**Do the Source and Motivation of DEI Statements Matter?**

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**Acknowledgments**

**Abstract**

Existing literature examines DEI interventions and their outcomes, as well as an individuals' sense of belonging at an institution. However, the link between DEI interventions and how they affect perceived respect from instructors within an institution is unclear. In a 2 (authorship) x 2 (motivation) between-subjects study, we manipulated the authorship and motivation to evaluate whether a DEI statement in a syllabus could lead to higher perceived faculty-student respect (FSR) – that is the students perceived respect from the faculty member. We found that DEI statements thought to be authored by professors or thought to be included through intrinsic motivation led to increased perceived respect. This was qualified by a significant interaction such that internally motivated statements from professors had the highest FSR. These results address an open question as to whether DEI statements impact faculty-student respect, giving a better understanding of how DEI interventions—specifically DEI statements—can produce positive perceptions of faculty that could potentially improve student achievement and well-being. Ultimately, these findings suggest that DEI statements within syllabi should be internally motivated declarations written by the professors themselves to foster a positive learning environment where students feel respected and supported by their professor.

**Key Words**

DEI statements, faculty-student respect, student belonging, authorship, intrinsic motivation

**Introduction**

As university students continue to break racial barriers and become increasingly diverse, colleges have struggled to meet each individual student's needs. To ultimately create an equitable and inclusive environment within these campuses, diversity, equity, and inclusion (DEI) initiatives are proposed methods universities use to try and bridge this gap between underrepresented minorities and other groups. More specifically, diversity, equity, and inclusion is to embrace the idea that people come from different backgrounds, and to promote fairness and a welcoming environment for everyone, especially underrepresented minorities. Several interventions have been proven effective in decreasing out-group bias and promoting trust and safety. For example, the jigsaw method of teaching, in which diverse groups of students collaborate to collect pieces of information about an overall subject, which they then teach each other, has been proven to reduce prejudice amongst grade-school students (Aronson, 1978). Additionally, research suggests that diversity interventions can improve academic outcomes. Binning and Kaufmann find that a weekly intervention in recitation that focuses on the common nature of adversity in college leads to better course performance in women in physics and ethnic minorities in biology (Binning & Kaufmann, 2020). They posit that this is because the interventions make students feel that they belong, in that their struggles are shared. Consequently, this sense of belonging acts as a buffer to the threatening environment of college, thereby mediating students' performance. The buffer theory is supported by research that found that a value affirmation intervention prevents negative academic trajectories since value affirming messages act as a buffer to threat (Sherman et al., 2013).

In addition to diversity interventions, institutional support, or in other words the students' sense of belonging at their university, also leads to positive outcomes academically. An

abundance of research has shown that enhancing students' sense of belonging in school is of utmost importance in order to boost the students' academic success and engagement. As the need to belong is a fundamental human motivation, individuals have a basic desire to form social attachments and deficits in belongingness have led to a multitude of ill effects. Knowing that a sense of belonging is closely related to indicators of both social and psychological functioning, Pittman and Richmond considered the influence of school context on students' reports of belonging specifically at the university level. The authors found that students who reported a higher sense of belonging in university and high school were significantly more likely to do better academically, as well as feel more competent, have higher self-worth, and were less likely to externalize problems (Pittman & Richmond, 2007). One specific intervention seeking to investigate the state of belonging uncertainty also demonstrated that a threat to social belonging, or belonging uncertainty, does contribute to racial disparities in achievement (Walton & Cohen, 2007). Taken together, prior research suggests that focusing on enhancing a student's sense of belonging at an institution can not only increase students' engagement and overall wellbeing, but it can also improve their overall academic achievement in a significant way.

**Faculty-Student Respect (FSR)**

Prior research also suggests that perceived respect from individuals within an institution, specifically from professors leads to positive outcomes in academic achievement. Teacher respect is not frequently studied itself; rather, it is a component of "pedagogical caring", such that positive teacher behavior or "pedagogical caring" at an individual level can improve students' overall academic achievement (Wentzel, 1997). In terms of perceived respect from faculty, research has found that when students perceive that they are respected by their teachers, there are positive consequences for the quality of teacher-student relationships (Zehm & Kotter,

1993; Thompson, 1998; Marzano, 2003). In addition, improving students' relationships with teachers also boosts students' academic and social development (Rimm-Kaufman & Sandilos, 2019). Furthermore, teacher behavior affects student motivation, which is shown to be closely tied to academic performance (Gorham & Christophel, 1992). Likewise, student's perceptions of the teachers as emotionally supportive is positively related to academic self-concept and intrinsic motivation — all of which emphasize the importance of enhancing faculty-student respect, and the profound impact a professor has on their students (Skaalvik & Skaalvik, 2013).

