The Roles of Orthographic Impacts in Optimising Literacy Acquisition from First Steps to Full Literacy in Typical and Atypical Learners

Symposium 1, 45th IARLD Conference, Florida, Wednesday 25 Oct, 2023

Presenters Heikki Lyytinen, Chunghui Hsuan and Susan Galletly
with Discussant Annmarie Urso

At-risk children in regular-orthography nations experience far less major word-reading and spelling difficulties than similar English-reading children in Anglophone nations. What roles do orthographic impacts play in wide crosslinguistic early-literacy differences?

Australia's Susan Galletly's 2023 book, *The Research Tours: The Impacts of Orthographic Disadvantage*, explores crosslinguistic differences, Anglophone nations' difficulties optimising early-literacy development, and useful research directions into the future.

Finland's Heikki Lyytinen knows well Finland's 1-Stage Early Literacy with a highest-regularity orthography, and, through GraphoLearn research, the challenges of preventing and overcoming word-reading and spelling difficulties in children of many nations.

Taiwan's Chunghui Hsuan knows well Taiwan's 2-Stage Early Literacy, with a highest-regularity orthography used first, and the difficulties Asian nations resolved by moving to 2-Stage Early Literacy.

Discussant Annmarie Urso knows well word-reading and spelling interventions for English readers, and the extent these are effective.

What roles might orthographic differences play in research focused on overcoming early-literacy difficulties in diverse nations?

Presenter 1, Australia's Susan Galletly, will summarise research on crosslinguistic differences, and pose key questions:

Q1. What directions show strongest effectiveness for optimising word-reading and spelling in weakest English readers, e.g., the weakest 10% of achievers?

Q2. To what extent are current intervention methods for optimising word-reading and spelling in the weakest 10% of English readers able to achieve the intervention effectiveness that regular-orthography nations routinely achieve with weakest readers?

Q3. What factors impede achieving this level of effectiveness in at-risk English-readers?

Q4. Given the strong success of Taiwan, Japan and China's 2-Stage early literacy, should Anglophone nations explore 2-Stage Early Literacy (initially reading and writing an English regular orthography then transitioning to usual English)?

Q5. Given that 7 to 8 year olds have stronger executive-function and cognitive-processing skills than 4 to 5 year olds, should Anglophone nations explore starting formal reading and writing instruction at age 7.5 (mid-Grade-2), the age many European children are when learning to read far more regular orthographies, with the first 2.5 school-years focused on language and learning enrichment?

Q6. Are there ethical issues which should be considered, in at-risk children in Anglophone nations being far more likely to develop ongoing, severe word-reading and spelling difficulties?

Q7. To what extent should Anglophone children be entitled to word-reading and spelling development as easily developed as is routinely achieved across Taiwan, Japan and China, nations using 2-Stage Early Literacy?

Presenter 2, Finland's Heikki Lyytinen, building from the *Jyväskylä Longitudinal Study of Dyslexia (JLD),* is researching *GraphoLearn* intensive computer-game intervention that uses ongoing dynamic assessment to tailor instruction, in many nations, with over 2-million children now using GraphoGame.

GraphoGame builds *Basic Literacy* skills, of accuracy then fluency with letter sounds, word-reading and spelling. *ComprehensionGame* supports development of *Full Literacy*, building reading comprehension and analytical reasoning.

While regular-orthographies use a single orthographic-grainsize (phonemes), English uses multiple grainsizes, thus English GraphoGame has two forms: *GraphoGame Phoneme* and *GraphoGame Rime*.

Further, for regular-orthography children, learning to read and write (*Basic Literacy*) and reading and writing to learn (*Full Literacy*) can often be largely sequential, given most children have proficiently-accurate word-reading and spelling early in Grade-1.

That's far less the case for English readers, given that word-reading and spelling take many years to develop.

Q8. To what extent will progress made by English readers using GraphoLearn technology differ from that of regular-orthography readers?

Q9. What factors underlie these differences in progress?

Q10. Will GraphoLearn intervention be as successful with English readers as with regular-orthography readers?

Q11. Will it be more effective than other Anglophone interventions?

Q12. What differences in findings would Anglophone nations find in replicating the JLD's longitudinal study of children's development and its strategic assessments?

Q13. Whereas the JLD showed intervention at the time of letter knowledge and phonemic recoding to be the intervention point for children in nations with highly regular orthographies, might different points of intervention be relevant for Anglophone nations using English with its particularly high orthographic orthography?

Presenter 3, Taiwan's Chunghui Hsuan, will discuss Taiwanese education's 2-Stage Early Literacy, with children first reading and writing fully-regular ZhuYin FuHao (Tzuyin), which expedites word-reading, spelling, literacy, self-teaching and cognitive-processing; reduces likelihood of difficulties; plus supports transitioning to highly-complex morphologographic Hanzi.

Chunghui's work researching early literacy development in Taiwan provides useful insights on regular-orthography and complex-orthography education relevant to Anglophone nations and future research focused on optimising early-literacy development of at-risk children in all nations.

Q14. In nations with highly complex orthographies, to what extent does use of 2-Stage early literacy, and children learning to read and write a highly regular beginners' orthography, expedite transitioning and mastery of the nation's complex orthography, reduce activation of risk factors, and expedite successful word-reading and reading comprehension in at-risk children?

Q15. To what extent might Taiwan be a valuable role model for Anglophone nations exploring 2-Stage early-literacy development and use of a fully-regular beginners' orthography, prior to learning to read and write a complex orthography?

Discussant, USA's Annmarie Urso, is principal investigator for New York State Education Department's *Scaffolding for Students with Disabilities* project, with research interests including the development of effective reading interventions for students with dyslexia who have failed to respond to intervention, the role of processing speed and other cognitive correlates in poor readers, and the role of cognitive profiles in Response to Intervention models, with strong involvement in school-level instruction.

Q16. How best might Anglophone nations achieve instruction and interventions as effective as those of regular-orthography nations?

With the presenters' and discussant's interesting contrast in backgrounds and perspectives, this symposium will promote useful discussion and reflection.