

# For people with memory problems, preventing mistakes is a better learning strategy

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Do people learn from their mistakes? This question is often a subject of discussion at rehabilitation centres. For people with memory problems preventing mistakes is a better learning strategy. Neuropsychologist Dirk Bertens has now demonstrated that 'errorless learning' also works with people with non-congenital brain damage. He will be awarded a PhD for his research by Radboud University on 8 January 2016.

A significant proportion of [people](#) with brain damage that has been caused by a stroke or accident suffer from disrupted executive functions: for them, actions that consist of several steps and require planning are difficult. That causes problems because virtually all of our everyday actions consist of several steps, even holding a normal conversation. Such patients therefore receive training to relearn these everyday tasks.

## Errorless-learning doves

In 'errorless learning' you prevent mistakes from occurring by dividing the target to be achieved into steps and explaining those with extensive descriptions, examples, visual instructions and especially pauses in between the steps. Errorless learning originates from research into doves. The American psychologist Herbert Terrace taught doves to peck at a red button but not a green one. As the task was slowly made more complex – first the doves only learned the difference between the colours red and green and then the difference between the red and the

green button – the doves rarely made mistakes in the last, most difficult task.

## **Beekeeping and Internet banking**

In people the principle has so far been investigated among individuals with memory disorders, such as dementia, and for them it appears to be a successful approach.

Dirk Bertens investigated the effect of the training on sixty people with non-congenital [brain damage](#) who had problems with planning. The participants were allowed to choose two [everyday tasks](#) to train on. Bertens: "They chose tasks such as Internet banking or making lasagne. One participant was a beekeeper and chose to practise investigating his beehives and subsequently filling in a report. So that is what we did."

Neuropsychologist Dirk Bertens during the inspection of one of the participant's beehives.

## **Error versus errorless**

Half of the group received a 'standard' trial-and-error training and the other half practised with an errorless learning method. Whereas the first group were given the space to make errors and to subsequently correct these, the second group received extensive instructions both before and during the realisation of the task. "We briefly paused between each intermediate step to check if things were still going well. The participants found it particularly difficult to pause for such an evaluation moment. However, after eight training sessions they realised the tasks better than the participants in the control group."

Both the trainers and the participants saw a clear improvement after the

errorless training sessions. "I would like to implement the principle of errorless learning in rehabilitation centres throughout the Netherlands," says Bertens. "With this implementation it can be examined whether there are even more patient groups who could benefit from this approach, for example individuals with congenital learning disorders or [learning](#) disabilities."

Provided by Radboud University

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