

## The Cognitive Cost: Bloom's Taxonomy

To understand the seriousness of this problem, it's important to remind ourselves of a few simple ideas.

Firstly, **we only have one brain**. We use the same pinkish-gray blob to drive a car, send an email, and scroll through Instagram; different networks might be active during different activities, but they are all part of the same brain.

Secondly, **the brain (and body) have evolved to prepare to survive future situations based on past experiences** — at a fundamental level, this is what we call “learning”. If a child grows up experiencing abuse, their brain will wire itself in a way that enables survival in future situations characterized by abuse. This often manifests as a form of trauma: hypersensitivity to threats, aggression, and other environmental cues associated with their past experiences of abuse (such as darkness, eye contact, etc.). Similarly, ADHD results from the mismatch between a brain that expects a very highly-stimulating environment (based on a mixture of past experiences and neural dispositions), and a reality that disappoints that expectation. Autism can be thought of as the opposite situation. The point is that at every instant, the brain is using past experiences to inform its expectations of what the future will be like, and how to effectively navigate it.

You could imagine then, that regularly using our singular brains in an environment characterized by short-term gratification, dopamine saturation, and rapid, extreme emotional responses would likely have an effect on the way we use our brain to do other things. In other words, the intensity and abundance of information we take in via social media platforms and our mobile devices are training our brains in a specific way — and not a good one. They are being trained to rapidly and automatically categorize information based on low-level heuristics and biases. They are being trained to make snap judgments on emotionally resonant issues. They are being trained to expect information and perspectives that unflinchingly reinforce our current beliefs, and to rarely deal with ideas that contradict our understanding of the world.



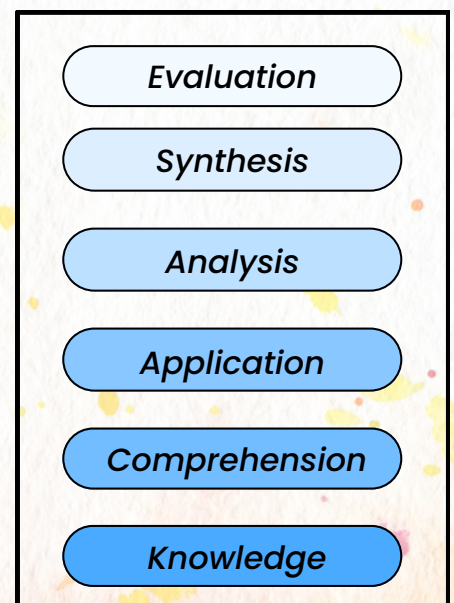
## The Cognitive Cost: Bloom's Taxonomy (cont.)

All this is happening, simply because that kind of a digital environment is what captures our attention most effectively. So when a student's brain (and body) arrives at school after being trained this way (for an average of 7h 22m a day) and they are tasked with sustaining their attention on a single, complex situation in order to thoughtfully analyze and critically respond to it — can you see the contradiction?

These platforms, as they currently exist, are encouraging our students to develop habits of mind that directly contradict and undermine the habits of mind we want to help students develop. We want them to think deeply about nuanced situations, to analyze multiple perspectives, to regulate their emotions, to view conflict through a lens of empathy, to recognize and overcome their biases, to use evidence to inform thoughtful opinions — these are the skills and traits that will lead them to success in the classroom, the workplace, and most importantly, the real world. And yet, the efforts of students and educators alike are being sabotaged by this attention economy.

To identify more precisely the habits of mind that are important for academic success, and why they might be under siege, it's helpful to view the situation through the lens of Bloom's Taxonomy. Bloom's Taxonomy is a framework that categorizes educational goals and cognitive skills along a continuum of simple to complex, or concrete to abstract. There is no inherent hierarchy between skills, however. Just as tools in a toolbox cannot be organized hierarchically by value, the cognitive skills in Bloom's Taxonomy are all crucially important in different situations. "Recall" and "understanding" might be appropriate in situations where "analysis" or "evaluation" are not.

### BLOOM'S TAXONOMY





## The Cognitive Cost: Bloom's Taxonomy (cont.)

In fact, **it is the deft and dexterous application of skills that are appropriate to a situation that we might consider a definition of “intelligence”**, both within the classroom and beyond. Viewed through this lens, the high attentional demands being placed on our young people as a result of this attention economy might be “programming” them to rely on lower-level cognitive skills. Again, in a digital environment characterized by high volumes of information and a ubiquity of short-term gratification, students are likely training their brains to focus on the most immediate aspects of a situation. Transferred to the classroom, this kind of training would predispose students to rely on lower-level skills like “memorizing”, “labeling”, or “defining” when faced with complex learning experiences, rather than engaging in higher-level skills like “evaluation”, “analysis”, or “composition”. If our students are being biased toward some skills and away from others, they simply have less tools at their disposal with which to become independent learners, innovative workers, and critically conscious citizens.

This is an issue of educational equity, as well. At reDesign, we believe unequivocally that ALL students are capable of developing higher-order thinking skills, and therefore deserve the opportunities to do so. We know that for students from marginalized communities, higher-order thinking skills are often neglected in favor of “mastering the basics first”. This so-called “pedagogy of poverty” often serves to reinforce existing achievement gaps, by making it more difficult for students from particular backgrounds to become independent learners. If these same students are then subject to the additional effects of platforms and devices that are constantly competing for their attention, they may be further biased away from practicing and developing higher-order skills. As a result, the attention economy is likely to affect students from marginalized communities disproportionately.



2

## The Cognitive Cost: Bloom's Taxonomy (cont.)

If we are serious about preparing our young people, especially those from marginalized communities, with opportunities to practice the high-level cognition they need to succeed in the future, this should be a red flag. Many of the platforms and devices that have become woven into the social fabric of the world are in direct opposition with the goals of an empowering and equitable education — and that will hurt us all in the long run.

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3

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