THE EFFECTIVENESS OF USING NGSS CLAIM, EVIDENCE, AND REASONING TO IMPROVE ANALYTICAL WRITING IN ELEMENTARY LITERACY

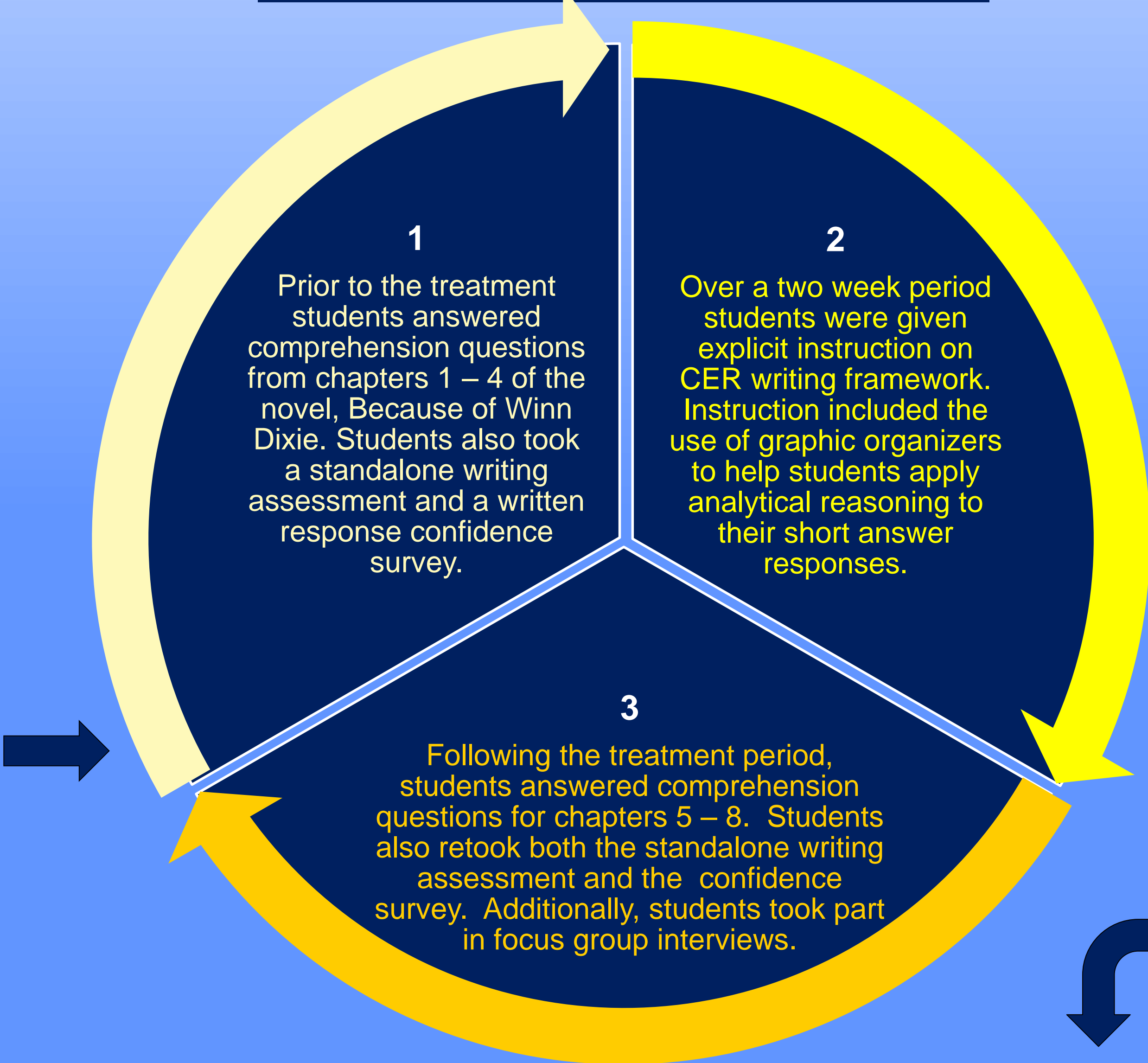Chad Martin, Olympic View Elementary School, Oak Harbor WA, 2025

Background

My capstone research was conducted with sixty five fourth-grade students from three ELA classrooms at Olympic View Elementary School. I decided to undertake this research because many of my students struggle to apply analytical reasoning skills to their short-answer responses to comprehension questions in literature.

Research Question

What are the effects of using a Claim, Evidence, and Reasoning (CER) framework to apply analytical reasoning to writing in elementary literacy?

Methodology & Treatment
$N = 65$

1 Prior to the treatment students answered comprehension questions from chapters 1 – 4 of the novel, Because of Winn Dixie. Students also took a standalone writing assessment and a written response confidence survey.

2 Over a two week period students were given explicit instruction on CER writing framework. Instruction included the use of graphic organizers to help students apply analytical reasoning to their short answer responses.

3 Following the treatment period, students answered comprehension questions for chapters 5 – 8. Students also retook both the standalone writing assessment and the confidence survey. Additionally, students took part in focus group interviews.

