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What Do You Mean I Got a D+? Effects of Feedback on Metacognition, Motivation and Academic Performance in High School Students

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Introduction

Background: This project is a collaboration with Ms. Debra Avery, who teaches at HMTCA. She is interested in developing ways to further motivate student learning.

Prior Research: Past research has shown that among students who received only grades, comments and grades, or only comments, students who received only comments had the highest academic achievement (Butler, 1988). Other studies involving feedback with only comments were similarly successful across various ages, ability levels, and school subjects (Black & Wiliam, 1998; Hattie & Timperley, 2007).

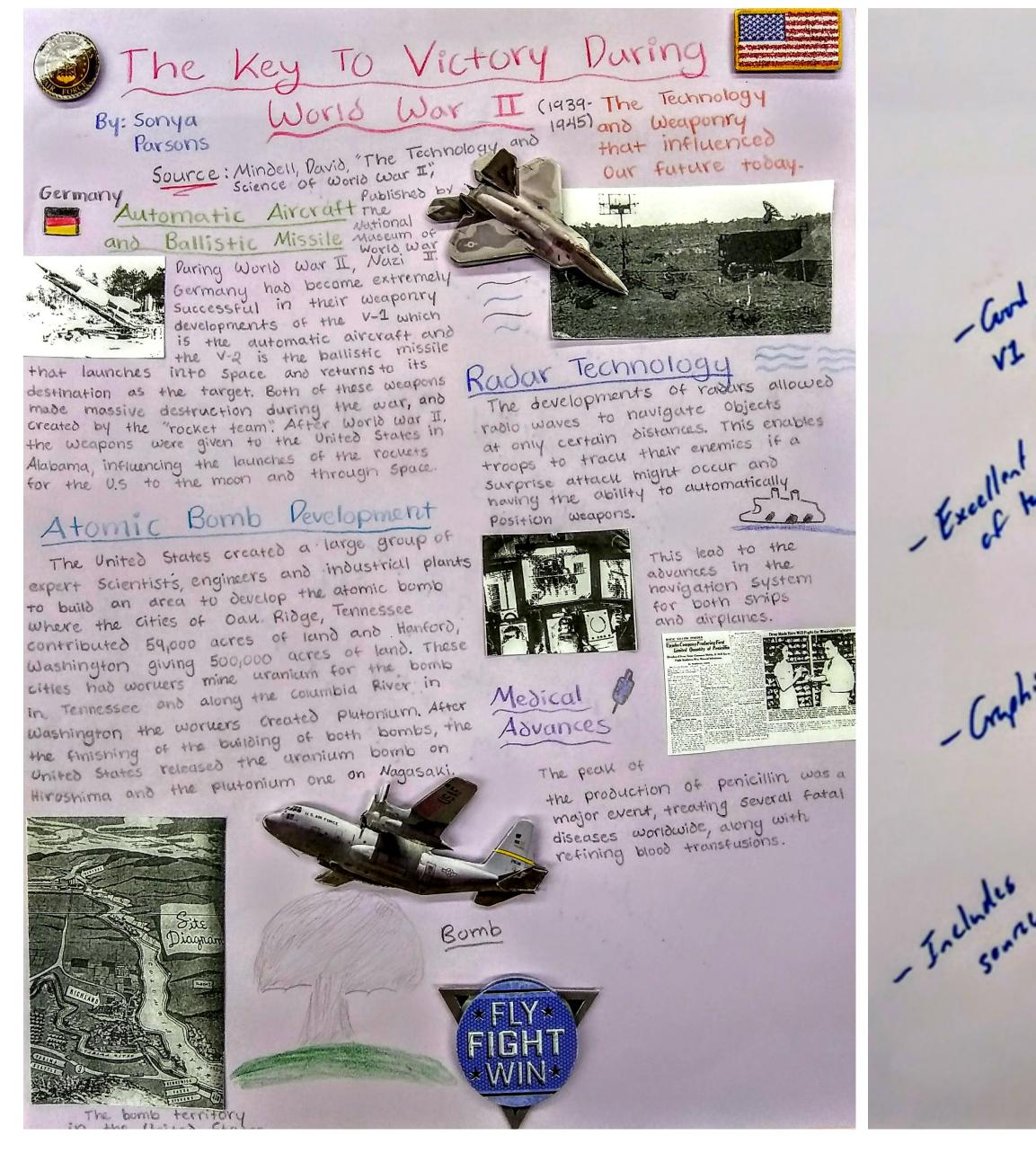
What is Metacognition? Awareness and control over one's own thoughts and learning strategies, with increases in academic performance and motivation.

