Differences in Value Perceptions and Grades: Gender and Racial Gaps in a 2-Year College

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Introduction

Utility Value

• Studies show that interventions that increase student utility value (“UV,” perceived usefulness and relevance) lead to higher course outcomes
• Past UV interventions were conducted in 8th grade science classrooms, found students initially reporting low expectations for themselves in science reported a higher interest in science, and had better outcomes (final grades)

Method

Students were randomly assigned to two conditions, and asked to respond to open-ended questions depending on which condition they were in:

CONTROL
Students explained one of the topics they learned in math that semester in a letter to another student.

EXPERIMENTAL
• Explained how they perceived utility value in math.
• Students’ responses were coded on a scale of 0 to 4 (inter-rater reliability was calculated using percent agreement, perfect agreement = 78%, adjacent agreement = 88%)
• Responses were evaluated as follows:

1: Non specific, impersonal utility value
“Math is very important. If you stay focused, the math becomes easier. Practice makes perfect. Math is not something you will grasp overnight.”

2: Non-specific, personal utility value
“Math can be used in all types of field, in my case when I wake up to when I go to sleep I use math in my daily activities.”

3: Specific, personal utility value
“Calculating angles, cutting checks, weighing bars, weighing shipments, running for miles, scoring goals in hockey, stats in hockey, working out, how much weight I use”

4: Specific, personal, and demonstrative or particularly insightful
Percentage is to me something I will be using on a daily basis. I like to look at stocks and whatare profitable in the long run and what stocks I will day trade. I am sure I will be using math for the rest of life going into business with my brother so we can gain capital. If your going to take math you should focus on it because you will use more of it than you think. Enjoy it.”

Results

• H1a: Black women will score higher on utility value.
• H1b: Black women will have higher final grades.
• H2: Utility value will be positively correlated with final grades.

A 2x2x2 (gender, race, treatment) ANOVA was used to test for differences in UV, F(7, 278) = 22.53, p < .001.

- Another 2x2x2 (gender, race, treatment) ANOVA was used to test for differences in grades, F(7, 278) = 3.56, p < .001

Discussion

Although hypothesized that:
• Black women will score significantly higher on UV and therefore higher on final grade
• Utility value will correlate positively with higher grade
We found instead that:
• White women had the highest grades overall
• Women in both conditions had higher grades than men

DOESN’T MATCH UP
Past research says otherwise:
• Everything appeared to be trending in the same way: results are consistent with each other, just not with other studies

CONCLUSION
Results did not match, probably due to factors that could not be addressed at the time of this study, such as:
• Sample size limitations
• Disproportionate sample limitations
• Weak effects

Future research should look to examine the same variables with a more powerful, properly appropriated sample size. Results are expected to align more uniformly with past research.

References


The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant #R240A011502 to the University of Virginia. The opinions expressed are those of the authors and do not represent views of the U.S. Department of Education.