



EFFICACY STUDY SUMMARY 2022-2023

PROGRAM DESCRIPTION

Zaner-Bloser Building Fact Fluency (BFF) deepens students' understanding of math strategies by exploring operational relationships through games, storytelling, and purposeful practice, bolstering their ability to transfer and extend math skills and concepts to novel situations, and strengthening their identity as mathematicians to build community, curiosity, and confidence in math learning.

STUDY DETAILS

Analysis Sample Sizes

- 1,621 Grade 3 students across 25 schools
 - 1 ZB-BFF Pilot School: N = 94
 - 4 ZB-BFF Schools Starting Fall 2022: N = 256
 - 20 Comparison Schools: N = 1,271

Time Frame

- Baseline Testing: Spring 2021
- Pilot BFF School begins in Fall 2021
- Additional four schools in BFF district begins in Fall 2022

Methodology

- Using publicly available data, LXDR Research matched 20 Iowa schools of similar size and Spring 2021 proficiency scores with the pilot school.
- X^2 tests were conducted to determine whether participating schools significantly differed in percentage proficiency at baseline and for each year of program participation.

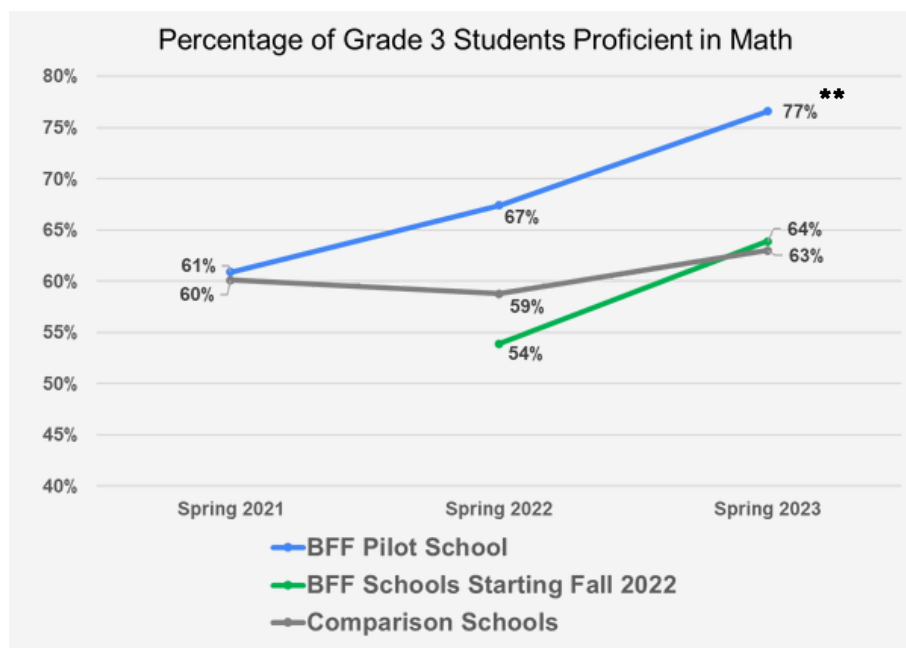


STUDY SUMMARY

Math fact fluency, the ability to quickly and accurately recall basic addition, subtraction, multiplication and division facts, is a foundational mathematical skill. Zaner-Bloser Building Fact Fluency (BFF) has two programs designed to improve math fact fluency among early elementary school students. This study examined the change in percentage of Grade 3 student's math proficiency in BFF participating schools, as compared with similar Iowa comparison schools from 2021-2023. One pilot school began using BFF in 2021, and four additional schools began the program in 2022.

KEY FINDINGS

- In Spring 2021 (i.e., at baseline), the pilot and comparison schools were virtually identical in the percent of Grade 3 students proficient in math.
- By Spring 2023, Grade 3 students in the BFF pilot school had a significantly greater percentage of students testing on grade level for math proficiency (77%) than the comparison schools (63%).
- The four BFF schools that began the program Fall 2022 showed greater growth in percent proficiency (+10%) than the comparison schools (+4%) in one year. These results were statistically similar and show a promising trend.
- In sum, all BFF schools showed meaningful, consistent increases in percent proficiency in math each year, and these effects were statistically significant after 2 years of BFF program use.



Note: BFF Pilot School = 61%, Comparison Schools = 60%; $p = .89$

** BFF pilot school school students became significantly more likely to be proficient in math (77%) than students in comparison schools (63% proficient; $p < .01$, Phi coefficient effect size = .07).

