



# The Predictive Value of Preschool Language Assessment on Academic Achievement. A 10-year Longitudinal Study

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## Background

It is well established that children’s language knowledge at the age of five is strongly related to later reading achievement and that children identified with language impairments before starting compulsory school are at higher risk of reading difficulties (Catts, Fey, Tomblin, & Zhang, 2002; Hulme & Snowling, 2009). Language knowledge and reading ability are related; reading improves language knowledge, and vocabulary. Through reading, children learn words and become familiar with complex sentences.

Phonological awareness is the understanding of the sound structure of spoken words. It develops to some extent before the child learns how to read, but improves when the child masters the skills of reading. It seems that that phonological awareness has a causal relationship with reading achievement during the first years of schooling (Catts, et al., 2002; Hulme & Snowling, 2009; Peterson & Pennington, 2012).

Preschools are part of the educational system in Iceland like in many other European countries and almost all children attend. The phonological awareness test HLJÓM-2 was developed to identify, before formal reading instruction starts, those children who are at risk of reading difficulties (Ingibjörg Símonardóttir, Jóhanna Einarsdóttir, & Amalía Björnsdóttir, 2002). The children who were involved in the HLJÓM-2 development participate in this study (now 18 and 19 years of age).

The purpose of this study was to investigate whether language assessment at five years of age could predict results on national tests in Icelandic and Mathematics in Grades 4, 7 and 10.

## Method

This was a longitudinal study that began in 1997-1998 with measurements of 267 preschool children. The participants were contacted again in the spring of 2011 to obtain permission to link the results from preschool with their scores on the Icelandic National tests in Grades 4, 7, and 10. 83% agreed to participate.

## References

Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research*, 45, 1142–1157.  
Hulme, C., & Snowling, M. J. (2009). *Developmental disorders of language learning and cognition*. West Sussex: Wiley-Blackwell.  
Ingibjörg Símonardóttir, Jóhanna Einarsdóttir, & Amalía Björnsdóttir. (2002). HLJÓM-2 handbók [HLJÓM-2 handbook]. Reykjavík: Authors.  
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## Outcomes

There was strong correlation between language measurements and academic achievement throughout the 10 years of schooling.

	HL-2	Ice-4	Math-G4	Ice-7	Math-G7	Ice-10	Math-G10
HL-2	1						
Ice-4	.59***	1					
Math-G4	.60***	.75***	1				
Ice-7	.58***	.79***	.70***	1			
Math-G7	.51***	.62***	.76***	.70***	1		
Ice-G10	.54***	.71***	.64***	.82***	.63***	1	
Math-G10	.42***	.56***	.65***	.65***	.72***	.76***	1

HL-2= HLJÓM-2, Ice=Icelandic, Math=Mathematics, G4=Grade 4, G7=Grade 7, G10=Grade 10.

The pattern of correlation between HLJÓM-2 and academic achievement was relatively stable. Regression analysis indicated that phonological awareness added predictive value for scores in Icelandic above that of scores in Mathematics in the same grade. This suggests that phonological awareness skills have an effect above and beyond that of general academic ability.

Of the children who started compulsory school with low scores on HLJÓM-2 44-48% either did not take the national tests or did not participate in the study compared with only 10% -12% of the students with high scores (one standard deviation or more above the mean).

Starting compulsory school with poor language skills is potentially a disadvantage for a student. This result shows that testing done by preschool teachers could be the key to early intervention.



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