

A Case For The Student

Your child's level of cognitive and brain development may explain some of the issues frequently associated with lack of effort and investment.

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Introduction

As a tutors and coaches, we often hear complaints and frustrations from parents and teachers about how their students are performing. We listed some common recurring issues below and offer an explanation based upon our own experiences, together with some supporting research.



Dopamine, level of interest and performance

We know she is capable, but she is clearly not applying herself. She wrote a beautiful biology paper independently and earned an A. This proves she can do it and she should be able to in other subjects. But why isn't that happening?

Dopamine, a chemical released in the brain, affects our level of interest. Studies have shown that children with learning differences, such as those with ADHD, may release dopamine at an adjusted or slower rate. This is due to structural and biological

differences in the brains of people with ADHD.

"Our findings imply that these deficits in the dopamine reward pathway play a role in the symptoms of inattention in ADHD and could underlie these patients' abnormal responses to reward," author Nora Volkow said.

Takeaway: Students may not necessarily have trouble focusing, they have trouble making themselves pay attention. In our example, the subject of biology triggers a dopamine release in the student's brain because it is a "preferred" activity. Unlike adults, children find it much harder to 'force themselves to be interested' in important topics or subjects, and this in turn impacts their performance. Lessons and projects that engage and excite the student in a less-desired subject may be able recruit the dopamine chemistry to support learning and ultimately performance.

Focus and sustained attention and the need for regular breaks

He can sustain attention for hours while playing a video game, watching a favorite movie and putting together a model airplane. Why can't he focus during class?

Turning off the 'day-dreaming' state of the brain is a task required to focus on an individual task. Brain scans show that people with ADHD and related learning



issues have a faulty switch that turns off the default mode network (DMN) - the network active when we are doing nothing and that gives rise to spontaneous thought. If a task is not sufficiently interesting, they cannot switch off the background brain activity and are easily distracted.

Research into cognitive processes has led to the development of various computer-based interventions for improving working memory and associated cognitive processes. The effectiveness of these are mixed and still being researched. A study of one popular software intervention, CogMed, found that the software was effective for short-term benefits especially related to visual working memory. However, there is little evidence to supporting far-transfer, and similarly little evidence indicating longer-term benefits of using the software.

What does this mean? There are tools that, if used regularly, can improve working

memory issues, however, like other exercise, students need to use the tools regularly to maintain those performance gains. Students also need to use the tools in the environment of the presenting issue. You may have mastered the working-memory computer game, but you are still having a hard time putting your binder in your backpack each night (transfer).

When it comes to sustained attention on a task, a child's brain development enables them to remain focused for longer as they get older. The National Education Association provides homework guidelines based on research conducted by Harris Cooper; 10-20 minutes of homework per night in first grade, and an additional 10 minutes per grade level thereafter (e.g., 20 minutes for second grade, 120 minutes for twelfth).

Brain breaks are essential. Elementary students should work for 10-15 minutes and



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then have a 3-5 minute break. Middle and high-schoolers can work for longer, 20-30 minutes, but still need those breaks in order to maintain focus.



Investment, academic consequences and a sense of urgency

My child doesn't seem invested. She has no sense of future goals and doesn't seem to fear academic consequences. The project is due tomorrow and she's not stressed at all. If she fails this marking period, she may not qualify for Advanced Placement classes.

We all know that children can be impulsive. In his book, The Age of Opportunity, psychology professor and researcher, Laurence Steinberg describes the system of the brain like a gas pedal in a car. He found that the impulse to chase thrills and look for immediate gratification peaks around age 19. The 'brake system' - the ability to plan ahead and consider consequences, takes

longer to catch up and may not be fully mature until a child enters their 20's.

Steinberg's research has far greater consequences. In the article 'The Right Age to Die?', it is argued that these findings require special consideration when sentencing young adults committed of a felony. Due to 'late adolescence', people between the ages of 18 and 21 should have the same kind of special consideration given to them as younger teenagers - their brains just haven't sufficiently developed to enable them to make wise decisions.

What does this mean for the 'uninvested' child? Tom Brown, ADD expert, claims there are two times for people with ADHD; "now and not now". "Patients with ADD describe chronic difficulty with excessive procrastination. Often they will put off getting started on a task, even a task they recognize as very important to them, until the very last minute. It is as though they cannot get themselves started until the point where they perceive the task as an acute emergency."

Why can't you do this already?

By the time you are in middle school you should be able to study, write multiple paragraphs, manage your supplies. You need to get ready for high school!

Why is it that some children seem to be able to make the transition into high school



easily and others don't? Are some students just better learners and harder workers or are there cognitive development processes at play?

Let's introduce two terms; pruning and myelination.

