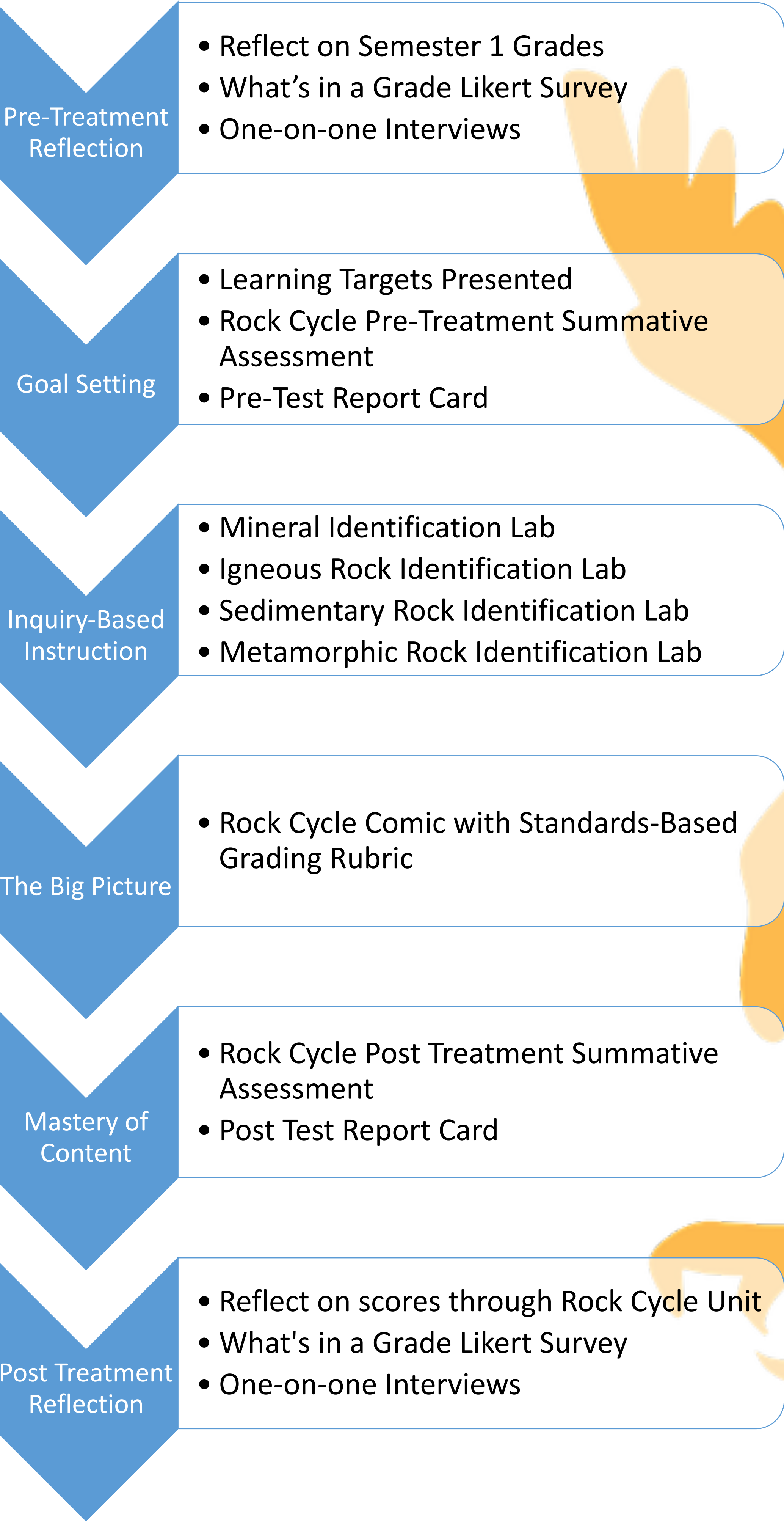


STANDARDS-BASED GRADING IN 9TH GRADE EARTH SCIENCE CLASSROOMS

Adrienna DeCock | Fergus High School | Lewistown, MT | July 2019



<https://www.bestplaces.net/city/montana/lewis town>



INTRODUCTION AND BACKGROUND

Fergus High School is located in the heart of Central Montana. Student enrollment is 333. Forty percent of the student population qualifies for free and/or reduced lunch and 93% identify as Caucasian.

My freshman students lack of understanding of how their grades are calculated led to the creation of my focus and sub focus questions. This eleven-week treatment period consisted of twenty freshman Earth science and Title Earth Science students.

METHODOLOGY

The breakdown of the treatment period is outlined to the left. All formative assessments were evaluated using standards-based grading rubrics. All formative assessments focused on the mastery of two learning targets: minerals have specific and quantifiable properties (LT1), and rocks are made of one or more minerals and are formed in different ways (LT2).

