

The Effects of Standards-Based Grading and Differentiated Reassessment on the Metacognition, Motivation, and End of Course Assessments of 9th Grade American History Students



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Abstract

The purpose of this instructional inquiry project was to see if my use of Standards-Based Grading (SBG) and differentiated reassessment has a metacognitive and motivational effect on how my students perceive their learning and whether or not this has an impact on their mastery of the material when compared to students assessed in more traditional classrooms that do not use SBG and that do not offer reassessment.

Ex. SMQII Question

Getting a good grade is important to me.

Never → Sometimes → Always

Glynn, Brickman, Armstrong, & Taaobshirazi (2011)

Ex. PRO-SDLS Question

I am confident in my ability to consistently motivate myself.

Strongly Disagree → Strongly Agree

Stockdale & Brockett (2011)

Research Question #1

Does being taught in a classroom that utilizes differentiated reassessment within a standards-based curriculum have a metacognitive effect on how 9th graders perceive their learning? **NO.**

Research Question #2

Does being taught in a classroom that utilizes differentiated reassessment within a standards-based curriculum have a motivational effect on how 9th graders perceive their learning?

YES for Factor 5 among non-Honors
(Factor 5 → SBG $M = 4.384$, non-SBG $M = 4.096$,
 $U = 1,318$, $p = .026$)

NO for all other factors and groups.

Research Question #3

Does Mastery Teaching have an impact on the mastery of the material by 9th graders when compared to students assessed in more traditional classrooms that do not offer reassessment? **YES.**

Hake Gains* for Non-SBG vs. SBG Classrooms

Group	N	SOCA	EOCA	Hake Gains	t	p
Non – SBG All Students	8	25.80	53.90	63.57%	1.679	.121
SBG All Students	5	28.68	58.22	71.49%		
Non – SBG Non-Honors	5	24.83	51.08	58.11%	3.125	.020
SBG Non-Honors	3	28.47	57.67	70.31%		
Non – SBG Honors	3	27.41	58.60	73.20%	-.002	.999
SBG Honors	2	29.00	59.05	74.40%		

* A "Hake Gain" is the increase in each student's pre-test score divided by the average increase that would have resulted if each student had a perfect score on the post-test. It is a meaningful measure of how well an intervention works when comparing populations that have different pre-test scores (Hake, 1988). For example, to calculate the Hake Gain for the non-SBG students → $(EOCA - SOCA) / (70 - SOCA) \rightarrow (53.90 - 25.80) / (70 - 25.80) \rightarrow 28.1 / 44.2 = 0.6357 \rightarrow$ There was a Hake Gain of 63.57% for the non-SBG students.

Data Collection

Two surveys were administered during Final Exam Week (Dec 16-18, 2015): **Glynn's SMQII** and **Stockdale's PRO-SDLS**. Scores from the American History 1 Start of Course Assessment (**SOCA**) and End of Course Assessment (**EOCA**) were also used. The SOCA was given Aug. 18-20, 2015; the EOCA was given Dec. 16-18, 2015.

Setting & Sample

- Suburban high school in Central Ohio with four grades and 1,500 students.
- 327 total students enrolled in 9th Grade American History 1: 124 students in SBG and 203 students in non-SBG (127 Mr. E; 76 Mr. O).
- 232 students participated in the two surveys: 116 surveys from SBG and 116 surveys from non-SBG (80 Mr. E; 36 Mr. O).

Factor 5

Of all the survey factors that came back statistically significant, it was Factor 5 (*Grade motivation*) that remains the most curious.

The 64 non-honors in my SBG classroom that completed the SMQII scored significantly higher in grade motivation than the other 54 non-honors/non-SBG. Why?

1. Hope...?
2. Ownership...?
3. Me against the world...?
4. I learn better this way...?
5. Fear of God...?

Conclusions

Being taught in a social studies classroom that utilizes differentiated reassessment within a standards-based curriculum does NOT have a metacognitive effect but DOES have a motivational effect (in particular GRADE motivation) on non-Honors students. SBG students also produce higher Hake Gains (especially non-Honors) on the EOCA than non-SBG.

Selected References

- Glynn, S., Brickman, P., Armstrong, N., & Taaobshirazi, G. (2011). Science motivation questionnaire II. *Journal of Research in Science Teaching*, 48(10), 1159-1176.
- Stockdale, S., & Brockett, R. (1991). Development of the PRO-SDLS. *Adult Education Quarterly*, 61(2), 161-180.