**DEI Statements**

A specific DEI intervention, introducing DEI statements—declarations of an organization or institution to commit to furthering the three values of diversity, equity, and inclusion—is becoming increasingly popular as it can be found on most schools' websites or, for individual classes, on each course syllabus. These statements can range from colorblind to multicultural in philosophy. The colorblind philosophy refers to the idea that people should be treated equally regardless of race or other differing factors. On the other hand, multiculturalism refers to the idea that people have different backgrounds that should be acknowledged (Purdie-Vaughns & Walton, 2011). While on the surface colorblindness seems to promote equity, this is not necessarily the case. Multiculturalist philosophy recognizes the institutional differences between the way that individuals can be treated based on race, gender, and other factors and strives to make up for it, while colorblind philosophy treats those factors as nonexistent. As a result, colorblind philosophies can be used as an excuse for those in the majority to turn a blind eye towards the struggles of underrepresented minorities–thus failing to respect students' individual and group identities. Research on multiculturalism and colorblindness messaging has suggested that minorities tend to prefer multiculturalist statements and attitudes, while White people tend to

prefer a colorblind philosophy (Neville et al., 2007). Furthermore, Black professionals who were exposed to colorblind messaging expressed more distrust of the organization, showing a decreased sense of belonging and safety within the organization — indicating that multicultural approach to diversity messaging is favored (Plaut et al., 2018).

**The Present Study**

Upon investigating the existing literature on institutional and individual DEI interventions and their outcomes, as well as the relationship between institutional belonging and respect from individuals, the notable link between the DEI and the perceived respect from professors within an institution is unclear. Thus, this study addresses the gap in the literature by investigating the connection between the DEI interventions, specifically DEI statements, and perceived respect — hoping to gain a better understanding of how the implementation of DEI interventions results in positive outcomes in student achievement. More specifically, we explore the impact of a multicultural DEI statement's authorship and motivation on student perceptions of faculty respect. We hypothesize that internally motivated (included by the professor's own volition) DEI statements will lead to higher faculty-student respect (FSR). Additionally, it is hypothesized that internally motivated statements will be moderated by professor authorship, such that the interaction between professor authorship and internal motivation will lead to the highest perceived FSR.

**Methods**

*Participants*

After receiving IRB approval, a total of 717 participants, adults currently enrolled in 2-year or 4-year colleges and universities, were recruited from Prolific (www.prolific.co). The

attrition rate of poor or incomplete data was about 23% of recruited participants; after removing participants that did not pass the manipulation and attention checks, the final sample was 553 participants (48% men, 47% women, 5% non-binary; 70% Whites, 12% Asian, 6.5% Blacks; mean age = 24.78 years, age range = 18–67).

*Procedure*

Using a Qualtrics survey, all persons, whether from the CMU research participation pools or online crowdsourcing platform (Prolific), were asked to review consent form that informed them of the exact nature of the study, including the kinds of survey items and task materials that would be presented, the expected amount of time required to complete the task, compensation for participation, as well as their rights as a research participant. If they agreed to enroll as a participant in the study, they were told to imagine the professor reading the syllabus out loud to them on the first day of class. They were then presented with a transcript of a hypothetical first day of class, where a college instructor reviews a DEI statement from their syllabus. Participants were randomly assigned to one of four conditions with different endings to the same DEI statement, as shown in the table below.

**Table 1**

*4 Conditions: Manipulation of Variables (Authorship x Motivation)*

|  | **Internal Motivation** | **External Motivation** |
|---|---|---|
| **Professor Authorship** | I included the following DEI statement, which I wrote, specifically because I find it imperative that classes be a place where everyone is included and can succeed as who they are. | I included the following DEI statement, which I wrote, specifically because the University finds it imperative that classes be a place where everyone is included and can succeed as who they are. |
| **University Authorship** | I included the following DEI statement written by the University's DEI office specifically because I find it imperative that classes be a place where everyone is included and can succeed as who they are. | I included the following DEI statement written by the University's DEI office specifically because the University finds it imperative that classes be a place where everyone is included and can succeed as who they are. |

*Note:* Yellow highlighting indicates authorship, blue highlighting indicates motivation

After reading the transcript, participants were asked to respond to a set of survey questions concerning their thoughts and feelings after reading the statement — the measures of this study described in detail below.