Data Collection Instruments

Because of Winn Dixie CER Questions	Student Writing Checklist	Pre- and Post- CER Writing Assessments	Written Response Confidence Survey	Student Interviews

Results & Conclusions

The data shows that students made measureable growth following the treatment.
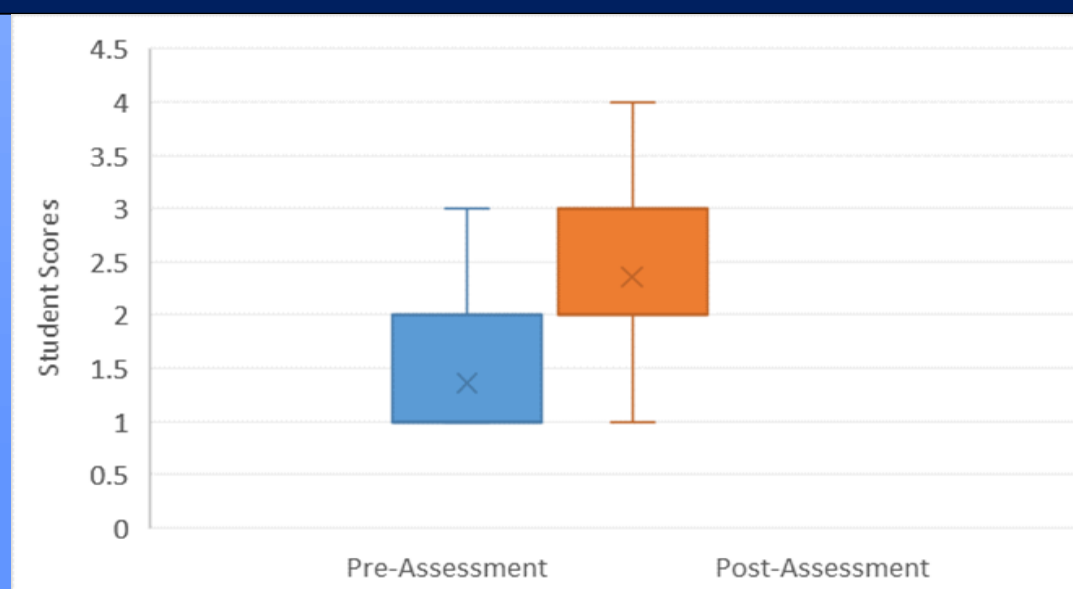

Figure 1. Box and Whisker plot of student results for the CER Writing Assessment (N=65).

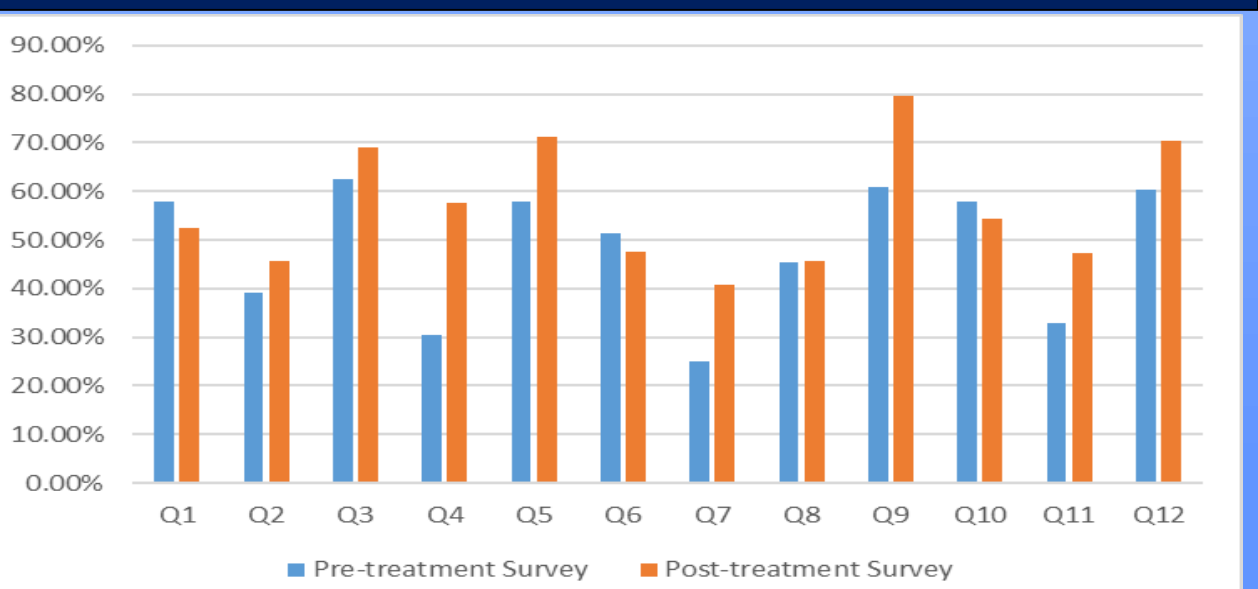Student confidence in responding to short answer questions increased following the CER treatment.

Figure 2. Change in Positive Student Responses from Pre- and Post-Treatment Writing Confidence Survey Questions (N =65).

Student Quotes

"I make sure to read it to make sure it makes sense and see if it supports the evidence."

"It's like explaining why your evidence is good"

"It's what you believe or think based on the evidence in the text."

Claim

- Using a CER writing framework is an effective method for improving students' ability to apply analytical reasoning to short answer comprehension questions in literature.

- The CER framework increased the level of student confidence when responding to short answer comprehension questions.

Evidence

- A normalized analysis of the Pre/Post CER Writing Assessment showed a gain of .38, which is considered a medium gain.
- The pre-assessment average for the three classes was 1.38, or 34.5%, and the post-assessment average was 2.38, or 59.5%. The difference in scores between the assessments represents a 25% increase in the student scores.

Reasoning

- Following the treatment, student writen responses were stronger and included reasoning that connected their textual evidence to their claims.

- Student survey and interview responses demonstrated a greated level of understanding of the CER framework, and included domain-specific academic language.

Scan the QR code for additional details!