

Topic of Symposium – SSSR 2018

Implementing RTI to Improve Reading Outcomes in Spanish in Spain, Chile, and Argentina: Challenges and Model Adaptations

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This symposium presents different ways of incorporating features of the Response to Intervention (RTI) framework to prevent and reduce the incidence of reading disabilities in Spanish, a language with a transparent orthography. All studies were conducted in the early elementary grades in different settings and with students with different demographic characteristics in three Spanish-speaking countries. Studies 1 and 2 present the effects of interventions in specific core components of beginning reading (i.e., pseudoword reading and vocabulary) on student decoding and reading comprehension. Study 3 describes the development of a screening tool that can help predict potential reading difficulties. Study 4 presents the multiple factors that can affect students with reading difficulties. We will discuss different ways these studies have been carried out within an RTI framework taking into account sociocultural differences and challenges researchers face in the implementation of RTI in their respective countries.

Examining the Effects of the Strategies Spanish-speakers Use to Decode Pseudowords in Spanish within an RTI Model

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Purpose: Examine the growth rates in pseudoword reading based on the strategies Spanish students in first grade use to decode these words.

Method: Participants were 366 Spanish students in first grade (188 normal readers, 115 struggling readers receiving a Tier 2 empirically based reading intervention, and 63 struggling readers receiving a business as usual (BAU) intervention. Measures were the pseudoword reading subtests of the Indicadores Dinámicos del Exito en la Letura (IDEL FPS, Plasencia-Peinado, Baker, Good, & Peinado, 2006). The Tier 2 intervention was delivered in small groups of 3-5 students, 30 minutes per day, 5 days per week throughout the academic year.

Results: Findings indicated that students in the Tier 2 intervention and in the BAU intervention made similar gains in their reading of pseudowords sound by sound. However, Tier 2 students made significant gains when reading the pseudowords as a whole word compared to students in the BAU intervention ($t = 3.26, p = .001$). Moreover, Tier 2 students obtained comparable scores on IDEL FPS at posttest as normal readers ($t = 1.49; p = .135$).

Conclusions: Based on Ehri's phases of reading development model (Ehri, 2005), students who are ready to *read to learn*, have acquired the alphabetic principle, and therefore are more likely to be successful understanding text compared to students who are still in the pre-alphabetic phase. The delay in mastering the alphabetic principle can have serious implications for developing robust reading skills in a timely manner. Thus, a RTI model has the potential to reduce the incidence of reading disabilities later.

Keywords: Tier 2 intervention, decoding, pseudoword reading, explicit instruction

The Impact of a Tier 2 Vocabulary Intervention on the Reading Comprehension of 4th Grade Students in Chile

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Purpose: Examine the impact of an explicit vocabulary intervention to teach words in-depth on the vocabulary and reading comprehension of Chilean students at risk for vocabulary and reading comprehension difficulties in 4th grade.

Method: Participants were 27, 4th grade students with low socioeconomic status attending a subsidized private school in a rural town in Chile. All students in 4th grade ($N = 63$) were first screened on a standardized receptive vocabulary test (TEVI-R, Echeverria, Herrera y Ségure, 2004). Students identified as at risk were then assigned to a control ($n = 11$) or treatment group ($n = 16$). To assess expressive vocabulary, we used an adapted Depth of Knowledge vocabulary measure, and a researcher developed reading comprehension measure. Treatment students received explicit vocabulary instruction in small groups of 5. Control students received the traditional vocabulary instruction of the same target words from the teacher.

Results: Preliminary results suggest that students in the treatment group significantly improved their vocabulary knowledge of the words taught and their reading comprehension compared to students in the control group. Observations of both groups indicated that most students in the treatment group participated actively in the sessions, and they were more willing to share the sentences they created with the target words compared to students in the control group.

Conclusions: Explicit in-depth vocabulary instruction can significantly improve vocabulary and reading comprehension outcomes for students at risk for reading difficulties. We discuss our study in the context of implementing a vocabulary program within a RTI framework that is being implemented schoolwide.

Keywords: Explicit instruction, vocabulary, reading comprehension.

Development of a Software Tool to Screen Students for Reading Disabilities in Argentina

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Purpose: We describe the steps we used to develop and test a software tool intended to identify students who might need additional reading support. The tool will be able to provide teachers with information that can help accelerate student reading growth within a Response to Intervention model.

Method: To develop the software tool, we first created the content of the assessment in collaboration with educational psychologists. Next, we tested the reliability and validity of the tool in a small-scale study. Participants were 150 Argentinean middle class students in grade 3. To determine construct and criterion-related validity we used the Woodcock-Munoz reading fluency subtest, and JEL measures (Pearson, 2005, 2009, 2012). We then developed the software tool using the results of our findings in the first study, and retested the same 150 students in grade 4. Currently we are testing the tool with a larger sample of students ($N = 1000$) across four grades.

Results: Validation and reliability studies indicate that (a) inter-scale factor reliability was .93, and criterion validity of the paper-pencil version was .83; (b) criterion-related validity using the software tool was also high ($r = .84$).

Conclusions: Preliminary findings indicate that this tool is able to identify students who might be at risk for reading difficulties from students who are reading at grade level. Implications for using the tool within an RTI framework to support teacher identification and delivery of more targeted interventions to struggling students will be discussed.

Keywords: screening assessment, validity, technology, reading difficulties, reading growth

A Multiple Risk Factor Perspective and Prediction of Literacy Acquisition and Learning Difficulties of Spanish Children Ages 3-6

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Purpose: Investigating the predictive power of early linguistic and cognitive skills, and genetic risk on Spanish literacy acquisition and learning difficulties within a prevention-oriented RTI model.

Method: Participants were 829 Spanish children ages 3 to 6. Two-thirds of the sample received a prevention program based on phonological awareness, vocabulary and morphosyntax that was provided by the classroom teacher for 15 minutes for 65 weeks when children were 3, 4 and 5 years of age. The other third of the sample received the usual instruction. Participants were assessed three times per year for three years. At the age of 4 and 5, the assessment sessions were designed following a multiple risk perspective. Measures included tasks in phonological awareness, rapid naming, verbal memory, vocabulary, morphology, syntax, oral comprehension, visual-attentional span, executive function, motor coordination and some early mathematical skills. At the age of 6 additional measures included were: word and pseudoword reading, reading speed, reading comprehension and orthographic decision. To assess genetic risk we surveyed parents.

Results: To take into account the high number of variables, we are planning on applying regression techniques based on statistical learning as Support Vectorial Machine Regression (SVMR), and explore the power of non-linear regression models. The sample will be studied globally, and considering the prevention program as a factor.

Conclusions: We anticipate that our results will yield a better understanding of which factors might significantly affect reading outcomes in young Spanish-speaking children. In accordance with previous studies, we hypothesize that a multiple risk perspective can achieve sensibility and specificity indexes above 70 %.

Keywords: Multifactorial perspective, phonological awareness, cognition, reading difficulties, reading assessments