

Todd Stockton From Colorado Explains Learning Technology And How It Is Rewiring The Brain

SARASOTA, FLORIDA, UNITED STATES, June 18, 2018 /EINPresswire.com/ -- A lot of people believe that adding technology to the classroom automatically means better outcomes. While this is true to a certain degree, [Todd Stockton explains](#) that it is a little bit more nuanced than that. Specifically, it is important that educators and tech developers understand how the brain can be rewired to learn through technology.

A little-known fact is that, between 200BC and 1400AD, most Europeans were very bad at math. According to Todd Stockton, this was due to a specific reason and he believes that this applies to tech today as well. By sharing this, he hopes that the tech revolution will be able to benefit more people.

Tech that Makes Us Smarter

[Todd Stockton from Colorado](#) has been involved in many pieces of research that have looked at the impact of objects and tech on the way our brain cognates. During Roman times, Roman numerals were used and they were notoriously difficult for calculations. It wasn't until Arabic numerals, which are the numbers we know today, were introduced that math, including additions, multiplications, subtractions, and divisions, became something that everybody was able to grasp.

Todd Stockton explains that there are technologies and objects that are able to rewire the way we think, thereby making us smarter. Sometimes, this difference is tremendous. However, that does not mean that all tech and objects can improve our cognitive function. In fact, there are some that may diminish it. Stockton explains that so-called "cognitive cultural artifacts" are those techs that affect the way we think.

The Arabic numeral is an example of a positive cognitive cultural artifact. Not only did it make math accessible to the masses, it also made it easier to think in a mathematical manner. As such, this is a type of "complementary" cognitive cultural artifact. All examples of complimentary artifacts have made people smarter simply by being in their presence. And, once people have grasped them, their brain starts to perform better.

Stockton explains that another important example is the abacus. In cultures where this is found, such as in China, children learn to use their hands and eyes to make calculations. Research has shown, however, that once they have grasped the abacus, their brain no longer sees it as a language but rather as a visual-spatial area. What this means is that, once they have grasped its use completely, they don't need a physical abacus anymore. Instead, they can use one "virtually", inside their visual cortex. Additionally, scientific research has shown that those who have this "virtual" abacus in their mind were able to improve other cognitive functions as well.

Then, there is the example of maps, which are also complimentary. By using a map, spatial representation becomes encoded in our brain. This means that, over time, we learn to understand our place in the world and we become better navigators as well.

The Trade-Off

[Todd Stockton explains that one day soon](#), we will step into our self-driving vehicle and simply tell it where to go. We will not need a map anymore to get from A to B. Plus, self-driving cars stick to the rules, which means that thousands of lives could be saved by reducing car accidents. However, it is unlikely that this self-driving car will rewire the brain in a positive manner. In fact, it will probably have a negative effect. According to Stockton, the trade-off is worth it in this particular instance, but it does highlight the fact that there are dangers to becoming reliant on technology as well. These types of cognitive artifacts are known as "competitive" because while they enhance certain parts of human life overall, they also make us less smart.

Todd Stockton Explains Education Technology

Stockton is fully invested in creating tech solutions that benefit learners and teachers alike. He has been fascinated by this concept of complementary and competitive cognitive cultural artifacts. Time and again, he has stumbled on the assumption that all tech developments are positive and that they are simply leading to a phasing out of the pen and pencil. He doesn't agree with this, however, believing that shifting completely to computers does not necessarily mean overall student outcomes will improve.

Of course, even with all the tech being added to schools, educators continue to use pen and paper. It seems that over time, more people would have signed up to Stockton's idea that tech should be used appropriately so that people can benefit from it the most. Unfortunately, research is still significantly lacking on the potential long-term effects of cognitive cultural artifacts and whether they will, overall, be complementary or competitive.

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