Internet reading and challenges in new digital learning environments

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Abstract.

The digital media and Internet have changed literacy practices in many ways requiring new reading skills and strategies, such as locating and evaluating relevant information. However, very little is known how school-age children, especially those with learning difficulties, meet additional challenges in this learning environment. In our eSeek-project (https://www.jyu.fi/edupsy/en/research/projects/eseek) we have studied 11-13 year-old school-aged children at the sixth grade in multidisciplinary interconnected studies in order to 1) increase our understanding of Internet reading and search skills, and the interconnections between Internet reading, cognitive strategies and skills, and related brain processes, 2) map the challenges which students with learning difficulties meet, and 3) to promote pedagogical practices for assessing internet reading skills.

For this purpose, we carried out a large scale Internet skill assessment with ca. 400 sixth-graders, including children with dyslexia and attentional problems. Our results show, for example, that performance in several domains of Internet reading is poorer in children with learning difficulties compared to their peers and that they meet extra challenges in Internet reading, especially in evaluating commercial web-sites. Our eye-tracking study in the laboratory setting for a sub-group of ca. 150 students also showed that children with dyslexia and attentional problems have difficulties using strategies in selecting Internet search results. We have also measured brain activation of neurocognitive processes related to efficiency of Internet reading. Children with learning difficulties showed atypical brain responses related to attentional and semantic processing as compared to the typical readers. The analyses of associating brain activation to Internet reading are ongoing. A consequent related training study showed that Internet reading skills can be improved by teacher driven training in the classroom setting. Our overall multidisciplinary approach increases scientific knowledge on digital reading, which helps to develop assessment tools and guidelines for instruction and teaching of internet reading.