Comparison of Two Supplementary Reading Interventions: Outcomes of Students At-Risk for Reading Failure at an Elementary School Using Direct Instruction, DIBELS, and SARF

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Introduction

• Failure to develop basic reading ability during the first few years of school has been shown to be related to a number of academic, economic, and socio-emotional problems. [4, 5, 7]

• Those children in elementary school who encounter reading difficulties, are at high risk for future reading failure. For example, students who place in the lower quartile on the reading continuum diverge from their same-age peers in the early elementary school grade levels. [2]

• As a result, it is crucial to investigate the effectiveness of reading programs and further research specific instructional components that could improve future reading instruction.

• Past research shows that effective reading instruction should be evidenced-based, explicitly taught, begin at the student's skill level, and the curriculum should progressively scaffold the essential reading materials over time. [3]

• A current reading program that has a long history of effectiveness within education and emphasizes these principles is Direct Instruction (DI). [1]

Purpose

•This study examined and explored the reading achievement outcomes between students receiving a supplementary Direct Instruction (DI) reading intervention and a students' receiving additional individualized reading instruction (IRI) reading at an elementary school. Three research questions were examined:
(1). Which reading program produced higher levels of Nonsense Word Fluency and Oral Reading Fluency?
(2). Which reading program was most effective in decreasing total reading errors?

Method

• 12 students At-Risk for reading failure enrolled in 2nd grade at an elementary school.

• Students were given a placement test and divided into two groups. Participants were then pseudo-randomly divided into 2 DI groups and 2 IRI groups.

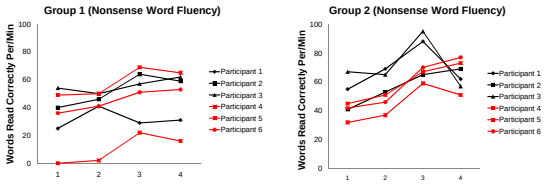
• Baseline data DIBELS (NWF and ORF) and SARF data were collected 2 weeks prior to the intervention.

• DI was then administered to the DI groups 4 times a day for 30 minutes each session. DI was conducted for a total of nine weeks by two trained undergraduate students.

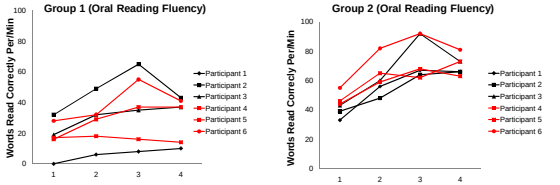
• The IRI group received individualized reading instruction delivered by undergraduate students.

• DIBELS (NWF and ORF) and SARF data were collected in the DI and IRI groups after three weeks, six weeks, and nine weeks of instruction. During data collection, the researcher always collected SARF data, but received help from two graduate students on collecting the DIBELS (NWF and ORF) data.

Results



• Each line graph displays DIBELS NWF scores for students from baseline to probe 3. Between participants variable DIBELS NWF was non-significant using a critical alpha of .05 ($F(1, 10) = 1.081$, $p = .323$). Within subjects variable, assessment time, was significant using a critical alpha of .05 ($F(3, 30) = 20.255$, $p < .001$). The interaction between group and assessment time was non-significant using a critical alpha of .05 ($F(3, 30) = 2.454$, $p = .082$).



• Each line graph displays DIBELS ORF scores for students from baseline to probe 3. Between participants variable DIBELS ORF was non-significant using a critical alpha of .05 ($F(1, 10) = .079$, $p = .784$). Within subjects variable, assessment time, was significant using a critical alpha of .05 ($F(3, 30) = 25.23$, $p < .001$). The interaction between group and assessment time was non-significant using a critical alpha of .05 ($F(3, 30) = .570$, $p = .639$).

Each line graph displays SARF mean total errors for groups from baseline to probe 3. Between participants variable for mean reading errors was non-significant using a critical alpha of .05 ($F(1, 8) = .244$, $p = .638$). Within subjects variable, assessment time, was significant using a critical alpha of .05 ($F(3, 24) = 3.01$, $p < .05$). The interaction between group and assessment time was non-significant using a critical alpha of .05 ($F(3, 34) = .090$, $p = .965$).

Discussion

• Both reading programs were successful at increasing DIBELS NWF and ORF over time. Both reading programs were also successful at decreasing reading errors over time.

• There were no significant differences between reading programs. DI created the same results as IRI. However, the DI reading program required less resources and individualized attention to students. As result, DI may be effective in helping districts save money by reducing the number of resources used to help students.

• This study strengthens previous research that DI is an effective reading program and that current individualized tutoring strategies at this elementary school are also effective at increasing DIBELS NWF and ORF over time.

• Future research should aim to isolate instructional variables to a greater degree and investigate what specific reading instructional variables contribute to academic growth.

Limitations

(1). This study was conducted in one elementary school and therefore additional studies should be conducted to validate the efficacy of these results across other settings.

(2). SARF is a newly developed IRA and therefore additional research should be conducted to further substantiate the value of this instrument.

(3). Many DI sessions were not conducted due to weather, sickness, school activities, etc. As a result, DI was not implemented at the frequency originally planned.

(4). This study has used a small sample of participants (N=12) and consisted predominantly of Caucasian students, thus limiting generality.

(5). One student moved during the middle of this study.

(6). Two SARF data points, from two students, are missing due to sickness.

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