### *Measures*

While our main dependent variable was faculty-student respect, we collected other measures as well to get a better understanding of how other variables may be affecting perceptions of FSR. Although these variables were not part of the central analysis, they were

deemed relevant and important, allowing future research to discover if any of them could mediate the interaction or overall effect. Hence, several questionnaires were administered to measure perceived respect, comfort, belonging, and authenticity after reading the manipulated DEI statements.

**Faculty-student respect**. FSR was measured with a 10-item 7-point Likert scale. Questions measured student perceptions of teacher respect, e.g. "Based on the transcript, how likely is it that the professor would: treat students with respect/be readily available during the class."

**Motivation & comfort**. Motivation and comfort in a classroom was measured with a 2-item 7-point Likert scale and an 8-item 7-point Likert scale respectively. Questions measured student motivation in class, e.g. "Based on the transcript, how likely would the professor be to: Stimulate my interest in the subject matter/Increase my understanding of course material." Comfort was measured as perceived students' comfort around the professor, e.g. "Based on the transcript, how likely is it that the professor would: Create a welcoming and inclusive learning environment."

**Belonging**. A modified 5-item version of Walton and Cohen's (2007) academic belonging scale was used to measure perceived belonging. Questions measured feelings of belonging, e.g. "Based off the transcript, how much do you agree or disagree with each of the following statements: "I feel like I belong in the class."

**Authenticity**. Authenticity was measured by an adapted version of Wood et al.'s Authenticity Scale. Questions measured student perceptions of a professor's authenticity, e.g. "Judging from the transcript, how much do the following statements describe the professor: The professor is strongly influenced by the opinions of others."

Finally, participants were asked to provide some demographic information including race/ethnicity, gender, year in school, and international student status. After completing the survey, the online research platform subjects from Prolific received $2.50 for their participation.

**Results**

A 2x2 between-groups factorial ANOVA was designed to examine how authorship and motivation relate to students' perception of faculty respect. Table 2 below summarizes the data from the analysis.

**Table 2**

*Analysis Results of F-test (ANOVA)*

|  | df | sum of squares | Mean sq | F value | p-value |
|---|---|---|---|---|---|
| Authorship | 1 | 29.63 | 29.63 | 40.14 | < 0.001 *** |
| Motivation | 1 | 8.14 | 8.14 | 11.03 | < 0.001 *** |
| Authorship:Motivation | 1 | 4.40 | 4.40 | 5.97 | 0.01 * |
| Residuals | 549 | 405.3 | 0.74 |  |  |

*Note:* *p<.05, **p<.01, ***p<.001

We found a main effect of both authorship ($F(1, 549) = 40.14$, $p<.001$) and motivation ($F(1,549) = 11.03$, $p<.001$). Both authorship and motivation were statistically significant, and authorship was the most significant factor variable. These results indicate that authorship and motivation are both significantly related to different perceived respect across the levels of the two variables. Additionally, there was a significant interaction between authorship and motivation ($F(1,549) = 5.97$, $p = 0.01$, MSe = 0.74), suggesting that the perceived respect that results from the authorship depends on the type of motivation. Evidently, Figure 1 below shows this interaction by highlighting that not only is the perceived respect lower for external

motivation conditions, but the decrease in perceived respect from the professor authorship to the university authorship for the external motivation conditions is also steeper than that of the internal motivation conditions.