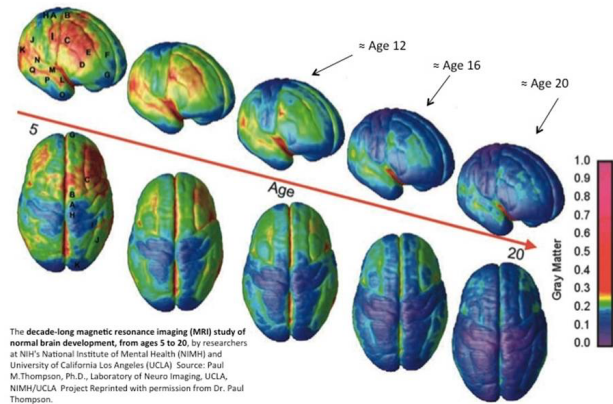
“Pruning means that the abundance of neural connections achieved during the sponge-like soaking in of knowledge during the childhood period will be whittled down, shaped like a garden.”

Myelin enables the remaining and connected neurons to communicate with each other with more coordination and speed.

In adolescents, the classic “use it or lose it” principle applies—those circuits that are actively engaged may remain, those underutilized may be subject to systematic destruction. During the tween years, myelination is particularly occurring in the frontal lobes of the brain, the section of the brain that begins just behind the forehead.

The MRI images pictured, reveal how slowly the frontal lobes of the brain mature, with the color purple representing full maturation.

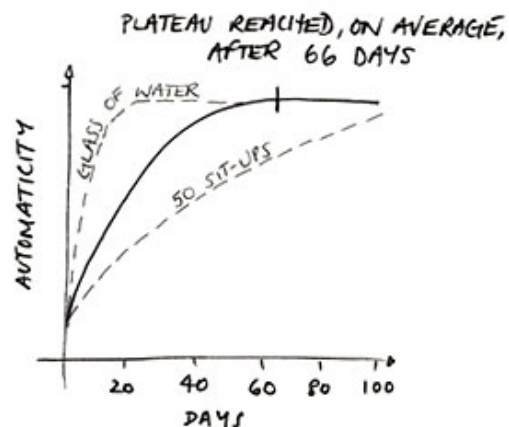
So, although the early adolescent pruning phase may be a good time to capitalize on teaching important executive skills, it is important to keep in mind that the brain is still developing and some students may not



be able to manage the high expectations of many middle school environments.

A study shows that many students struggle to write an effective summary for a piece of literature that they just completed. These struggles extend well beyond elementary school:

- 5th grade only 14 percent can write a summary
- 7th grade 28 percent...
- 10th grade 36 percent...
- College level 50 percent...
- Mature Learners 85 percent!





Furthermore, the act of learning, or in this case, adopting new habits, can take time; it takes up to 66 days before a new behavior becomes automatic according to one study.

Nag, Nag, Nag

I constantly need to nag my child/student or things just don't get done. Why?

Child psychologist and author Ross W. Greene maintains, "Kids do well when they can," and when they can't, it's because they are delayed in the development of crucial cognitive skills.

Greene stresses that challenging kids do not lack the motivation to do well, nor are they attention-seeking, manipulative, coercive or limit-testing. "What challenging kids lack are the skills not to be challenging. Consequently, if challenging behavior is caused by lagging skills and not by lagging

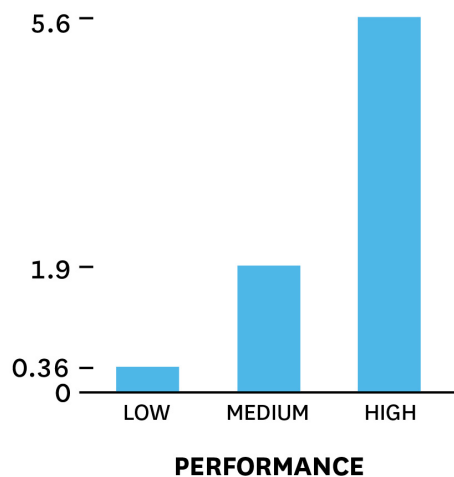
motivation or manipulative behavior, it is easy to understand why rewarding and punishing a challenging kid may not make things better or help him learn essential skills for lasting success."

Research in the business world shows that the most effective teams had leaders who gave at least 5 positive comments to 1 negative comment to their employees.

Therefore, when speaking to children, tell

A LITTLE CRITICISM GOES A LONG WAY

Top performing teams give each other more than five positive comments for every criticism.



The Effects of Positive Language vs Negative Language On Children
and how to speak so kids understand

Negative vs Positive

- 1 Stop jumping on the couch → Sit on the couch, please.
- 2 Don't run → I need you to walk right now.
- 3 Don't be so loud → Use a quiet voice.
- 4 Don't throw that → Please hand it here.
- 5 Don't pour that on the floor → Would you like to play with the blocks or the playdough? (use distraction)
- 6 Stop grabbing! → Share, please.
- 7 Don't cut in line → You need to wait your turn, honey.
- 8 Quit pushing → Keep your hands to yourself.
- 9 Don't talk like that → Use nice words.
- 10 Stop fighting → I need for you to get along right now.

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them what you expect them to do instead of what you don't want them to do. Bottom Line: There is power in positive language.