

Researchers investigate the reading habits of children and adults

August 30 2016



Children read differently than grown-ups: scientists of the research group REaD want to find out how German teachers can structure their lessons in order to boost the reading skills of their students. Credit: 123RFChalabala

As part of a project from the Devel (Development Lexicon Project)

study, scientists at the Berlin-based Max Planck Institute for Human Development are studying how words are read by people of different ages. Participants range from first-graders through to seventy-year-olds – in other words, people of all generations. To date, studies compared children with young adults or young adults with older adults, but there was never research on children and older adults jointly.

Haus ("house") is a commonly used word in German that sounds similar to a number of other words. "Raus, Laus, Maus," says Sascha Schroeder, listing several examples. "If you replace just one letter, you can find groups of similar sounding words." A word like Assel ("woodlouse") is used much less frequently. "Adults who see a less frequently used word have already read, lived and conversed much more than children, which is why infrequently used words are recognized better by people with more experience."

In this context, the researchers are focusing on three different characteristics of a word: its length, its frequency of use within the language, and how similar it is to other words. They have discovered that both length and frequency are used less and less to read a word over the course of life. "The effects decrease continuously," summarizes the psychologist, linguist and musicologist. "Because the more often a word is used in the language, the quicker we recognize it with increasing age when reading."

Problem lesser reading abilities

This is one key result of a range of interdisciplinary studies conducted by Schroeder and his staff from the REaD (Reading Education and Development) Research Group. When the team started its work more than four years ago, they were faced with a dramatic starting situation: every fifth adult in Germany is unable to understand simple texts, and that across all social groups. Those who cannot master this cultural skill

are unable to participate socially and politically, apart from the economic damage that this issue also entails. Schroeder: "In our modern information-based society, people with lesser reading abilities are being marginalized. They often have little access to the working world. We cannot simply carry on as before. We have to do something to counteract this major problem at an early stage, and the solution has to be sustainable and successful."

According to the Leader of the Research Group, reading development programs often only yield inadequate results "because the processes which reading is based on have been insufficiently researched in the German language compared to English." That is the basic idea of REaD: "We are taking a step back and looking at the cognitive mechanisms behind reading before subsequently tackling the issue of improving the development of reading in concrete terms. Only new insights can create new prospects for effectively supporting people with reading difficulties."

The key question is of course how children learn to read – a particularly pertinent question given that many of them are now returning to their school books after the summer holidays. Which processes are relevant for learning to read? How important are verbal abilities in bridging the gap between spoken words and written letters? Schroeder: "Writing is 'coagulated language'. Reading is the distillation of linguistic data from visual information." Transferring fleetingly spoken words into spatially organized written language is "one of the most complex cultural-historical achievements".

ERIC should improve methods of learning

One particularly large-scale project run by the Group is ERIC (Effects of Reading Instruction on Cognitive Processes), in which the Max Planck Institute for Human Development has teamed up with the

Institute for Educational Quality Improvement (IQB), which is also based in Berlin, for an interdisciplinary collaboration. The computer-aided study in sixty school classes distributed across multiple German federal states has been investigating for more than a year which [cognitive processes](#) are particularly important in reading and can potentially be fostered by teachers. "We are not only evaluating the pupils, but also the teachers. We are therefore integrating cognitive reading research with research into teaching methods," explains Simon Tiffin-Richards, who is supporting ERIC in his role as an academic staff member of the Max Planck Institute.

The focus is on learning opportunities in reading lessons at primary school level, as well as finding out which didactic methods support the acquisition of reading skills.

Tiffin-Richards lists the four main aims of ERIC: "First, we are investigating the relevant cognitive processes involved in reading, such as the vocabulary of children and how well they understand the relationship between sentences." The second focus is on the teachers. How do they diagnose learning processes, how do they assess the vocabulary and text comprehension of their primary school pupils? Thirdly, the researchers are looking at how German teachers structure their German lessons. The last point connects all aspects of the study under the question: "Which measures in the teaching of German have a particularly positive impact on cognitive processes that are important for learning to read in the fourth grade?"

While groups of fifteen children at each of the participating primary schools work on various reading tasks and proficiency tests on laptops, teachers, concomitant to lessons, concepts and materials were asked how they evaluate the vocabulary, reading comprehension and speed of their pupils. To do this, they wrote up protocols and kept daily diaries. "Ultimately, this is a fundamental documentation of German teaching –

something that has not been systematically recorded to date," says Tiffin-Richards. This is intended to help build up a picture of the learning opportunities offered to children.

Recognizing and understanding words

The main study was completed in summer at the start of the summer holidays. The initial results have yielded two central findings: In fourth grade, differences in reading comprehension and spelling are attributable to the differing efficiency of word identification processes. The efficiency of word identification processes was, in turn, substantially influenced by knowledge of words and reading experience.

The second important insight relates to different sub-processes of word identification. Fourth grade pupils are, for instance, good at recognizing the phonemes of words. However, they had difficulties in spelling and recognizing spelling errors: "The word Deutsch is read relatively frequently but it is difficult to spell correctly. The word Wal ("whale") looks similar to the word Wahl ("choice") but their meanings are very different."

Provided by Max Planck Society

Citation: Researchers investigate the reading habits of children and adults (2016, August 30) retrieved 3 May 2024 from <https://medicalxpress.com/news/2016-08-habits-children-adults.html>

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