

Spring 3-27-2019

Impact of Backward Design on 4th Grade Mathematics Students' Understanding of Adding and Subtracting Whole Numbers

Andrew Fiegen
Dakota State University

Kindra Schneider
Dakota State University

Follow this and additional works at: <https://scholar.dsu.edu/research-symposium>

Recommended Citation

Fiegen, Andrew and Schneider, Kindra, "Impact of Backward Design on 4th Grade Mathematics Students' Understanding of Adding and Subtracting Whole Numbers" (2019). *Annual Research Symposium*. 1.
<https://scholar.dsu.edu/research-symposium/1>

This Book is brought to you for free and open access by the University Publications at Beadle Scholar. It has been accepted for inclusion in Annual Research Symposium by an authorized administrator of Beadle Scholar. For more information, please contact repository@dsu.edu.

Impact of Backward Design on 4th Grade Mathematics Students' Understanding of Adding and Subtracting Whole Numbers



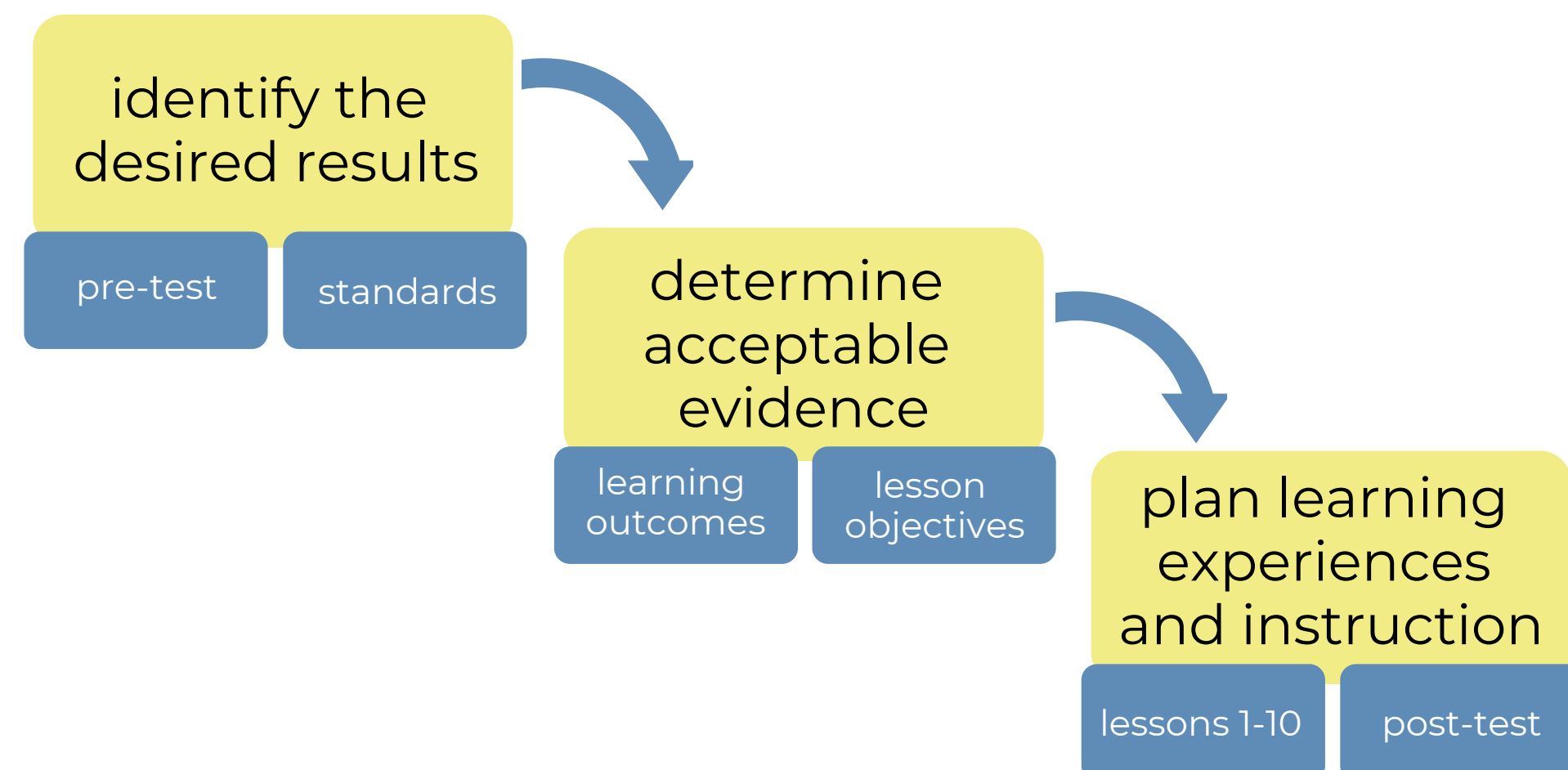
Student: Andrew Fiegen Faculty: Kindra Schneider

Introduction

The Backward Design method (1998), as explained by McTighe and Wiggins, is an approach to teaching and planning contrary to traditional methods. This framework causes thoughtful planning for what students should understand and be able to apply. Additionally, a teacher must ensure the content, instruction, and skills align with standards and objectives. The goal of this project was to explore the impact of the Backward Design method in a mathematics classroom consisting of 4th-grade students.

