

# Bionic Reading®

## Measuring reading efficiency: the ZHAW study

This is an English summary of a study written in German. It was prepared by Bionic Reading AG, not by the ZHAW. The German documents are the authoritative source, and both are available at [bionic-reading.com/br-study/](https://bionic-reading.com/br-study/) Where this summary quotes the study's own wording, the German original is given alongside the English.

### The study

#### What was examined, by whom

The project “**Leseeffizienz messen: Bionic Reading + Eyetracking**” was carried out by **Birgit Fuhrmann, Martin Schuler and Felix Steiner** at the **ZHAW Zurich University of Applied Sciences**, IUED Institute of Translation and Interpreting in Winterthur. It was commissioned by Bionic Reading GmbH, today BRCG Casutt GmbH, and supported by **Innosuisse**, the Swiss Innovation Agency, under an Innocheck with the project number 58811.1 INNO-ICT.

The testing took place in January and February 2022 in the ZHAW usability laboratory. The project was completed on 23 March 2022, the final report is dated 8 April 2022.

The ZHAW describes this work as a **pilot study** (“Vorstudie”) in which “several indications” (“einige Anhaltspunkte”) were found that Bionic Reading® can improve how information is processed.

### Method

#### How the test was built

Twelve Bachelor students of Applied Linguistics at the ZHAW took part, eleven women and one man. They were recruited because they read demanding texts on screen regularly.

Each participant read two texts of comparable difficulty. One was prepared with Bionic Reading®, the other was left in the original typeface as a reference. One text was read on a desktop PC, the other on a tablet. All parameters – which text, which

treatment, which device, which order – were randomised and distributed evenly across the twelve participants.

Immediately after each text, participants answered eight content questions aloud. These measured text comprehension and retention, with a maximum of 20 points per text and 40 points in total.

Reading time was measured with a stopwatch and converted into reading speed. Reading was recorded by screen capture. On the desktop PC, eye movements were additionally recorded with a stationary eye-tracker. After both reading tasks, participants were interviewed about their experience.

## Results

### Retention – the key finding

Those who read the text set in Bionic Reading® scored **11.75 points** in the comprehension test. Those who read the same text in a normal typeface scored **9.83 points**. That is **19.5 per cent more**.

The ZHAW highlights presentation states: “Behaltensleistung bei bionic Text deutlich besser” – retention with the bionic text clearly better.

The final report puts it more cautiously in its management summary: the bionic text scored “etwas höher” – somewhat higher. Both statements describe the same measurement. We quote both so that the reader can judge.

### Reading speed – no advantage

Reading speed was **191.28 words per minute** with Bionic Reading® and **189.14 words per minute** without. The report finds no significant difference.

Bionic Reading® is often described as a method for reading faster. This measurement does not support that, and Bionic Reading AG does not claim it. Overall reading speed across all participants ranged from 95 to 192 words per minute.

### Eye-tracking

The average number of fixations was markedly higher on the Bionic Reading® texts than on the normal text. The report suggests this could mean that the method changes the uptake of information.

The ZHAW is explicit about the limit of this observation: it could also be a purely random distribution, because no two eye-tracking samples per participant were available. It would need to be confirmed in further research.

## What participants reported

### Noticing the treatment

Ninety-two per cent of participants said they had noticed a text treatment in one of the texts, described as “the beginning of words was in bold emphasis”.

### Change in reading behaviour

Fifty-eight per cent reported that their reading behaviour changed, slightly to strongly, when reading the bionic text. Among those who noticed a change, **71 per cent described it positively**: more fluent and faster reading, less rereading, and in part the same or better grasp of the text.

### Getting used to it

For 58 per cent, the text treatment was noticeable or felt “odd” (“komisch”) at the start of reading. For 42 per cent of all participants it faded during the reading process until they no longer noticed it, and for a further 17 per cent it faded partly.

## What the study does not cover

### Important for context

The twelve participants had **neither ADHD nor dyslexia**, nor any other condition that makes reading difficult. All results above were measured with people who already read well and read a lot.

Reports from readers worldwide with ADHD and with dyslexia describe a marked improvement in reading and comprehension with Bionic Reading®. That feedback comes from practice. It is **not** a finding of this study, and the two are kept apart deliberately.

# What the ZHAW recommends next

## The outlook of the final report

The report names two follow-up studies.

A study with **a different target group**, in the report's words "insbesondere bei Menschen mit Beeinträchtigungen, die das Lesen erschweren, wie etwa Dyslexie oder Legasthenie" – in particular with people whose impairments make reading difficult, such as dyslexia.

And a **long-term study** of the habituation and training effect, in which participants read bionic texts regularly and reading speed is measured at defined intervals.

## References

### How to cite the study

Fuhrmann, B., Schuler, M., Steiner, F. (2022): Leseeffizienz messen: Bionic Reading + Eyetracking. ZHAW IUED Institute of Translation and Interpreting, Winterthur. Innosuisse Innovation Cheque 58811.1 INNO-ICT.

### The original documents

Final report, 8 April 2022, German:

[bionic-reading.com/downloads/ZHAW\\_Bionic\\_Reading\\_Study\\_Report\\_2022\\_DE.pdf](https://bionic-reading.com/downloads/ZHAW_Bionic_Reading_Study_Report_2022_DE.pdf)

Highlights presentation, 23 March 2022, German:

[bionic-reading.com/downloads/ZHAW\\_Bionic\\_Reading\\_Study\\_Highlights\\_2022\\_DE.pdf](https://bionic-reading.com/downloads/ZHAW_Bionic_Reading_Study_Highlights_2022_DE.pdf)

## Patent, copyright and trademark

### Three pillars

The intellectual property of Bionic Reading® rests on three pillars that carry equal weight: **patent law**, **copyright** and **trademark law**. None of them replaces another, and none is secondary.

### Patent

The patent is granted in France and carries the number **FR 3 052 587 B1**. It was published on 4 June 2021 in Bulletin 21/22; the application FR 17 55215 is dated 12 June 2017. The title is "Système et méthode de lecture rapide". Renato Casutt is named as the inventor.

## Copyright

The copyright is not limited to source code. Bionic Reading® holds the copyright in the original visual expression of its reading presentation: in the selective emphasis of the opening letters of each word, in the resulting rhythm of bold and regular type across the line, and in the overall composition of the reading page that follows from it. This expression is what the reader sees, and it is independent of the code, of the programming language, of the file format and of the platform.

**If a text is displayed so that it looks like Bionic Reading®, this falls within the scope of our copyright** – regardless of the product name under which it is offered. A different product name alone does not resolve such an infringement.

## Trademark

The trademark “Bionic Reading®” is registered in nine territories: in Switzerland under 707270, in the European Union under 015969488, in the United Kingdom under UK00915969488, in the United States under 5557651, in Canada under TMA1362735, in Australia under 2302292, in New Zealand under 1219946, in Japan under 1684673 and in the Principality of Liechtenstein under 1357135.

All registrations are listed in full at [bionic-reading.com/patent-trademark/](https://bionic-reading.com/patent-trademark/)

## Rights holder

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## Contact

Bionic Reading AG  
Masanserstrasse 194  
CH-7000 Chur  
Switzerland  
[bionic-reading.com](https://bionic-reading.com)  
[licensing@bionic-reading.com](mailto:licensing@bionic-reading.com)

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