

Reading development from age 2 to 16: Prediction of divergent developmental paths and understanding of protective and risk factors.

Progress Report from 1.8.2017 to 14.11.2017

Alli Paasikivi Foundation awarded me a working grant for my dissertation work in the spring of 2017 and I have started using it since August. My project focuses on the risk and protective factors in reading development from age 2 to 16. It examines reading development over time and the key factors for the early identification of risks and resolution of reading difficulties (RD). The study will contribute to reading development theorizing and the development of systems that can be used to support reading skills. It builds on data from two existing longitudinal studies (the *Jyväskylä Longitudinal Study of Dyslexia* and the *Alkuportaati*) enabling the analysis of reading development from grade 2 to 9 and the predictive value of factors from age 2 to kindergarten. It contributes to both theory building and targeted interventions development. The specific research questions are the following; 1) Can we predict reading development and RD at different ages with very early skills and family risk? 2) Are reading skills and RD stable from grade 2 to grade 9 in a large Finnish sample? 3) What are the key protective and risk factors for different reading pathways from age 2 to 16?

During these 3 months, I have managed to work full-time on my project. The University of Jyväskylä has offered me a working room and a supportive working environment. The first study was re-submitted to another journal and is currently under review. It examined how family risk and age 2 expressive and receptive vocabulary predict reading fluency and reading comprehension development in grades 2 to 9. In addition, the second paper is finalized and is going to be submitted by December. It examines the stability of the development of reading fluency and reading comprehension and their difficulties from grade 2 to 6. Moreover, it examines whether RD are stable over time and whether the instability that has been shown in previous studies was because of measurement error or because of true change. The stability of RD was examined with a more advanced methodology (simulation studies) and larger sample (N=2000) than previously. It focuses on the problems that previous studies have had in the identification of RD. These methodological problems cause severe uncertainty if the resolving and late-emerging groups truly exist. By using simulation techniques, the study shows that both resolving and late-emerging groups truly exist in our Finnish data. Although the original plan was the second paper to be submitted at the end of spring 2017, we had the opportunity to proceed further into our analysis and to have an even more advanced statistical analysis. With the new analyses, we focused on the methodological weaknesses of the previous studies because of the usage of small samples, lenient cut-offs in RD identification, and inclusion of measurement error in analysis.

In addition to the progress with the papers, I had the opportunity to present my current work at two European conferences on education and one international conference on reading development and discuss the results with other internationally well-known researchers. This provided fruitful comments both on the methodology that was used and on the factors that could predict the different developmental trajectories of reading which will be the focus of the third paper.

The analysis of the data and the reporting of the results of the third study will be carried out during the winter and spring of 2018. The manuscript is estimated to be submitted for publication by the end of spring 2018. During the applied funding period (academic year 2018-2019) I will be writing the compilation of the dissertation. The aim is to be completed in 2019.

The progress with my dissertation would not have been possible without the funding from the Alli Paasikivi Foundation.

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