**Figure 1**

*Plot of interaction effect (Authorship x Motivation)*
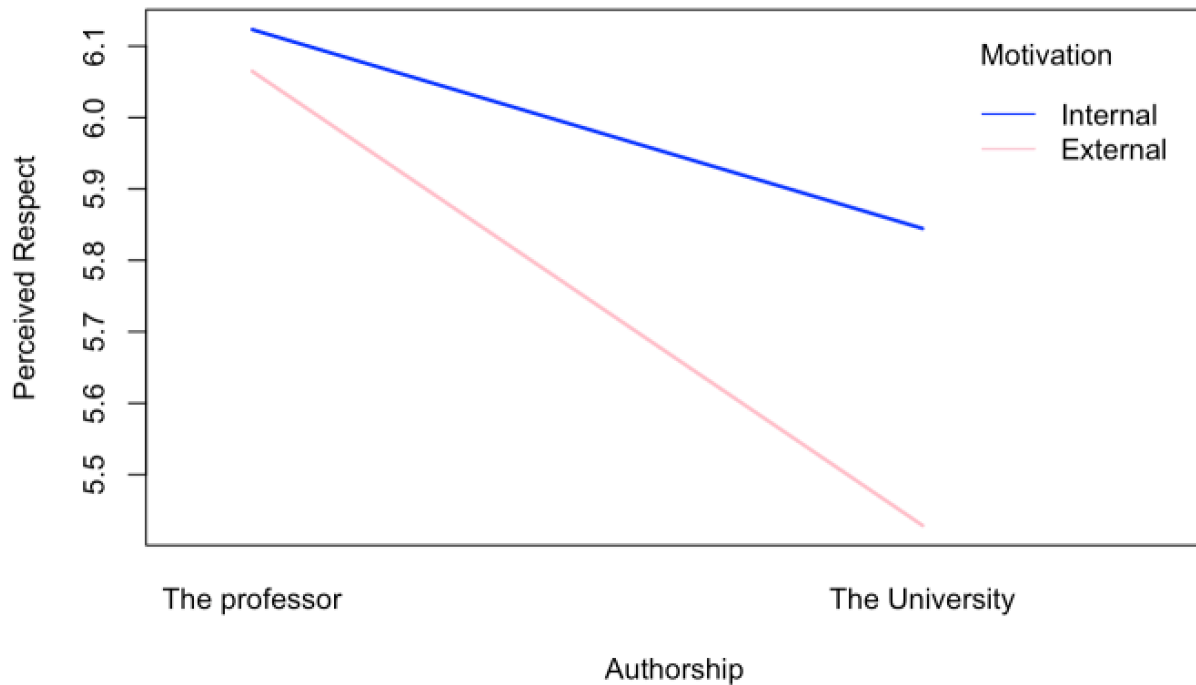


**Post Hoc Test**

After finding significant ANOVA results, we computed the Tukey HSD for performing pairwise-comparison between the means of groups, both for authorship and motivation. The Tukey HSD test for authorship shows that the mean perceived respect from university authorship is smaller than the mean perceived respect from professor authorship by -0.4632 (p<.05) so we see that the pairwise comparison is significant. The Tukey HSD test for motivation shows that the mean perceived respect from internal motivation is greater from the perceived respect from external motivation by 0.2425 (p<.05), signifying a significant pairwise comparison as well.

**Contrast Analysis**

In addition to the regression results, we conducted contrast analysis to discover more precise and specific differences among our conditions. Listed below are the contrasts that we investigated:

*Contrast 1*: Condition 1 (professor authorship/internal motivation) (+1) vs others (-⅓)

*Contrast 2*: Condition 1 (professor authorship/internal motivation) (+1) vs Condition 2 (university authorship/internal motivation) (-1); other conditions (0)

*Contrast 3*: Condition 1 (professor authorship/internal motivation) (+1) vs Condition 3 (professor authorship/external motivation) (-1); other conditions (0)

**Table 3**

*Results from Contrast Analysis*

|  | estimate | se | t | df | p |
|---|---|---|---|---|---|
| contrast1 | 1.03 | 0.25 | 4.08 | 234.01 | < 0.001*** |
| contrast2 | 0.28 | 0.10 | 2.82 | 272.16 | 0.005** |
| contrast3 | 0.06 | 0.10 | 0.56 | 265.53 | 0.574 |

*Note:* *p<.05, **p<.01, ***p<.001

We found evidence that those in Condition 1 (professor authorship/internal motivation) reported higher perceived respect on average than those in all other conditions (b = 1.03, 95% CI [0.53, 1.53], t(234.01) = 4.08, p<.001). We also found evidence that those in Condition 1 (professor authorship/internal motivation) reported higher perceived respect on average than those in Condition 2 (university authorship/internal motivation) (b = 0.28, 95% CI [0.18, 0.38], t(272.16) = 2.82, p<.05). However, our third contrast between Condition 1 (professor

authorship/internal motivation) and Condition 3 (professor authorship/external motivation) was not significant (b = 0.06, 95% CI [-0.05, 0.16], t(265.53) = 0.56, p=0.57). This contrast analysis offers additional insights into the differences within each condition and further supports the results gathered from the original ANOVA test.

