STORYLINING OUR FUTURE GENERATIONS TO SUCCESS

NGSS & Phenomenon-driven Storylining in High School Biology

RESEARCH QUESTIONS

QUESTION #1

How does NGSS with emphasis on the Science & Engineering Practices and Crosscutting Concepts (skills) improve content knowledge retainment in science?

QUESTION #2

How does implementation of phenomenon-driven storylining affect student engagement and attitudes in the science classroom?

RESEARCH DESIGN

TREATMENT GROUP

Two sections of regular level biology students experienced an NGSS, storylining curriculum all year. Most data collected is centered around a single module focused on macromolecules. Attitude surveys and observations were conducted throughout the entire year. (*N*=47)

NON-TREATMENT GROUP

One section of regular level biology students experienced direct instruction all year. Most data collected is centered around a single unit focused on macromolecules (*N*=26).

CONCLUSION

An NGSS storyline, phenomenon-based approach in teaching biology best allows for:

1. students to master the content as well as retain content.
2. student growth not only in content, but also in skills that will be applicable later in life.
3. high levels of student engagement and interest level.

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FREMD VIKINGS

TRIANGULATION MATRIX & DATA

Data Collection Instruments	Focus Question	
	Question 1	*Question 2*
Macromolecule Content Assessment	X	
Final Exam CER Assessment	X	
Final Exam Multiple Choice Content Assessment	X	
Student Engagement & Attitude Survey		X
Teacher Observations	X	X