Interactions among reading and language development and instructional contexts for English learners at risk for language and learning difficulties in Grades 4-12

Authors: Jeremy Miciak, Yusra Ahmed

Contact Email: Jeremy.Miciak@times.uh.edu

Background and Purpose: Improving outcomes for English learners (Els) with or at-risk for learning or language disabilities (LLDs) represents a complex and critical challenge in special education. Academic difficulties due to second language acquisition and those due to underlying LLDs present similarly. Yet, traditional service delivery models and identification procedures rely on disentangling the interrelated and multi-faceted causes of academic difficulties for Els with or at-risk for LLDs. The difficulty of this task results in a disjointed system in which Els with or at-risk for LLDs may receive supplemental services from multiple special populations programs (e.g., ESL supports, special education, Title I, un-identified intervention as part of multi-tier systems of support) or none at all. How these multiple programs interact with each other and the students they serve is understudied.

The purpose of this "In the Pipeline" proposal to is to seek feedback for an **exploratory project in planning, to be submitted to the Institute of Education Sciences in August 2020.** The goal of the project in planning is to investigate the interaction between the academic, cognitive, and linguistic characteristics of ELs with or at-risk LLDs and the instructional contexts in which they learn. The four-year, mixed methods research program collects data on Els with or at-risk for LLDs in Grades 4-12. A sequential cohort longitudinal design described in Aim 1 (also called an accelerated longitudinal design) provides the spine by which individual and instructional data collection methods are organized. Subsequent aims supplement the longitudinal dataset with multiple data to provide a more granular understanding of the complex interaction between individual characteristics, instructional programming, and institutional barriers to coordinated and comprehensive service delivery.

Aim 1 (Development): Characterize developmental trajectories for reading and language across three years using well-validated, educationally meaningful measures of reading and language collected across a single cohort in grades 4-12.

Aim 2 (Systems): Characterize the programs and systems that serve Els with LLDs through direct observation of program participation, including direct coding of instructional content and quality for a sub-sample of participants in Cohort 1.

Aim 3 (Complex Phenotypes): Characterize more complex learning problems through an in-depth assessment of reading, math, language, and other cognitive processes such as attention and executive functions.

Setting: This research will be conducted in a representative sample of Title I elementary, middle, and high schools in Texas in districts with greater than or equal 20% of enrollment of Els.

Population: Participants include Els with or at-risk for language or learning difficulties. There are two inclusionary criteria: (1) Els are defined broadly as students who are classified as limited English proficient (LEP) or were classified as LEP at any point in their school history, based on extant school records (2) Risk for language or learning difficulties is defined as any El who failed the State of Texas Assessment of Academic Readiness (STAAR) ELA or English subtest in the year preceding the study. We exclude students who are who qualify for special education services because of a sensory impairment, intellectual disability, or traumatic brain injury based on school records. We will

exclude participants if, after enrollment in the study, the student is diagnosed with a sensory impairment, intellectual disability, or traumatic brain injury by his or her school.

Research Design and Methods: We utilize a sequential cohort design, with cohorts of students who are in grades 4-10 in year 1 followed into grades 5-11 in year 2 and 6-12 in year 3. This design provides the opportunity to study student growth longitudinally across grades by linking the cohorts and determining if there is a common growth trajectory over time (Duncan & Duncan, 1994; Duncan, Duncan, & Strycker, 2006). Aim 1 data collection occurs at three points each year (fall, winter, spring) for reading. However, we assess language only in spring of each year because it is less sensitive to small changes. To supplement Aim 1 data collection, we propose to conduct at least three in-vivo observations of instruction for a small, representative subset of participants in year 2 (Aim 2) to better characterize the nature of their learning contexts. In year 3, we propose to conduct additional psychoeducational assessment for a small, representative subset of participants to characterize more complex learning profiles with a comprehensive battery at one time point (coinciding with spring year 3—the end of data collection).

Control Condition: There is no control condition.

Key Measures: Key reading measures for Aim 1 include the <u>STAR Reading</u> (Renaissance Learning, 2016), which is a computer adaptive measure of reading comprehension. It includes vertically aligned scale-scores, including normal curve equivalents, as well as lexile and instructional reading level scores. We also administer <u>DIBELS Next: Oral Reading Fluency</u> (ORF; Acadience Reading 2019) as a measure of fluency with connected text. We incorporate three measures of English language development (spring only) from the Woodcock-Johnson: <u>WJ-III Story Recall</u> (WJ-III: SR; Woodcock et al., 2007); the <u>WJ-III Understanding Directions</u> (WJ-III: UC; Woodcock et al., 2007); and <u>WJ-III: Picture Vocabulary</u> (WJ-III: PV; Woodcock et al., 2007). These measures permit calculation of the Oral Comprehension composite. We also include the Core Academic Language Skills Instrument (Uccelli et al., 2015), a group-administered assessment of cross-disciplinary academic language. These measures are supplemented by observational tools (Aim 2) including a version of the <u>Bilingual Timed Observation and Student Engagement Instrument</u> (Foorman, Carlson, & Santi, 2005). The Bilingual TOSE Instrument includes minute by minute observations of the language and content of instruction, as well as indicators of individual student engagement. Aim 3 measures include more comprehensive measures of reading (decoding, fluency, comprehension), math (problem solving and calculations), attention (behavior rating scales) and cognition (working memory, executive functioning).

Data Analytic Strategy: Data from the cohort-sequential design are analyzed for reading using latent growth curve (LGC) models to determine the nature of student growth over three years and the ways in which initial achievement, instructional variables, and other individual characteristics moderate reading and language growth.

References

Acadience Reading (2019). DIBELS: Next. Eugene, OR: University of Oregon Center on Teaching and Learning.

Duncan, T., & Duncan, S. (1994). Modeling incomplete longitudinal substance use data using latent variable growth curve methodology. *Multivariate Behavioral Research, 29,* 313-338. doi:10.1207/s15327906mbr2904_1

Duncan, T., Duncan, S., & Strycker, L. (2006). *An introduction to latent variable growth curve modeling: Concepts, issues, and application,* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Foorman, B.R., Carlson, C.D., & Santi, K.L. (2005). Lessons observed, lessons learned from classroom reading instruction in the primary grades. In D. Haaager, S. Vaughn, & J. Klingner (Eds.), *Validated reading practices for three tiers of intervention*. Baltimore, MD: Brookes Publishing Co.

Renaissance Learning. (2016). *Star Reading technical manual*. Wisconsin Rapids, WI: Author.

Uccelli, P., Barr, C. D., Dobbs, C. L., Galloway, E. P., Meneses, A., & Sanchez, E. (2015). Core academic language skills: An expanded operational construct and a novel instrument to chart school-relevant language proficiency in preadolescent and adolescent learners. *Applied Psycholinguistics*, *36*(5), 1077-1109.

Woodcock, R. W., McGrew, K. S., Mather, N., (2007). *Woodcock-Johnson III*. Itasch, IL: Riverside Publishing.