

Abstract Title Page

Title:

Preventing School Dropout with Secondary Students: The Implementation of an Individualized Reading Intervention and Dropout Prevention Intervention

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Abstract Body

Background / Context:

Students transitioning from middle school to high school face a range of academic and social challenges (Balfanz, Herzog, & MacIver, 2007; Benner, 2011). Academic content is more diverse and challenging and its delivery is increasingly text based, requiring competence in literacy and problem-solving skill areas. Students entering 9th grade often struggle to find an appropriate peer group and may face challenges at home, hindering motivation and diminishing school engagement. The combined and inter-related challenges of poor achievement and low school engagement increase the likelihood of dropping out (Balfanz, et al., 2007; Fall & Roberts, 2012). Our research addresses important educational problems by providing evidence to support the efficacy of implementing individualized reading instruction and a dropout prevention program separately and in conjunction in improving reading achievement and school engagement for secondary students most at risk for academic failure.

The dropout prevention intervention uses a modified version of Check and Connect (C&C; Lehr, Sinclair, & Christenson, 2004). The evidence base for C&C is limited to several moderately scaled experimental studies (Sinclair, Christenson, & Thurlow, 2005; Sinclair, Christenson, Evelo, & Hurley, 1998). In one experimental trial, Sinclair et al. (2005) used C&C with 144 ninth-graders with emotional or behavioral disabilities. The majority of the participants were African American (67%) males (82%). Treatment students were less likely to drop out (39% compared with 58%) and more likely to demonstrate persistent attendance and remain enrolled in school. In another study, Sinclair et al. (1998) examined the efficacy of C&C in a sample of 94 students with learning and emotional/behavioral disabilities. Students in C&C were significantly less likely than similar control group students to have dropped out of school at the end of the freshman year (9% compared with 30%) and earned significantly more credits toward high school completion during ninth grade than did students in the control group.

The two studies that comprise the evidence base for C&C were conducted in the Minneapolis metropolitan area and targeted a specific population (primarily African American males receiving special education services), indicating a need for replication with other populations. To our knowledge, the project described in this proposal represents the first large scale experimental trial of C&C.

The reading intervention for struggling adolescents was developed and originally field-tested (Vaughn & Fletcher, 2012; Vaughn et al., 2011; Vaughn et al., 2010) with funding from the Eunice Kennedy Shriver National Institutes of Child Health and Human Development (Fletcher, Vaughn, Francis, & Denton, 2006). It features small (approximately 6 students per instructor), same-ability instructional groups, systematic presentation of new skills, practice with word-level reading and reading fluency (when appropriate), and regular progress monitoring. Intervention occurs daily for 50 minutes over approximately 160 sessions per school year, using a three-phase standardized treatment protocol.

Phase I of the program focuses on word study, fluency, vocabulary, comprehension at the sentence and paragraph levels, and overall comprehension. Students practice with individual letter sounds, letter combinations, and affixes, as necessary. *Phase II* focuses on vocabulary and comprehension, with additional instruction and practice on word study and fluency skills, as needed. Vocabulary is selected from classroom texts, primarily expository sources (e.g., informational text) but narrative (e.g., novels, chapter books), as well. *Phase III* focuses on the sustained application of word-level and comprehension practices using expository texts from

students' science and social studies textbooks, with a particular emphasis on comprehension and critical thinking at the sentence, paragraph, and multi-paragraph levels. We use progress-monitoring data across all phases of the intervention to make instructional decisions about individual students and to adjust instructional programming for groups of students.

Purpose / Objective / Research Question / Focus of Study:

The study evaluates the efficacy of the intensive reading intervention and a dropout prevention intervention separately and in combination for students at high risk for school dropout, specifically adolescent struggling readers. Our research questions include:

- (1) What is the efficacy of an intensive reading intervention compared with a well-documented, school-implemented comparison group on patterns of growth in reading comprehension?
- (2) What is the efficacy of dropout prevention intervention compared with a well-documented, school-implemented comparison group on patterns of growth in school engagement (e.g., academic-, psychological-, cognitive-, and behavioral engagement)?
- (3) What is the efficacy of the combined reading/dropout prevention intervention compared with a well-documented, school-implemented comparison group on patterns of growth in reading comprehension and school engagement?