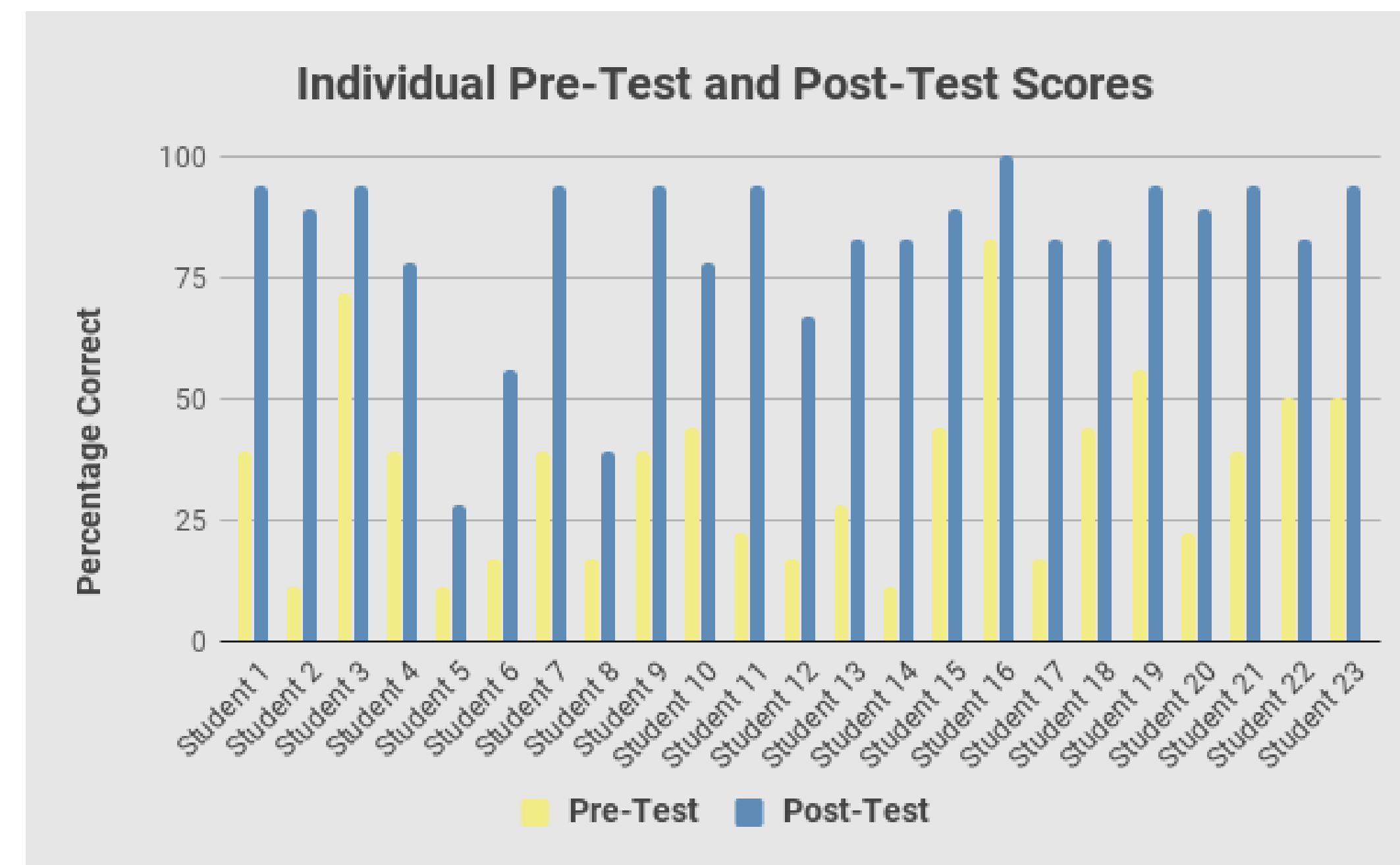
Methods

Following the design and planning portion of the unit, a pre-test was given, the instruction was implemented, a post-test was given, and the results were analyzed.



Data Analysis

Twenty-three students participated in this study. Pre-test and post-test results were analyzed to measure student growth. Results are shown below.



35%
Pre-Test

82%
Post-Test

Conclusions

As seen in the results in the graph, each student displayed significant growth throughout the unit. The class average raised from 35% on the pre-test to 82% on the post-test, resulting in a difference of 47% increase overall.