

Article Summary – Utility Value

Harackiewicz, J.M., Canning, E.A., Tibbetts, Y., Priniski, S.J., Hyde, J.S. 2016. Closing achievement gaps with a utility-value intervention disentangling race and social class. *J Pers Soc Psychol*, 111(5), pp 745-765.

Research Question(s)

National college success data show that first generation and underserved (e.g. African American, Latino/a, and Native American) students experience less success in most metrics, such as GPA, retention, and degree attainment compared to continuing generation and majority¹ students (White, Asian, and Asian American). Achievement gaps can be attributed to economic and social factors, but also reflect psychological factors that impact feelings of belonging, stigmatization, and engagement.

Brief social-psychological interventions that are tailored to address specific issues students face at critical points in their academic careers can be powerful. This study examines the effects of a values affirmation intervention and a utility value intervention in a general college biology course. The values affirmation intervention targets identity threat; it has been shown that students' performance is undermined when they are aware of stereotypes of their group or worry about whether they "fit in". The utility value intervention is based on the Expectancy-Value Theory (Eccles & Wigfield 2002) which states that students will be motivated toward a goal/task if they value the task and expect that they can succeed (based on self-beliefs).

The authors designed a double blind, randomized experiment in an introductory biology course at a large Midwestern university across four semesters to address two primary questions about these interventions: 1) Can the utility value intervention reduce achievement gaps? 2) Can the values affirmation intervention be paired with a utility value intervention and how might they work together?

Methodology

- Over four semesters, 2378 students were enrolled in this biology course, of whom 8% were underserved and 21% were first-generation students (i.e., no parent/guardian obtained a 4-year college degree).
 - All consenting underserved and first-generation students enrolled in the course were included in this study along with a randomly selected subset of continuing-generation majority students
 - Of the 1040 (417 male, 623 female) students who completed the course and gave consent for access to their academic records:
 - 423 were continuing-generation majority, 427 were first-generation majority, 126 were continuing-generation underserved (51 African American, 61 Hispanic, 14 Native American), and 64 were first-generation underserved (26 African American, 35 Hispanic, 3 Native American).
- Students were blocked on underserved and first-generation status, gender, and lecture section and then randomly assigned to one of 4 conditions in a fully crossed 2 x 2 (utility value intervention x values affirmation intervention) experimental design.
- Instructors and teaching assistants were blind to the experimental condition.
- For the Utility Value intervention, three writing assignments were presented as course assignments from the instructors and three weeks prior to each unit exam, students had five days to complete each essay and turned them in via an online course management site.

¹ The descriptor "majority" refers to groups that maintain a majority position in higher education as a whole.

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- Experimental assignment prompt: *Select a concept or issue that was covered in lecture and formulate a question. Select the relevant information from class notes and the textbook, and write a 1–2 page essay addressing this question and discuss the relevance of the concept or issue to your own life. Be sure to include some concrete information that was covered in this unit, **explaining why this specific information is relevant to your life or useful for you.** Be sure to explain how the information applies to you personally and give examples.*
- Control assignment prompt: *Select a concept or issue that was covered in lecture and formulate a question. Select the relevant information from class notes and the textbook, and write a 1–2 page response to your question. You should attempt to organize the material in a meaningful way, rather than simply listing the main facts or research findings. Remember to summarize the material in your own words.*
- The Value Affirmation intervention was administered in laboratory sessions early in the semester.
 - Experimental students were instructed to write about why 2-3 values, selected from a list, were important to them.
 - Control students were instructed to choose the 2-3 values that were least important to them, and to write about why other people might hold those values.
- Baseline data were collected on background variables (attitudes about biology, motives for attending college, prior GPA, and high school poverty rate) to establish any covariance or effect on measured GPA (for brevity, these results were omitted from this summary, but background variables are discussed when they had significant mediating effects on the intervention strategies)
- Writing assignments were analyzed using Linguistic Inquiry and Word Count (LIWC) dictionaries to capture the content for personal pronouns, social processes, and cognitive mechanisms
- Final course grades were provided by the instructors

Results

- There was no effect of the values affirmation intervention on course grade for any group so the authors collapsed this treatment to produce only utility value vs. control treatment comparisons.
- The utility value intervention promoted performance for all students and text analysis reveals that the assignment may have promoted deeper cognitive processing and facilitated learning.
- The largest utility value intervention effect was found among first-generation underserved students and this remained significant after controlling for the effects of prior GPA and for the positive effects of the intervention for students with lower prior grades.
- Additional exploratory analyses revealed that the utility value intervention was more effective in improving performance for students who endorsed more helping motives for attending college and that these students were more often first-generation underserved students.
- Text analyses revealed that the essays of first-generation underserved students more often contained content related to social processes, and family words in particular.
- The utility value intervention did not help first-generation majority students. Baseline data suggests that first-generation students in general tend to feel more anxiety about belonging and the intervention was designed to address curricular content and motivation instead.

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Implications

The utility value intervention described here successfully reduced the achievement gap for underserved students by 40% and for first-generation underserved students by 61%. First-generation underserved students tended to be highly motivated to succeed in this biology course and were particularly motivated by communal goals, such as helping others, contributing to society, or giving back to their families and communities. The utility value intervention gave students an opportunity to explore connections between the course content and their goals. Discovering the utility value of content may have increased their engagement with the class. In addition, rather than addressing a deficit, the utility value intervention may work by relating the curriculum to the students' strengths.

Additional Citation

Eccles, JS and Wigfield, A. 2002. Motivational beliefs, values, and goals. *Annual Review of Psychology* 53: 109-132.