Setting:

Three diverse high schools in a large urban southwestern US district participated in the study, with approximately a third of the sample from each site. In the sampled schools, approximately 43.11% of students are Hispanic, 25.51% are White, 19.44% are African American, 7.85% are Asian, and 4.06% are Native American or biracial. Additionally, 42.6% of students in participating schools are economically disadvantaged.

Population / Participants / Subjects:

Demographic details for sampled students ($n = 457$) are reported in Table 1. The majority of students are male (62.4%, $n = 285$) and Hispanic (44.9%, $n = 205$). An additional 17.5% ($n = 80$) are Anglo, 31.5% ($n = 144$) are African American, and 5.9% ($n = 27$) are Asian. Of the 457 students, 77 (16.9%) receive special education services and 79 (17.3%) are English Language Learners (ELLs).

Intervention / Program / Practice:

Description of Reading Interventions for Adolescents. In project year one, students in the reading condition participated in a daily, 50-minute reading intervention class. In project year 2, students in the reading conditions participated in 90-minute reading intervention every other school day, per the schools' request. We developed a series of 6-day instructional units aligned with recommendations from the IES Adolescent Literacy Practice Guide (Kamil, et al., 2008) that included a systematic, structured framework of instruction for each day in each unit. This framework included explicit and systematic instruction in word study, vocabulary, fluency, and comprehension. A modified version of Collaborative Strategic Reading (CSR; Klingner,

Vaughn, Dimino, Schumm & Bryant, 2001) was used to teach comprehension. Textbooks from students' history and science classes provided expository passages for the 6-day units. We used curriculum-based measures to assess content and vocabulary acquisition. The 6-day units were developed for instructional *groups* (versus *individuals*) and can be conceptualized as a "standard protocol." However, their delivery in the CSR-affiliated model required a more responsive instructional stance, where teachers and students actively and transparently collaborated around the processing, comprehending, and using of text according to the strengths and learning needs of the students in each group. We also implemented a motivation component by providing flexibility in text choice for daily reading, student/teacher conferencing, and goal-setting and monitoring opportunities.

Description of dropout prevention intervention. In year one and year two, students in the dropout prevention intervention participated in a modified C&C (Sinclair et al., 2004) that was implemented by an advisor. Students received the following supports from the advisor: (1) Daily check in, (2) Daily attendance, grades, and behavior checks, (3) Frequent parent contact, and (4) Small-group sessions. The small-group sessions conducted throughout both years focused on goal setting, problem solving, and college and career exploration. The advisors worked closely with individual students to discuss concerns about attendance, academic progress, and behaviors to determine the root of the perceived problem, set goals, and plan with the students for needed improvement. The advisors collaborated with parents, classroom teachers, and other school staff to help determine specific interventions needed, check progress, provide ongoing feedback, and provide necessary supports and motivation for the students.

Research Design:

The two-year experimental study combined a systematic, intensive reading intervention and a dropout prevention program to improve content area reading, encourage school engagement, and enhance overall school outcomes. The design of the study included 3 treatment conditions (reading without C&C [R only]; reading with C&C [R+DO]; C&C without reading [DO only) and 1 business as usual condition (BAU). Students were randomly assigned to each of the conditions. We provided intervention to students during their 9th and 10th grade year (2010-2012). The proposed presentation will report effects of the two-year reading intervention, the two-year dropout prevention intervention, and the combined treatment.