In addition to the outcome variable perceived respect, we also measured motivation, comfort, belonging and perceived authenticity that the student felt after reading the DEI statement.

**Table 4**

*Analysis Results of F-test (ANOVA) for Motivation*

|  | df | sum of squares | Mean sq | F value | p-value |
|---|---|---|---|---|---|
| Authorship | 1 | 13.83 | 13.83 | 11.83 | < 0.001 *** |
| Motivation | 1 | 5.11 | 5.11 | 4.37 | 0.037 * |
| Authorship: Motivation | 1 | 4.01 | 4.01 | 3.43 | 0.065 |
| Residuals | 549 | 641.8 | 1.17 |  |  |

*Note:* *p<.05, **p<.01, ***p<.001

We found a main effect of both authorship (F(1,549) = 11.83 , p<.001) and motivation (F(1,549) = 4.37 , p<.05). Both authorship and motivation were statistically significant, and authorship was the most significant factor variable. These results indicate that the authorship and motivation of the statement are both significantly related to different degrees of student motivation across the levels of the two variables.

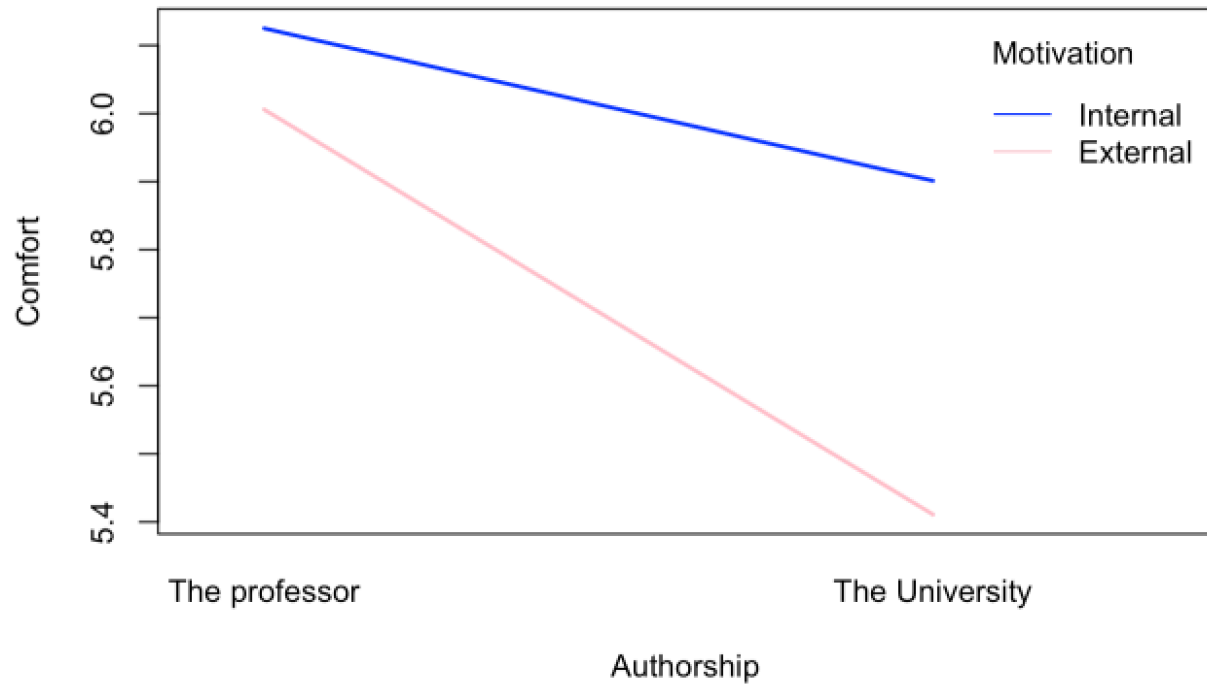**Table 5**

*Analysis Results of F-test (ANOVA) for Comfort*

| | df | sum of squares | Mean sq | F value | p-value |
|---|---|---|---|---|---|
| Authorship | 1 | 24.04 | 24.04 | 28.24 | < 0.001 *** |
| Motivation | 1 | 13.31 | 13.31 | 15.64 | < 0.001 *** |
| Authorship: Motivation | 1 | 4.75 | 4.75 | 5.58 | 0.019 * |
| Residuals | 549 | 467.3 | 0.85 | | |

