

## Action video games to fight dyslexia

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Credit: Pixabay

A study conducted by BCBL, the Basque research center, reveals that action video games improve visual attention and reading ability, two deficits suffered by people with dyslexia. The objective is to use the

most useful elements of videogames in new software without violent connotations to treat this cognitive disorder.

Many years ago, researchers began to discover the properties of action videogames for the improvement of visual [attention](#) and learning processes. What was not so clear were the specific benefits that could be derived from this form of entertainment, nor that the specific action videogames contribute to combat [dyslexia](#), an alteration of the reading ability that causes changes in the order of words or syllables and that affects almost one in ten people in the world.

Now, scientists from the Basque Center on Cognition, Brain and Language (BCBL) of San Sebastian and the Psychology Lab of the University of Grenoble Alpes (France) have worked to verify its effectiveness.

The findings of the study, published in *Scientific Reports*, suggest that action games awaken in players a greater capacity for visual and reading attention in response to difficult situations that arise, and that these stimuli can serve to fight dyslexia.

The final objective is to identify the situations that generate these stimuli and use them to create new programs against this disorder. According to Alexia Antzaka, the researcher of the BCBL, we are facing another step in the creation of specific software to treat and combat dyslexia.

The researchers took a group of 36 individuals who did not suffer from dyslexia or reading problems. Nineteen of these individuals regularly played [action video games](#). First, all participants were subjected to a test to evaluate their attention. Participants were exposed to a row of six consonants for 200 milliseconds to test how many letters they were able to process. One of those letters was replaced by a point to test if the participants were able to identify the one that was in that space.

In addition, another pseudo-word reading [test](#) was carried out, which consisted of showing a pronounceable term but without any meaning for 60 milliseconds. The result of both tests was conclusive: The group of 19 [videogame](#) players solved both trials better than the other group. In addition, it could be deduced that there was a correlation between both tests; that is, individuals with better visual attention also had better [reading ability](#).

Not all videogames offer benefits in the field of visual attention. For the authors, some football or basketball games are fast-paced, but they lack elements of surprise because situations can be anticipated. "In contrast, certain action games are unpredictable, and force the player to remain always attentive and react quickly. However, the exact components of action video games that promote an improvement in visual attention are still being investigated," adds Antzaka.

The problem is that these types of videogames often include violent situations of little pedagogical value. Therefore, the experts intend to extract the components and elements that optimize the [visual attention](#) to use them in the creation of a new fun and entertaining software. Until now, most of the apps and software programs that have been developed to combat and treat dyslexia have a strong educational component that children associate with boredom.

**More information:** A. Antzaka, M. Lallier, S. Meyer, J. Diard, M. Carreiras & S. Valdois. 'Enhancing reading performance through action video games: the role of visual attention span'. *Scientific Reports* 7, Article number: 14563 (2017) [DOI: 10.1038/s41598-017-15119-9](https://doi.org/10.1038/s41598-017-15119-9)

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