



Research project of The Future of Learning, Knowledge and Skills Research Programme

INTERNET AND LEARNING DIFFICULTIES: MULTIDISCIPLINARY APPROACH FOR UNDERSTANDING INFORMATION SEEKING IN NEW MEDIA (eSEEK)



Tulevaisuuden oppiminen ja osaaminen

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The Internet as a new learning environment has changed literacy practices in many ways requiring new reading skills and strategies, such as locating and evaluating relevant information. These are also crucial everyday skills in today's digital, networked world. eSeek -project examines 6th graders' information seeking skills on the Internet and underlying factors of these skills in a multidisciplinary setting. Internet seeking skills are also investigated in children with different learning difficulties, including dyslexia and attentional problems.

The eSeek-project consists of three multidisciplinary interconnected sub-studies:

- 1) a large scale Internet skills assessment study,
- 2) an eye-tracking study, and
- 3) a neurocognitive study.

In the sub-study 1, ORCA (Online Reading Comprehension Assessment), developed in the United States by Professor Donald Leu and his colleagues, is adjusted to Finnish context. The ORCA simulates Internet environment and it provides information on students' skills on four areas: searching for relevant information and evaluating, synthesizing and

communicating online information. In order to explain students' performance in these different areas, students' decoding skills, linear text comprehension, inferencing skills, Internet use in schools and at leisure time as well as students' motivation to read on the Internet, are measured.

The sub-studies 2 and 3 concentrate on investigating information seeking and underlying processes at cognitive and neural levels. The focus is on students' skills on analyzing search page results, locating relevant information within a Web page and examining the relationship of these skills to cognitive skills, reading and attentional processes. We employ a) eye tracking method for studying children's visual attention processes during various Web search tasks, b) wide range assessment of cognitive skills, and c) EEG-based brain activity assessment of neurocognitive processes, such as semantic integration and attention.

In the sub-study 1, the sample includes 400 students at the sixth grade level (aged 11-13 years) measured in two cohorts. From this sub-study, altogether 150 students will

participate in the sub-studies 2 and 3, including typical learners belonging either to good, average or poor performing students in the ORCA assessment, and students with dyslexia and those with attentional problems.

As a result, the eSeek provides an assessment tool on Internet reading comprehension for Finnish students, information on primary school students' information seeking skills, and explanations on performance differences among students with and without learning difficulties. These results provide valuable new information for developing teaching methods for educating digitally literate citizens.

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eSeek!

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