*Note:* *p<.05, **p<.01, ***p<.001

For the outcome variable comfort, we found a main effect of both authorship (F(1,549) = 28.24, p<.001) and motivation (F(1,549) = 15.64, p<.001). Both authorship and motivation were statistically significant, and authorship was the most significant factor variable. These results indicate that authorship and motivation are both significantly related to different amounts of perceived comfort across the levels of the two variables. Additionally, there was a significant interaction between authorship and motivation (F(1,549) = 5.58, p = 0.019, MSe = 0.85), suggesting that the comfort that results from the authorship depends on the type of motivation. Figure 2 below shows this interaction by highlighting that not only is comfort lower for external motivation conditions, but the decrease in comfort from the professor authorship to the university authorship for the external motivation conditions is also steeper than that of the internal motivation conditions.

**Figure 2**

*Plot of interaction effect for Comfort (Authorship x Motivation)*

**Table 6**

*Analysis Results of F-test (ANOVA)* for Belonging

|  | df | sum of squares | Mean sq | F value | p-value |
|---|---|---|---|---|---|
| Authorship | 1 | 1.61 | 1.61 | 5.02 | 0.025 * |
| Motivation | 1 | 2.50 | 2.50 | 7.79 | 0.005 ** |
| Authorship: Motivation | 1 | 1.85 | 1.85 | 5.78 | 0.017 * |
| Residuals | 549 | 175.93 | 0.32 |  |  |

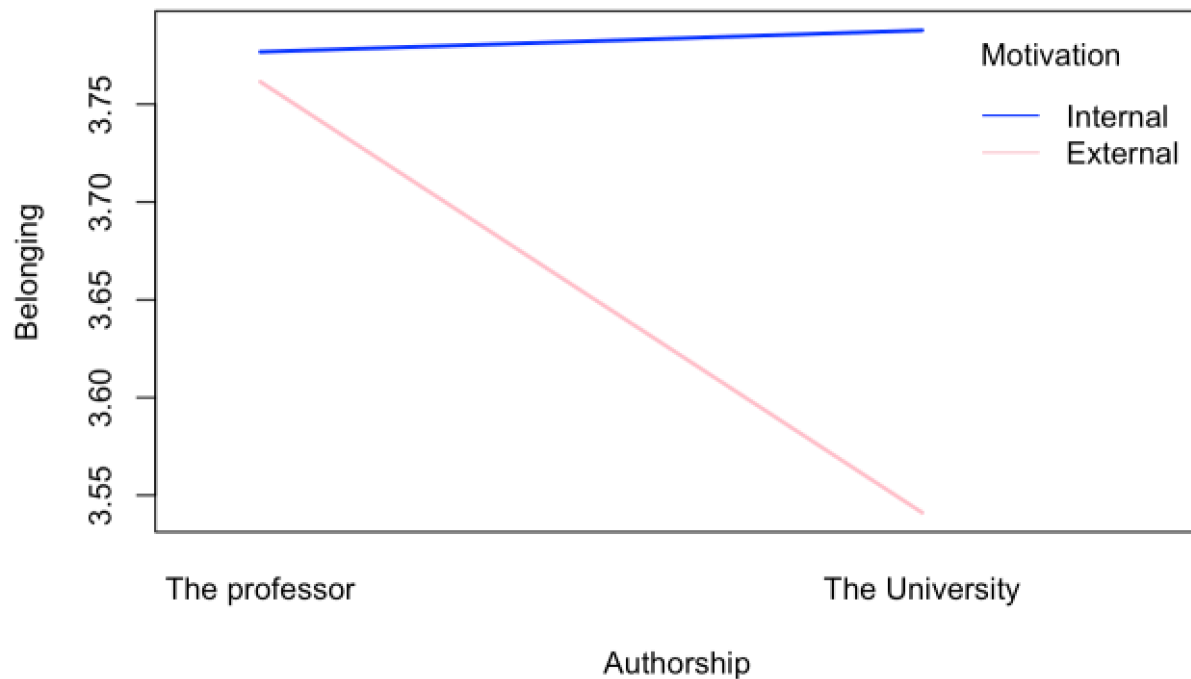*Note:* *p<.05, **p<.01, ***p<.001

For the outcome variable belonging, we found a main effect of both authorship (F(1,549) = 5.02, p<.05) and motivation (F(1,549) = 7.79, p<.001). Both authorship and motivation were statistically significant, and motivation was the most significant factor variable. These results indicate that authorship and motivation are both significantly related to different amounts of perceived belonging across the levels of the two variables. Additionally, there was a significant