Data Collection and Analysis:

Data Collection. Students in the bottom 25th percentile on the prior-year's state high-stakes test were eligible for participation. Reading achievement was measured using Gates-MacGinitie Reading Test (Gates & MacGinitie, 2000). School engagement was measured using the School Dropout Risk Indicator (SDRI; Vaughn, Roberts, Wexler, & Fall, 2012). The SDRI estimates students' likelihood of dropping out based on dispositional sources of risk. Dispositional risk is organized around the research on school-related student engagement (Appleton, Christenson, & Furlong, 2008) and addresses academic-, cognitive-, psychological-, and behavioral- engagement. Findings based on confirmatory factor analysis support the viability of the SDRI's factor structure ($\chi^2(195) = 590.741, p > .05, CFI = .93, TLI = .97, RMSEA = .05$).

Data Analysis. We evaluate the effect of reading intervention on students' reading performance (Research question 1) using multi-level multiple-group growth models. The effect

of dropout prevention on students' engagement (Research question 2) was estimated using multi-group multiple-indicator multi-level (MIML) growth models (Muthén & Muthén, 1998-2011). For the latter analysis, we tested measurement invariance across groups over time (Cheung & Rensvold, 2002) by fitting and comparing a series of increasingly restricted nested models to address configural invariance, invariance of factor loadings, and invariance of intercepts. After establishing measurement invariance, we estimated six multi-group MIML growth models to assess whether there are differences in slope between students in treatment and comparison groups. We are analyzing data for the combined treatment using latent variable growth models.

We fit models using Mplus 6.21 (Muthén & Muthén, 1998-2011), which addresses missing data using full information maximum likelihood estimation (FIML; Little & Rubin, 1987). In FIML each parameter is estimated using all available data for that particular parameter (Enders, 2010). We adjusted standard errors and degrees of freedom to account for the nesting of students in schools (Stapleton, 2006).

Findings / Results:

Effects of reading intervention. We combined the R only and R+DO group ($n = 172$) and compared it to the combined DO only and BAU comparison group ($n = 206$) to estimate treatment effects in reading, using multiple group growth models. The groups differed significantly ($p = .036$), with the combined R only and R+DO group outperforming students who did not participate in reading intervention (DO only and BAU). The average difference was about .5 standard score points on the Gates-MacGinitie passage comprehension subtest per measurement interval or about 1.5 standard score points overall. This represents an effect size (Hedges g) of .28, where effect is the standardized difference in mean slopes for the two groups.

Effect of dropout prevention. To evaluate the effect of dropout prevention intervention we combined the DO only and R+DO group ($n = 181$) and compared it to the combined R only and BAU comparison group ($n = 197$). School engagement, as measured by the SDRI (Vaughn et. al., 2012) was the primary outcome (pending availability of school completion data in the spring of 2014). Based on a series of MIML growth models, the treatment group experienced greater gains in levels of school engagement over the two-year treatment. Effects ranged from .89 for psychological engagement to .62 for academic engagement and goal setting/problem solving. Treatment effects were calculated as the standardized difference in group mean slopes.

Conclusions:

The two-year experimental study evaluated the efficacy of an intensive reading intervention and a dropout prevention intervention. The results from the first two years of the study are statistically significant in favor of the treatment group for the variables of high importance including students' perceptions of their school engagement and reading-related outcomes. Specifically, participants in the intensive reading interventions (with and without C&C) significantly outperformed those in a randomized, untreated comparison on a standardized measure of reading comprehension, and students participating in the modified C&C treatments (with and without reading) reported higher levels of school engagement over time compared to students in the untreated comparison. The treatment phase of the study is complete and we are following this cohort through May of 2014 (i.e., the end of their senior year in high school) to collect graduation data.

Appendices

Not included in page count.

Appendix A. References

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Appendix B. Tables and Figures
Not included in page count.

Table 1

Demographic characteristics of the student participants

	<i>n</i>	%
Gender		
Male	285	62.4
Female	171	37.6
Race		
White	80	17.5
Hispanic/Latino, any race	205	44.9
African American	144	31.5
Asian	27	5.9
Two or more races	1	.2
English as a second language		
Yes	79	16.9
No	377	82.7
Student with special needs		
Yes	77	16.9
No	379	83.1