percent.