



Contents lists available at ScienceDirect

Journal of School Psychology

journal homepage: www.elsevier.com/locate/jschpsyc

Meta-analysis of targeted small-group reading interventions

Matthew S. Hall^a, Matthew K. Burns^{b,*}^a University of Minnesota, United States^b University of Missouri, United States

ARTICLE INFO

Action Editor: Steve Kilgus

ABSTRACT

Small-group reading interventions are commonly used in schools but the components that make them effective are still debated or unknown. The current study meta-analyzed 26 small-group reading intervention studies that resulted in 27 effect sizes. Findings suggested a moderate overall effect for small-group reading interventions (weighted $g = 0.54$). Interventions were more effective if they were targeted to a specific skill ($g = 0.65$), then as part of a comprehensive intervention program that addressed multiple skills ($g = 0.35$). There was a small correlation between intervention effects and group size ($r = 0.21$) and duration ($r = 0.11$). Small-group interventions led to a larger median effect size ($g = 0.64$) for elementary-aged students than for those in middle or high school ($g = 0.20$), but the two confidence intervals overlapped. Implications for research and practice are discussed.

1. Introduction

For students to effectively learn, instruction must match their diverse levels and needs (Al Otaiba & Fuchs, 2006; Kamps & Greenwood, 2005). Small-group intervention is defined as supplemental instruction delivered simultaneously to three or more students with homogenous skills to support their reading needs (Gersten et al., 2009). Small-group interventions provide the opportunity for students with reading difficulties to receive literacy instruction that more closely matches their needs. To date, small-group intervention is the component of a reading response-to-intervention model with the strongest research base (Gersten et al., 2009).

Previous research indicates that small-group reading interventions should (a) focus on the five areas of reading instruction (phonemic awareness, phonics, fluency, vocabulary, and comprehension) as outlined by the National Reading Panel (2000), (b) be implemented three to five times per week for approximately 20 to 40 min each session, and (c) build skills gradually while providing opportunity for frequent interventionist-student interaction (Gersten et al., 2009). Although small-group reading interventions are a common method used with struggling readers in U.S. schools (Foorman & Torgesen, 2001), important questions remain regarding the practice. We will describe the research, as well as evidence gaps or areas of inconsistency, in the literature below.

1.1. Effects of small-group reading interventions

Research has consistently demonstrated the positive effects of small-group reading interventions with students at risk for reading failure in early elementary (Kamps et al., 2008; Nielsen & Friesen, 2012), upper elementary (Faggella-Luby & Wardwell, 2011), middle school (Faggella-Luby & Wardwell, 2011; Vaughn et al., 2011), and high school (Bemboom & McMaster, 2013). Previous meta-analytic research found large effects for interventions with struggling readers in grades 4 through 12 ($g = 0.95$; Scammacca et al., 2007), but an update of the meta-analysis found smaller effects ($g = 0.49$) and hypothesized that the change was due to use of

* Corresponding author at: 109 Hill Hall, University of Missouri, Columbia, MO 65211, United States.

E-mail address: burnsmk@missouri.edu (M.K. Burns).<https://doi.org/10.1016/j.jsp.2017.11.002>

Received 22 June 2016; Received in revised form 19 October 2017; Accepted 8 November 2017

Available online 15 November 2017

0022-4405/ © 2017 Society for the Study of School Psychology. Published by Elsevier Ltd. All rights reserved.

more standardized measures, differences in participant characteristics, more rigorous research designs, and improvements in the business-as-usual control group (Scammacca, Roberts, Vaughn, & Stuebing, 2015).

1.1.1. Standardized measures

Researchers have long recognized that standardized norm-referenced measures of reading are less sensitive to growth and individual differences in reading than briefer measures such as curriculum-based measurement (Marston, Fuchs, & Deno, 1986). Although standardized measures correlate well with state accountability tests (Shapiro & Gebhardt, 2012), curriculum-based measurement results in much more sensitive data (Miura Wayman, Wallace, Wiley, Tichá, & Espin, 2007). Scammacca et al. (2015) compared the effects from standardized measures of reading to the data from a previous meta-analysis and found smaller average effect size ($g = 0.21$) as compared to the previous research ($g = 0.42$; Scammacca et al., 2007). Thus, the result of using standardized measures to assess the effect of reading interventions appears to be an area in need of additional research.