interaction between authorship and motivation ($F(1,549) = 5.78$, $p = 0.017$, MSe = 0.32),

suggesting that the sense of belonging resulting from the authorship depends on the type of

motivation. Figure 3 below shows this interaction by highlighting that not only is belonging

lower for external motivation conditions and despite there being an increase in belonging from

the professor to university authorship for the internal motivation conditions, but there is also a

steep decrease of perceived belonging between the external motivation conditions.

**Figure 3**

*Plot of interaction effect for Belonging (Authorship x Motivation)*



**Table 7**

*Analysis Results of F-test (ANOVA)* for Authenticity

|  | df | sum of squares | Mean sq | F value | p-value |
|---|---|---|---|---|---|
| Authorship | 1 | 0.13 | 0.13 | 0.30 | 0.583 |

| Motivation | 1 | 0.30 | 0.30 | 0.67 | 0.412 |
|---|---|---|---|---|---|
| Authorship: Motivation | 1 | 4.07 | 4.07 | 9.13 | 0.003 ** |
| Residuals | 549 | 244.73 | 0.45 | | |

*Note: *p<.05, **p<.01, ***p<.001*

For the authenticity measure, we did not find main effects of both authorship and motivation. However, there was a significant interaction between authorship and motivation (F(1,549) = 9.13, p = 0.003, MSe = 0.45), suggesting that the perceived authenticity resulting from the authorship depends on the type of motivation. Figure 4 below shows this interaction by highlighting that there is an increase in authenticity for the internal conditions and that there is a decrease in authenticity for the external conditions.

**Figure 4**

*Plot of interaction effect for Authenticity (Authorship x Motivation)*
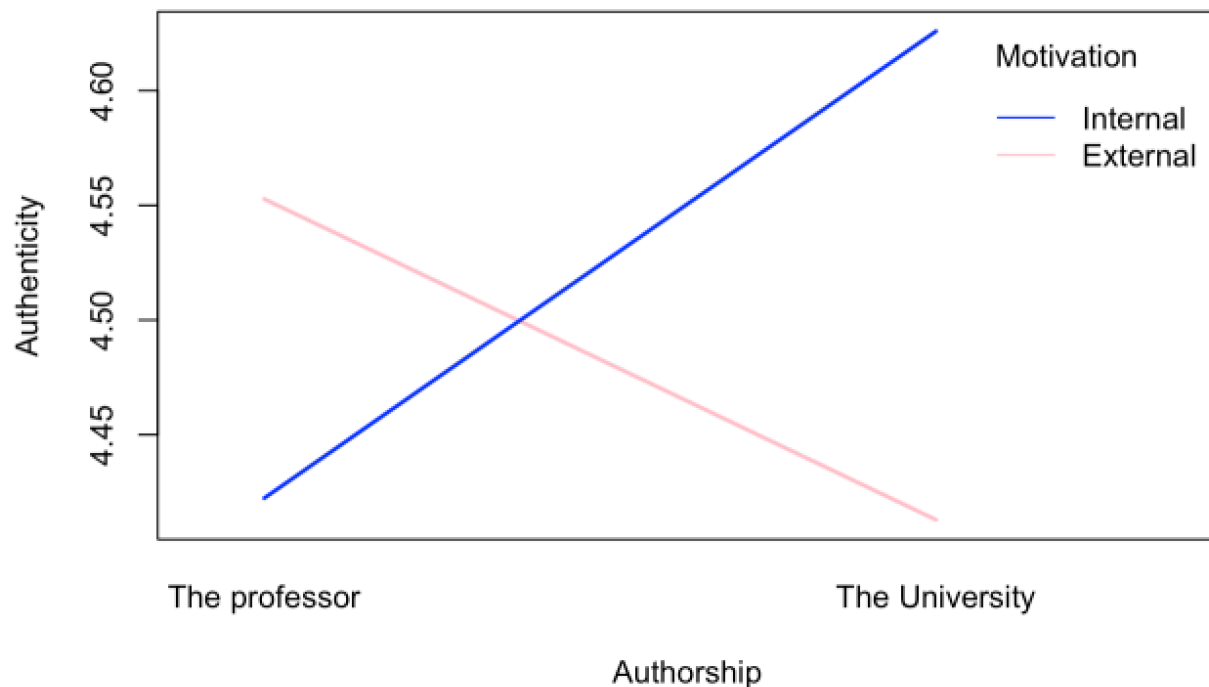
**Discussion**

