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# Beware the Brain Gap

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The generation gap has been upgraded. In a world overflowing with ever-advancing technology, the generations are now separated by a "brain gap" between young "digital natives" and older "digital immigrants," according to Dr. Gary Small '73, director of UCLA's Memory and Aging Research Center at the Semel Institute for Neuroscience and Human Behavior.

"We know that technology is changing our lives. It's also changing our brains," Small said in an Open Mind lecture for the Friends of the Semel Institute in October, a talk that centered on his new book, "iBrain: Surviving the Technological Alteration of the Modern Mind."

Small believes that the human brain is always changing in response to the environment, and that "A young person's brain is the kind of brain that is most exposed to the new technology."

Young people born into a world of laptops and cell phones, text messaging and Twittering spend a daily average of eight hours exposed to digital technology. This exposure is rewiring their brain's neural circuitry, heightening skills like multi-tasking, complex reasoning and decision-making. But Small warns: All that tech time diminishes "people" skills, including important emotional aptitudes like empathy.

On the opposite end of the spectrum, digital immigrants, born into a world of pocket calendars and letters that were sent in the mail, have to work hard to embrace technology without the already-developed brain form and function. The good news, Small says, is that the flexible brain is eminently trainable.

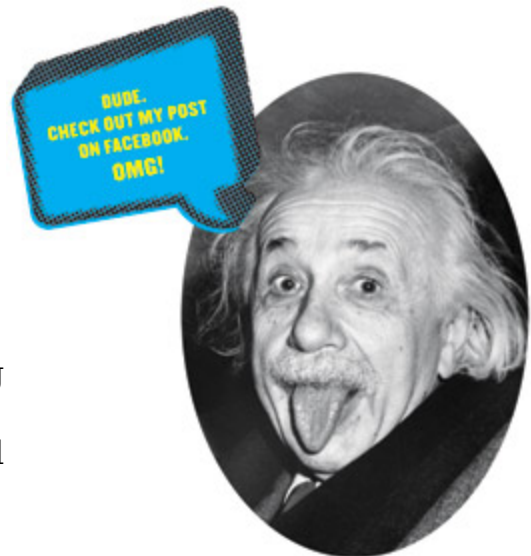


Photo Illustration by Alicia Patel; Photo by Stephanie Diani.

In his talk, he cited a recent UCLA study that assessed the effect of Internet searching on brain activity among volunteers between the ages of 55 and 76 — half of them well-practiced in searching the Internet, the other half not so much. Semel Institute researchers used functional magnetic resonance imaging (fMRI) to scan the subjects' brains while they surfed the Web. They found that the brains of the Web-savvy group reflected about twice as much activity compared to the brains of those who were not digitally nimble.

"A simple, everyday task like searching the Web appears to enhance brain circuitry in older adults," Small says, "demonstrating that our brains are sensitive and can continue to learn as we grow older."

These findings hold promise for older people's potential for enhancing their brainpower through the use of technology, said Small, an expert on the aging brain who has written several books to help people maintain vital brain function throughout their lives.