1.1.2. Student characteristics

Beyond outcome measures, the age of the student receiving the small-group intervention could also influence the results. Previous research has consistently found that age of the student affected the results of reading intervention, but the difference was most pronounced for students in preschool and kindergarten (Suggate, 2016), and the effects of reading interventions for students in kindergarten maintained through the third grade (Simmons et al., 2008). Moreover, a synthesis of previous research found that reading interventions were most effective for students in kindergarten and first grade, but the review only included students through third grades (Wanzek & Vaughn, 2007). Vaughn et al. (2010) found small effects ($d = 0.16$) for a small-group reading intervention with students in middle school. However, meta-analytic research found larger mean effects for students in 4th through 12th grades (Scammacca et al., 2007, 2015). Such equivocality in findings to date suggests the grade of students receiving small-group reading intervention is also an area in need of additional research.

1.1.2.1. Research designs. When reviewing the research of a specific topic such as reading interventions, study methodology and quality of the research design should be taken into account to reduce potential bias in the findings (Wortman, 1994). Higher quality designs include studies that use randomized assignment and have low attrition or equal groups after attrition (What Works Clearinghouse, 2008). Systematic reviews of the reading intervention literature found that randomized experiments are a common method of small-group reading intervention research (Slavin, Lake, Davis, & Madden, 2011). Previous research is somewhat conflicting in that while some studies have indicated study quality did not influence reading outcomes (Ehri et al., 2001), other investigations have suggested higher quality research designs yielded larger effects (Elbaum, Vaughn, Tejero Hughes, & Watson Moody, 2000; Piasta & Wagner, 2010). In addition, research has demonstrated that the quality of the control or comparison group needs to be considered, as this group represents the counterfactual against which intervention effects are evaluated and estimated (Lemons, Fuchs, Gilbert, & Fuchs, 2014).

1.2. Characteristics of the intervention

There are other areas of potential research for small-group interventions because many components of what makes small-group reading interventions effective are still debated or unknown (Begeny, Krouse, Ross, & Mitchell, 2009; Chambers et al., 2011; Slavin et al., 2011). Below we will discuss the intervention group size, who administers the intervention, and intervention duration as characteristics of the intervention that could influence the effects.

1.2.1. Interventionist

Delivering interventions to multiple students simultaneously can be more efficient and require less time than when administering them to each student separately, but who is administering the intervention is also important to consider when determining intervention efficiency. In an extensive review of the literature on effective reading interventions, Slavin et al. (2011) found that interventions delivered by paraprofessionals and volunteers were effective, but the interventions were more effective when delivered by certified teachers. Moreover, volunteers can effectively implement reading interventions, but the effectiveness may depend on how well the volunteers were trained (Elbaum et al., 2000).

1.2.2. Intervention dosage

Another important consideration for intervention efficiency is the length of time the intervention is implemented. Researchers are more frequently considering intervention dose, or the number of teaching episodes per intervention session, which is cumulatively computed by multiplying the number of teaching episodes per session, by the number of sessions per week, by the number of weeks (Warren, Fey, & Yoder, 2007). Most intervention researchers do not report teaching episodes, but report total intervention duration in minutes or hours as an indicator of dose. It may seem intuitive that the longer an intervention is delivered the more effective it will be, but meta-analytic research found that intervention length was not associated with reading outcomes (Elbaum et al., 2000; Swanson, 1999). There could be a nonlinear relationship between intervention duration and effects because moderate-length interventions had the largest effects, and interventions that were short or relatively long in duration were equally effective (Ehri et al., 2001).

Download English Version:

<https://daneshyari.com/en/article/6843773>

Download Persian Version:

<https://daneshyari.com/article/6843773>

[Daneshyari.com](https://daneshyari.com)