Title

Students' Implicit Biases Affect Their Beliefs about Professors of Different Ethnicities and Genders

Introduction

At our core, humans are irrational. This irrational core is probably best seen with our cognitive biases. Cognitive biases are systematic errors in thinking we make when we are processing and interpreting information. We have more than 150 cognitive biases. One of these cognitive biases is implicit bias. Implicit bias is a negative attitude—of which we are not consciously aware, against a social group (e.g., a particular ethnicity or gender). Our beliefs and behaviors are influenced by the implicit biases we hold. This study measured the effect implicit biases have on students' beliefs about learning from professors of different ethnicities and genders. Further, this study examined whether students' ethnicities and genders affect the potential implicit biases they hold of professors.

Methods

Three hundred seventy-two students enrolled in a Southwestern United States college served as participants. Participants were 18 years of age or older (M = 24.1, SD = 7.4); identified themselves as Hispanic (65%), White (20%), Black or African American (8%), Asian (4%), American Indian or Alaska Native (1%), or "Other" (2%); identified themselves as female (73%), male (25%), or "Other" (2%); and had the following majors: Psychology (39%), Pre-Nursing (25%), Biology (6%), Business Administration (5%), Liberal Arts (4%), Computer Science (3%), Kinesiology (3%), Teaching/Education (3%), Biology, Pre-Professional (2%), Criminal Justice (1%), or not answered (9%).

Using an anonymous Qualtrics link, participants completed a digital survey.

The digital survey first asked participants about some of their demographics, including age, ethnicity, gender, and major.

Following the demographic questions, participants were randomly assigned to—and then participated in, one of seven conditions. Six of these conditions had a photograph of a "College Professor" presented to the participants. The photograph was of a White Male, White Female, Black Male, Black Female, Hispanic Male, or Hispanic Female college professor. The photographs of college professors were generated by artificial intelligence (Canva's Magic Design AI generator tool); besides ethnicity and gender differences, the college professors had the same physical characteristics, the same age, and level of attractiveness. All the college professors were smiling, wearing glasses, and dressed in professional attire.

The seventh condition had no photograph of a college professor presented to participants. Instead, this condition simply asked participants to "think about a college professor."

This seventh condition served as the control condition for any potential biases being brought out by professors' ethnicities or genders.

As participants were viewing the photograph of the college professor or thinking about a college professor, they were asked to rate the college professor they were viewing or thinking about in three ways:

"Using a scale from 0 to 100—with 0 being equal to horrible and 100 being equal to fantastic, **rate how well you think this college professor can teach.**"

"Using a scale from 0 to 100—with 0 being equal to nothing and 100 being equal to everything, **rate how much you think you could learn from this college professor.**"

"Using a scale from 0 to 100—with 0 being equal to nothing and 100 being equal to everything, **rate how much you think someone else could learn from this college professor.**"

Results

Overall, participants (n = 372) rated the control condition college professor—the condition without a photograph of a professor, 79.1 (SD = 15.5), 78.5 (SD = 20.4), 79.1 (SD = 18.4) for the three rating questions; respectively, "…rate how well you think this college professor can teach," "…rate how much you think you could learn from this college professor," "…rate how much you think someone else could learn from this college professor." Relative to this control condition, participants gave significantly greater ratings to the Black Female, *83.8 (SD = 12.4), *83.9 (SD = 14.5), 80.9 (SD = 15.8), Black Male, *82.5 (SD = 12.0), *84.7 (SD = 13.7), 83.4 (SD = 15.3), and Hispanic Female, *82.1 (SD = 12.3), 78.7 (SD = 16.8), 79.5 (SD = 15.4) professors, *ps < .05. Participants gave significantly poorer ratings to the White Male, 75.7 (SD = 14.4), *71.2 (SD = 18.8), *71.1 (SD = 19.4) and Hispanic Male, *70.4 (SD = 19.4), *69.5 (SD = 22.7), *66.0 (SD = 19.1) professors, *ps < .05. And participants' ratings of the control condition professor did not significantly differ from their ratings of the White Female professor, 77.2 (SD = 15.5), 74.8 (SD = 17.3), 74.8 (SD = 16.4), ps > .05.

Black participants (n = 28) rated the control condition college professor, 86.5 (SD = 17.4), 79.3 (SD = 20.5), 78.3 (SD = 23.0). Relative to this control condition, Black participants gave significantly greater ratings to the Black Female, *94.7 (SD = 4.6), *94.7 (SD = 4.6), *88.3 (SD = 7.4) and Black Male, 88.0 (SD = 9.3), *94.5 (SD = 4.2), *90.8 (SD = 8.7) professors, *ps < .05. Black participants gave significantly poorer ratings to the White Male, 88.0 (SD = 17.0), *68.0 (SD = 25.5), *68.0 (SD = 25.5), White Female professor, *76.5 (SD = 19.5), 77.3 (SD = 20.1), 72.0 (SD = 20.2), Hispanic Female, *73.8 (SD = 17.8), 65.2 (SD = 18.8), *66.8 (SD = 20.4), and Hispanic Male, *71.3 (SD = 11.5), *59.3 (SD = 19.2), *71.0 (SD = 15.5) professors, *ps < .05.

