



# Is the Internet Changing the Way We Think?

By Rich Bayer, Ph.D.

The internet offers us immediate access to a wealth of information. This has its benefits but it has a potential downside as well. The internet may be significantly changing the way we think and not necessarily for the better.

Modern technology has given us the internet which has created a new way to access knowledge. With fair precision and almost instantly, we can find information on highly specific topics. No need to turn to our encyclopedias or dictionaries, or head to the library to find and research the pertinent literature to answer our questions. No need for the tactile experience of paging through books or magazines or jotting our hand-written notes on pieces of paper.

But what happens when we don't have to work as hard to gain knowledge?

For one thing, we're more likely to forget what we learned. We find our information quickly. We read it quickly and then we're done. We may not even feel compelled to remember what we just read because, after all, we can search it again and access it instantly on our computer or smart-phone.

We no longer need to write things down. But writing notes to ourselves helps implant memories. Taking a greater effort to learn something helps implant memories. By using the new technology, we miss that.

This is another way of saying that going in depth with a topic helps us learn it better. The more we focus our attention on something, the better we learn it. When we go in depth with a subject, we make a lot of neurological connections around it.

But when using the internet, we rarely go in depth. Hyperlinks keep our minds moving and changing, going from one window to another, one distraction after another. Our distractions lead to more distractions which lead to even more distractions. By repeating this process over and over, our brains become hungry for rapidly changing information.

In effect, the internet makes us a little more ADD (attention deficit disorder). Our minds jump from topic to topic, thought to thought. We rarely go into depth with anything. We just stay in "the shallows." In fact, this is the title of a book by Nicholas Carr, which presents research on this very topic.

The thesis for Carr's book, *The Shallows*, is that the internet changes how we think, creating minds that don't go into the depths but remain in the shallows. We don't go to the bottom of the ocean; we just skip along the surface. He believes the internet is changing our brains in significant ways. Through this high-speed, technologically advanced method of accessing knowledge, we are becoming scattered and superficial thinkers.

Carr says, "It's not that we're not seeing the forest for the trees, it's more that we're spending all our time looking at the twigs and leaves."

Historically, changing technology has routinely changed the way we think. Technological advancements have had a lasting effect on our brains. That's because our brains are "plastic." They can change. They can rewire themselves. They can adapt to new environments. This feature is called neuroplasticity.

Our brains demonstrated their neuroplasticity with the advent of the printing press. Though there were handwritten books prior to the invention of the printing press, most knowledge during that time was transmitted orally. The oral tradition goes back to ancient times. This is how we passed the knowledge of our group or tribe, or our society on to future generations. Even with the advent of written language and hand-printed books, we most often read aloud.

But after Gutenberg developed the printing press in the 1430s, the number of books in existence increased dramatically. In the first fifty years after its development, the number of books produced in Europe equaled the number produced by European scribes during the preceding thousand years.

Now reading began to replace listening as the main method for the transmission of knowledge. This is a major shift. Our brains needed some time to adapt. First we needed to know how to read. Then we needed to learn how to assimilate information through the written word rather than the spoken word.

Our brains made the transition of course and this represented a major rewiring of our neural circuits. Today it feels second-nature for us to read something and pick up some information from it, but things haven't always been this way.

Now we're experiencing another major shift, the shift from writing on a page to writing that appears digitally on a screen. In addition, the sheer amount of information available today is astounding. Our brains are adapting. This seems easy in some ways but perhaps it's causing our thinking to become more scattered.

Is this adaptation all bad? Probably not. A counter-argument can be made for the new technology. Though we may know fewer things in depth, we may know more things overall. We

may have a little knowledge about a lot of things instead of a lot of knowledge about a few things.

Also we must remember that not all distractions are bad. As Dutch psychologist Ap Dijksterhuis explains, when it comes to problem solving, we often need a break in our thinking to help us make our best decisions. By shifting our attention away from a mental challenge for a period of time, we give our unconscious mind a chance to process it and develop the best solution or course of action.

What do you think? Is the internet making people too scattered in their thinking? Or is it helping to further our knowledge in important ways?

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