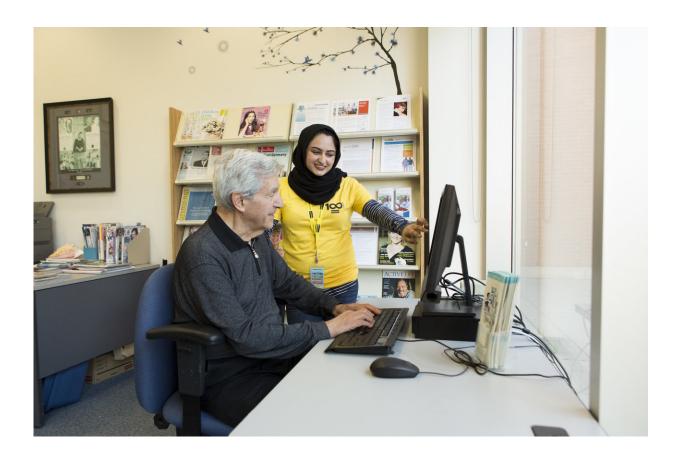# Making mistakes while studying actually helps you learn better

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Baycrest volunteer teaching an older adult to use a computer. Credit: Provided by Baycrest

When learning something new, there are instances where trial and error helps rather than hinders, according to recent findings by Baycrest

researchers.

Contrary to popular belief, when a person makes a mistake while learning, it improves their memory for the right information, but only if the error is close to the correct answer, according to a study published in the journal, *Memory*.

"Our research found evidence that mistakes that are a 'near miss' can help a person learn the information better than if no errors were made at all," says Dr. Nicole Anderson, senior author on the paper and senior scientist at Baycrest's Rotman Research Institute. "These types of errors can serve as stepping stones to remembering the right answer. But if the error made is a wild guess and out in left field, then a person does not learn the correct information as easily."

These findings could help with improving education for not only younger adults, but also late-life learners.

In one of the studies reported in the paper, researchers recruited 32 young adults with no Spanish background to guess the English definition of certain Spanish words. The Spanish words selected either resembled an English word with a similar meaning (such as careera, which means degree) or the word looked like an English word, but meant something different (such as carpeta, which resembles carpet, but means folder).

Participants were shown the Spanish words and asked to guess its meaning. Then, they were briefly shown the correct translation, before being shown another Spanish word. After repeating this process with 16 Spanish words, participants had a short break before their memory for the translations was tested.

Researchers found that people were better able to remember the correct translations for Spanish words that were similar to the English word.

They had greater difficulty recalling the meaning for words that looked misleading.

"Based on these findings, someone studying for an exam should only take practice quizzes after reviewing the material," says Dr. Anderson, who is also an associate professor of psychology and psychiatry at the University of Toronto. "If a person takes a practice test and is unfamiliar with the content, they risk making guesses that are nowhere near the right answer. This could make it harder for them to learn the correct information later."

Even if a person makes a mistake while testing themselves, as long as their error is close to the right answer, they're more likely to remember the right information, adds Dr. Anderson.

As next steps, the team is studying the brain activity of people when they make "near miss" and "out in left field" types of errors during learning. Their work strives to uncover how these different mistakes impact a person's brain function when they try to remember the correct information.

Provided by Baycrest Centre for Geriatric Care