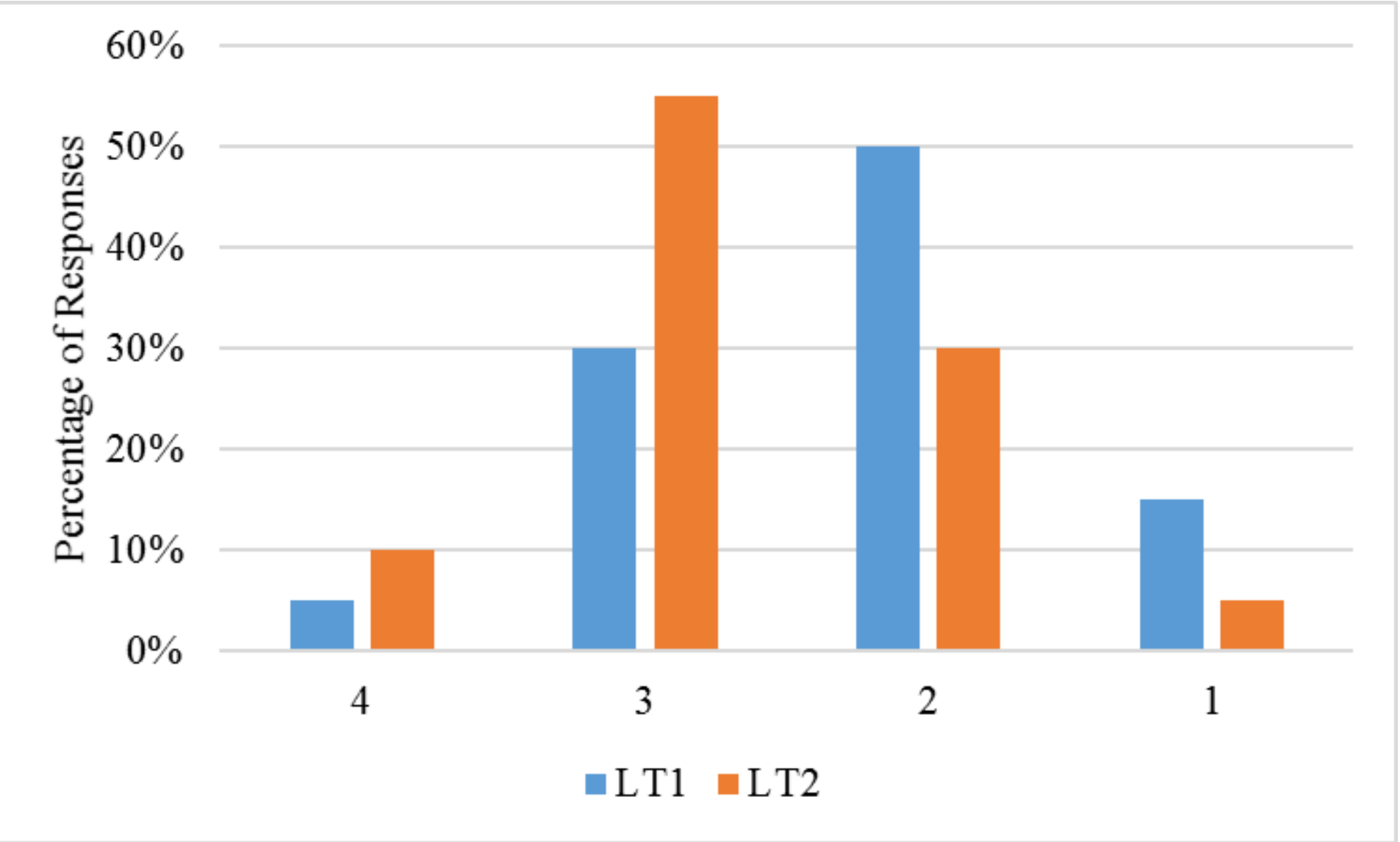
DATA AND ANALYSIS

The results of the Rock Cycle Summative Assessment showed a normalized gain of 0.62, medium gain, for the treatment group. The Title Earth Science students showed a larger gain of 0.72 compared to a gain of 0.52 for the Earth science students. Mastery of learning targets was not met, as shown to the right.

INTERPRETATIONS AND CONCLUSIONS

Through all data collection tools, students expressed value of using standards-based grading models. Students showed growth towards the learning targets, and strengths and weaknesses were identified for the four keys to a successful standards-based classroom goal setting, communication, feedback and differentiation.

Focus Question	Data Source 1	Data Source 2
Primary Question: What are the effects of standards-based grading models in Earth science courses?	Pre and Post What's in a Grade Likert Survey	Pre and Post one-on-one student interviews
Sub-Question: How does standards-based grading models impact the learning process of special education and regular education students.	Pre and Post Rock Cycle Summative Assessment; Pre and Post Test Report Cards	Rock Cycle Unit Standards-Based Grading Rubrics



Learning target proficiency levels, (N=20)

“I feel the standards-based grading approach was better because it helped me understand the requirements for the assignments.”