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## Critical Time Periods in Reading Development

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Reading is a fundamental aspect that supports all future education and understanding how to allocate scarce resources to support reading comprehension is of paramount importance. Previous research has shown the large impact that socio-economic status and race have on process of reading achievement. Our research examines if there are critical timepoints during reading education based on socio-economic status and race. Data for the study was taken from the nationally representative longitudinal study ECLS K-8 which follows 17,911 Kindergarten students through 7 waves of data starting in 1998 and ends after their 8th-grade year. For the current analysis the sample was grouped based upon race and SES. To simplify the analysis we examined two races, Black and White students, and three levels of SES, Poor, Middle class, and Rich samples. In the model Reading IRT (Item Response Theory) reading scores is used as the outcome during kindergarten, first, and third grade. Biological Sex is included within the groups as a control variable and group means differences were tested using an independent sample t-test. Our main findings show that the growth rate for reading is higher for students in 1st-3rd grade than with students in K-1st grade. Our findings also show that in K-1st male, Black students have a growth rate that is significantly less than white male students, but there was no difference amongst the female populations. However, across all genders and classes in 1st-3rd grades, black students, including black female students, grew significantly less in their reading achievements than white students. This research and finding points to important allocations in schools and future research.