Hispanic participants (n = 242) rated the control condition college professor, 78.2 (SD = 16.0), 77.4 (SD = 21.6), 78.0 (SD = 19.1). Relative to this control condition, Hispanic participants gave significantly greater ratings to the Black Female, *85.0 (SD = 9.8), *85.8 (SD = 10.3), *82.6 (SD = 13.7), Hispanic Female, *84.0 (SD = 11.3), *83.8 (SD = 14.2), 81.1 (SD = 15.0), and Black Male, 82.2 (SD = 10.7), *84.3 (SD = 14.2), *82.5 (SD = 17.1) professors, *ps < .05. Hispanic participants gave significantly poorer ratings to the White Male, 75.6 (SD = 15.8), *71.7 (SD = 18.7), *72.3 (SD = 20.7), White Female professor, *73.2 (SD = 14.7), *69.6 (SD = 16.7), *72.3 (SD = 16.1), and Hispanic Male, *71.4 (SD = 20.1), *72.8 (SD = 22.6), *66.8 (SD = 18.8) professors, *ps < .05.

White participants (n = 76) rated the control condition college professor, 81.1 (SD = 14.0), 80.4 (SD = 19.3), 81.0 (SD = 16.4). Relative to this control condition, White participants gave significantly greater ratings to the White Female professor, *88.4 (SD = 11.3), *88.9 (SD = 11.9), 85.0 (SD = 13.6), *ps < .05. White participants gave significantly poorer ratings to the Hispanic Female, 81.6 (SD = 12.9), *73.6 (SD = 18.4), 82.9 (SD = 15.0), White Male, 75.6 (SD = 11.5), *71.5 (SD = 22.2), *71.3 (SD = 20.5), and Hispanic

Male, *68.2 (SD = 23.9), *62.3 (SD = 26.4), *59.9 (SD = 23.5) professors, *ps < .05. And White participants' ratings of the control condition professor did not significantly differ from their ratings of the Black Male, 82.7 (SD = 18.3), 84.2 (SD = 15.6), 84.8 (SD = 11.9) or Black Female, 77.9 (SD = 17.1), 79.7 (SD = 17.7), 77.7 (SD = 16.1) professors, ps > .05.

Female participants (n = 273) rated the control condition college professor, 77.5 (SD = 16.6), 78.6 (SD = 19.7), 79.6 (SD = 18.5). Relative to this control condition, Female participants gave significantly greater ratings to the Black Female, *84.6 (SD = 13.1), *85.9 (SD = 13.3), 81.8 (SD = 15.2) and Hispanic Female, *81.9 (SD = 12.4), 79.3 (SD = 16.7), 80.0 (SD = 14.7) professors, *ps < .05. Female participants gave significantly poorer ratings to the White Male, 76.5 (SD = 13.3), *71.1 (SD = 18.8), *70.2 (SD = 19.9) and Hispanic Male, *71.4 (SD = 20.1), *70.0 (SD = 23.7), *66.7 (SD = 20.2) professors, *ps < .05. And Female participants' ratings of the control condition professor did not significantly differ from their ratings of the Black Male, 80.5 (SD = 12.1), 82.1 (SD = 14.5), 80.5 (SD = 17.4) or White Female, 77.0 (SD = 16.1), 75.0 (SD = 17.2), 74.5 (SD = 17.1) professors, ps > .05.

Male participants (n = 93) rated the control condition college professor, 84.5 (SD = 11.8), 80.4 (SD = 20.5), 78.6 (SD = 17.1). Relative to this control condition, Male participants gave significantly greater ratings to the Black Male professor, 86.4 (SD = 11.5), *89.4 (SD = 11.5), *89.5 (SD = 7.8), *ps < .05. Male participants gave significantly poorer ratings to the White Male, *72.7 (SD = 15.9), *69.7 (SD = 18.5), *71.1 (SD = 17.9) and Hispanic Male, *67.8 (SD = 18.0), *68.4 (SD = 20.9), *63.8 (SD = 16.6) professors, *ps < .05. And Male participants' ratings of the control condition professor did not significantly differ from their ratings of the Hispanic Female, 83.1 (SD = 13.7), 78.7 (SD = 16.8), 80.1 (SD = 18.3), Black Female, 81.5 (SD = 10.2), 77.9 (SD = 16.7), 77.9 (SD = 17.7), or White Female, 77.9 (SD = 14.5), 74.2 (SD = 18.1), 75.6 (SD = 15.1) professors, ps > .05.

Discussion

The present study found students have cognitive biases affecting their beliefs about professors. Specifically, students' beliefs about how well a professor teaches are affected by the professor's apparent ethnicity and gender.

There is no scientific evidence of a professor's teaching ability being related to their ethnicity or gender. Thus, if a student believes—implicitly or otherwise, ethnicity or gender affects teaching ability, then this student likely has a systematic error in their thinking.

Generally, previous studies have found students hold negative biases for professors in minority ethnic groups and female professors (e.g., Chavez & Mitchell, 2019). The present study did not find students' biases to be like this. The present study found implicit biases may be negative or positive. Students mostly had negative implicit biases toward White Male and Hispanic Male professors, whereas students mostly had positive implicit biases toward Black Female, Black Male, and Hispanic Female professors. In fact, Black Female and Black Male professors had no negative implicit biases held against them by any ethnic or gender group of students, and the White Male professor had negative implicit biases held against him by every ethnic and gender group of students.

To determine the etiology of students' implicit biases, future research may have students free associating about professors of different ethnicities and genders. Relatedly, future studies examining different personality types, may determine if personality plays a role in succumbing to implicit biases. Lastly,

because beliefs do not necessarily lead to behaviors, future research is needed to test whether students' implicit biases of professors affect their ability to learn from professors having different ethnicities and genders.

Regardless of whether implicit biases affect behavior, they affect perceptions of higher education and should be addressed—maybe during freshman orientation courses for students, and during annual faculty development sessions for professors.

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