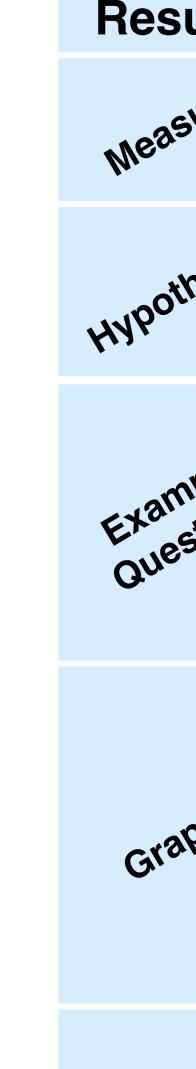
Project Design: Project Design: Two groups of 9-12th grade students taking a world history unit on WW II (four week session). The Enhanced Feedback group received extensive comments on unit assignments but no grades. The Standard Feedback group received grades and minimal comments on unit assignments. All feedback was provided by Ms. Avery.

Research Questions:

- . Do enhanced feedback and withholding grades (Enhanced Feedback) improve student metacognition, motivation, and academic achievement more than standard feedback and grades (Standard Feedback)?
- 2. Does Enhanced Feedback increase intrinsic motivation more than Standard Feedback?

Enhanced Feedback





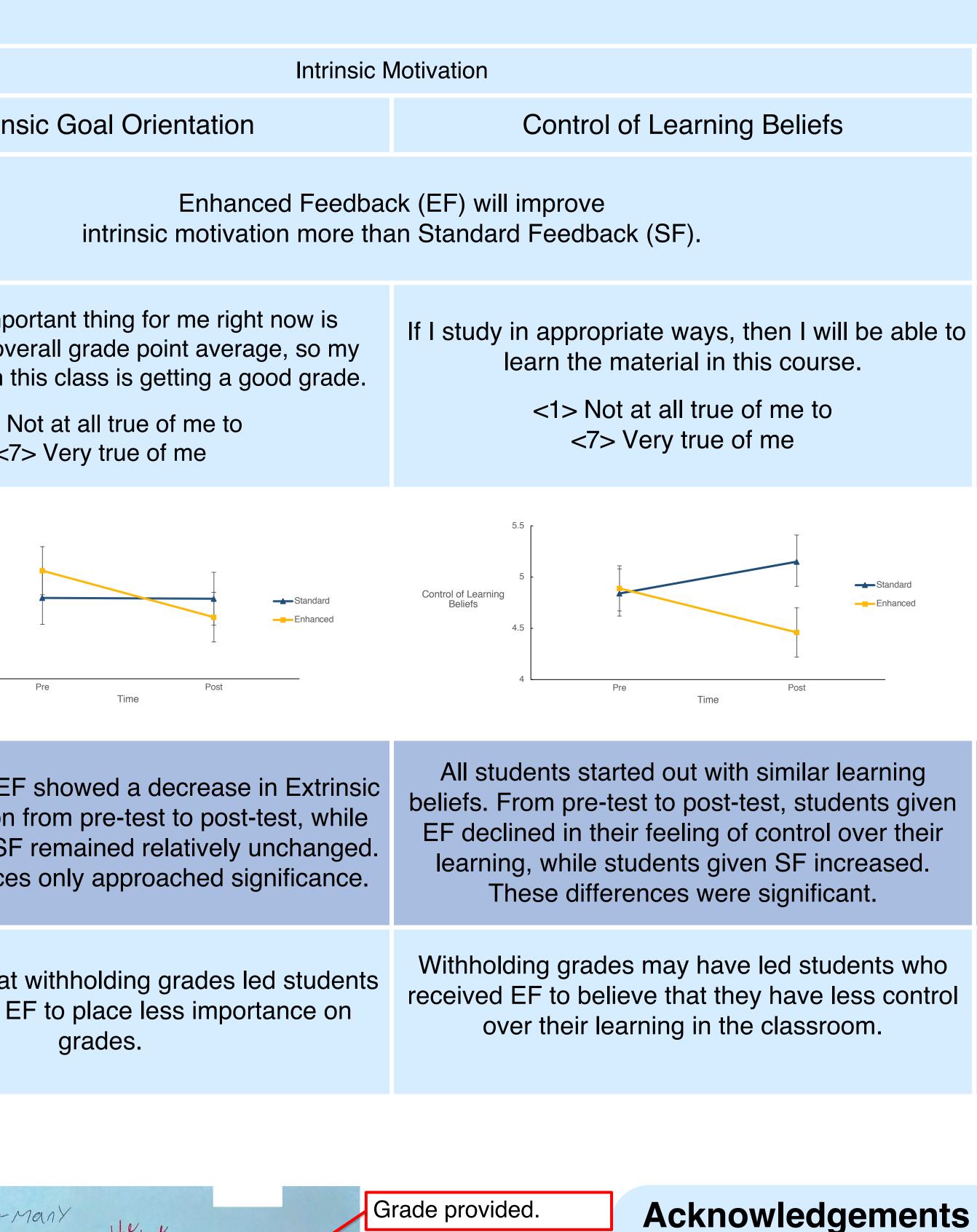


What Do You Mean I Got a D+? Effects of Feedback on Metacognition, Motivation, and Academic Performance in High School Students

