The relationship between ICT use and reading literacy

Engl. transl.: The relationship between ICT use and reading literacy

# Keywords

* adolescents
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* literacy
* multiliteracy
* reading
* media education
* OECD’s Programme for International Student Assessment (PISA)

# Details

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## Authors

Leino K.

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## Sample

Adolecence (mostly 15 years), the sample is the same as for OECD’s Programme for International Student Assessment (PISA) survey in Finland.

## Implications For Educators About

Other

# Abstract

This study examined the use of information and communication technology (ICT) among15-year-old Finnish students and that use’s relationship to reading literacy scores in the data from the OECD’s Programme for International Student Assessment (PISA) survey. This study was executed with the help of six substudies, with each substudy taking a different view of ICT use and reading literacy. These substudies explored the purposes, frequencies and self-assessed skills of students’ ICT use, as well as students’ attitudes towards it. In addition, those ICT literacy activities and practices were studied in contrast to the reading literacy scores of the PISA surveys in 2000, 2003 and 2009. Gender differences were also studied. Moreover, students’ perceptions about the advantages and disadvantages of the Internet were explored. Because the PISA survey assessed the reading literacy of traditional printed texts, the study also includes a discussion of the similarities and differences between electronic texts and printed ones and outlines the literacy needs of the mid-2010s
in a multiliteracy frame. The data of this study consisted of the PISA reading literacy scores and the PISA student questionnaire. In substudies I–IV, the data were based on PISA 2000, substudy V drew
from PISA 2003 and substudy VI used PISA 2009. In 2000, two additional questions were
added to the student questionnaire in order to obtain information for this study about the
students’ use and perceptions of ICT. In all the substudies, the data formed a representative
sample of Finnish 15-year-olds, also in terms of gender differences. Several methods of analysis were used. In substudy I, the responses were examined using the constant comparative method and with the help of the Atlas.ti application. The other substudies used quantitative methods: substudy II, descriptive statistics (means,
percentages); substudy III, factor analysis; substudy IV, hierarchical cluster analysis; and substudies V and VI, multilevel regression analysis.The results of this study showed that Finnish adolescents use computers and the Internet frequently and for varied purposes. Despite this frequent use, they are not very interested in computers and their comfort with their abilities to use computers was only near the mean of OECD countries. However, these affective propensities are important, because the results indicated that those students who had self-confidence in ICT tasks performed better in the reading literacy assessment than those who did not have self-confidence. Gender differences were significant: boys were more interested in computers and they were more confident about their skills than girls. Boys also engaged more in activities that require technical knowledge, whereas girls engaged more in social activities. Both genders considered finding information as the best advantage of the Internet. Even though finding information was an advantage, the evaluation of that information was considered to be a challenge. According to the students, disadvantages also included
the spreading of viruses and Internet addiction. However, only a few questioned issues such as online piracy or plagiarism. This emphasizes the need to support students’ evaluative and ethical reading skills. The results showed that moderate and versatile ICT use might support the reading literacy skills of traditional literacy, especially among boys. One explanation may be that because the Internet is very much text based, those computer users who seldom read printed texts encounter different kinds of texts online. Even though reading fiction seems to best support reading literacy skills, those who diversely used a range of media did almost
as well as the active fiction-readers in the reading assessment. The lowest proficiency in reading literacy was among those who did not use computers at all or at least very seldom and among those who read printed materials the least, especially fiction. There seem to be differences in how ICT is used. On the one hand, information retrieval has a positive relationship to traditional reading literacy. Those who actively searched for
information did so despite the media, which means they were active readers of different kinds of texts and interested in reading. On the other hand, very active game playing, especially if it replaced other hobbies, had a negative relationship to reading literacy proficiency and on interest in reading. These two activities had a similar relationship to the use of reading strategies as well. One limitation of the study was that the digital reading of Finnish students was not assessed. This lack is why the comparison between traditional print literacy and electronic literacy was presented. This comparison revealed that many of the skills and strategies
needed with printed texts are needed with electronic ones as well, but practices such as evaluation of text reliability or ethical evaluation of the use of digital material are emphasized in the context of ICT. In addition, navigation skills are significant because without skills and knowledge for searching and navigation a reader may become frustrated and get lost by only following one hyperlink after another. ICT literacy skills are essential in the knowledge society, and those skills have meaning for studying, working and participating in society and its policymaking. The need for these skills is why students should be guided to literacy practices in different media. They should be familiarized with the general principles of different kinds of tools and programs (tool literacies), helped to understand the advantages and disadvantages of different media and their suitability for various kinds of tasks (media literacy), and guided in learning to interpret and evaluate different text types and their content (information literacies). All these areas should also include critical, ethical, cultural and social evaluation of context, media and content.

# Outcome

Finnish adolescents use computers and the Internet frequently and for varied purposes. Despite this frequent use, they are not very interested in computers and their comfort with their abilities to use computers was only near the mean of OECD countries. However, these affective propensities are important, because the results indicated that those students who had self-confidence in ICT tasks performed better in the reading literacy assessment than those who did not have self-confidence. Gender differences were significant: boys were more interested in computers and they were more confident about their skills than girls. Boys also engaged more in activities that require technical knowledge, whereas girls engaged more in social activities. Both genders
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