Daisuke Katsumata IDP

Faculty Advisors: Professors Dina Anselmi & David Reuman **Community Partner:** Ms. Debra Avery, Hartford Magnet Trinity College Academy

ults a	nd Discussio	n		
sures	Academic Achievement			Intri
50	WW II Unit Test			Extrinsic Goal Orientation
ineses	academic achi	back (EF) will improver evement more than Feedback (SF).		Enhanced Fee intrinsic motivation mor
nplestions	A. North only;B. South only;C. West only;	y attacked lands to th Denmark and Finlanc Austria and Czechos France and Belgium. Poland and Soviet Uni	d. slovakia.	The most important thing for me right now is improving my overall grade point average, so n main concern in this class is getting a good grad <1> Not at all true of me to <7> Very true of me
Jphs	16 14 12 WW II Unit Test Score 10 8 6	re Post Time	Enhanced Standard	Extrinsic Goal Orientation 4.5 4.5 Pre Post Time
iults	Students given EF showed a greater increase improvement on the WW II Unit Test from pre- to post-test compared to students given SF. result was significant. No effect of feedback metacognition was observed.			Students given EF showed a decrease in Extri Goal Orientation from pre-test to post-test, wh students given SF remained relatively unchange These differences only approached significant
etations	•	ed over the course of F may have allowed material more effectiv	students to	It is plausible that withholding grades led stude who received EF to place less importance o grades.
				d Feedback
Feedback that directly address how the studen fared relative to main goals of the assignment (not shown). These comment point out the positives of the student's work. This particular student did very well on this assignment, but there are still specific		directly addresses how the student fared relative to the main goals of the assignment (not shown). These comments	ROCKETTY IN GERMANY IN GOMENT THEY had a Focket team that the heiked them Make these the buzzebands that was a Like the V-I or the buzzebands that was a choise Missile and they also made a V-2 bands where the void they also made a V-2 bands where the bomb where it would be shot UP in space then coming back to earth. The both bombs were used the London during 1944 Killing thousands	
		student did very well on this assignment, but there are still specific suggestions for	 Schoola feedba Future Enhand Studen incorpo 	nmendations Is should be open to changing the way students ack (Enhanced Feedback). e studies should include more classes for a larger aced Feedback. nt self-report measures of intrinsic motivation ar porates an intervention targeted at improving me ognition and motivation in addition to even grea



I would like to extend my deepest gratitude to Professors Dina Anselmi and David Reuman for their dedication to this study, and to my community partner Ms. Avery for providing her class time and wisdom. This study would not have been the same without her flexibility and ingenuity. I would also like to thank the participants in the Community Research Fellows Program, the Metacognition Research Lab, and Professors Carol Clark and Diane Zannoni for helping me communicate my research.

References

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. Assessment in *Education: Principles, Policy & Practice, 5(1), 7-74.*

Butler, R. (1988). Enhancing and undermining intrinsic motivation: The effects of task-involving and ego-involving evaluation on interest and performance. British Journal of Educational Psychology, 58(1), 1-14.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.

to changing the way students are evaluated by deemphasizing grades and providing them with more targeted elaborate written dback).

clude more classes for a larger sample size and observing them for a longer duration may allow for the detection of more effects of

ures of intrinsic motivation and perceptions of feedback may be related to levels of overall metacognition. A future study that tion targeted at improving metacognition alongside an intervention providing Enhanced Feedback may find improvements in student vation in addition to even greater improvements in academic achievement.

Feedback is superficial and does not addresses how the student can improve And Machines of destruction on meeting the main goals of the assignment in the future (not shown).

> Note these comments do not point out any positives of the student's work (even relative to their previous attempts).



	Feedback			
	Feedback Perception			
	Positive perceptions about feedback will be connected with any improvements in student metacognition, motivation, and academic achievement.			
e able to	When you receive feedback on your assignments from Ms. Avery, are you frequently clear on if your work matches what Ms. Avery expects?			
	<1> Never to <5> Always			
Standard Enhanced	Feedback Score 4 3.5 4 3.5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			
rning s given er their ased.	All students started out with similar perceptions of feedback. From pre-test to post-test, students given EF declined in their positive perception of feedback, while students given SF increased their positive perception. These differences only approached significance.			
ts who control	Improvements in performance or intrinsic motivation may precede changes in perception of something as complex as a new type of written feedback.			