The results from our study demonstrate that, as expected, both authorship and motivation have a significant effect on students' perceptions of faculty respect. In particular, conditions with professor-authorship and internally motivated statements both lead to higher FSR. More importantly, internally motivated DEI statements that were written by the professor rather than the university indeed lead to the highest levels of FSR. Simply put, when professors write their own diversity statements in their course syllabi out of intrinsic motivation, this leads to more positive learning outcomes: students feel higher levels of respect, as well as more comfort, belonging, and motivation in the classroom. Ultimately, our study adds to the evidence that improving these students' relationships with teachers has important, positive, and long-lasting implications for both students' academic and social development, enhancing a student's sense of belonging at an institution and leading to better overall academic outcomes as well.

Prior research on perceived respect from faculty has found that when students perceive that they are respected by their teachers, there are positive consequences for the quality of teacher-student relationships, such that improving these students' relationships with teachers has important, positive and long-lasting implications for both students' academic and social development — and better overall academic outcomes (Ryan & Patrick, 2001; Skaalvik, 2013). Research also suggests that when students perceive that teachers at their school support and value them, their belonging is higher, hence supporting our findings (Goodenow & Grady, 1993). Although many factors influence belonging, it has nevertheless been shown to be a critical factor in ensuring students are healthy and successful (Allen & Bowles, 2012).

There are potentially many reasons why the wording of a DEI statement may cause students, especially under-represented minority students, to feel more respect and motivation and

a stronger sense of comfort and belonging. One explanation is that internally motivated professor-written DEI statements may lead to self-fulfilling prophecies that can explain ambiguous circumstances. For example, after reading a multicultural DEI statement, students may perceive a professor as more helpful and understanding even if they do not know the professor personally. This may in turn lead them to ask for help and treat the professor as if they were kind, thus increasing the chances that the professor would actually be kind and supportive (Karabenick & Dembo, 2011). Second, it can validate their struggles. Seeing a statement on an important document such as a syllabus can make students feel heard and make them feel like the institution or professor is dedicated to diversity and wants to foster an inclusive classroom environment. Also, if DEI statements are used as interventions, when delivered in a well-timed manner (i.e., at the beginning of a semester or course), these can have significant, positive downstream effects (Walton, 2014). However, this initial positive outcome must be supplemented by concrete actions. If a professor makes a statement and then does nothing to support it empirically, it could promote distrust and thus backfire from its original intent.

With regards to our results, there are several limitations that we would like to address. Since this study focused on how these DEI statements and messages are communicated in a written format, we acknowledge that it is not perfectly representative of how professors typically deliver a DEI statement, especially because the statement was not placed directly in the context of a typical syllabi. An additional limitation is our use of Wood et al.'s scale to measure perceived authenticity, which was not originally built to measure individual authenticity. Thus, poor construct validity of our measurement of authenticity should be considered when interpreting our results.

**Conclusion**

Overall, this study sheds light on the importance of the ways in which messages are communicated from faculty to students in a learning environment. Regarding the method of communication, one possible future direction could be to observe how the presentation medium such as written or in-person presentation affects perceived respect. Beyond that, more research is needed to determine if greater perceived professor authenticity may have mediated the effect of internally motivated statements on faculty-student respect — or if there might be other explanations behind the results. Furthermore, since this study focused on evaluating perceived respect through the first impression of the faculty addressing the DEI statement, investigating how the perceived respect changes over the course of the semester or over longer periods of time could be a future direction as well. Future research into fully understanding the mechanisms of the effects of DEI statements and into ways of improving DEI interventions could have a powerful positive influence and far-reaching implications for student success and well-being.

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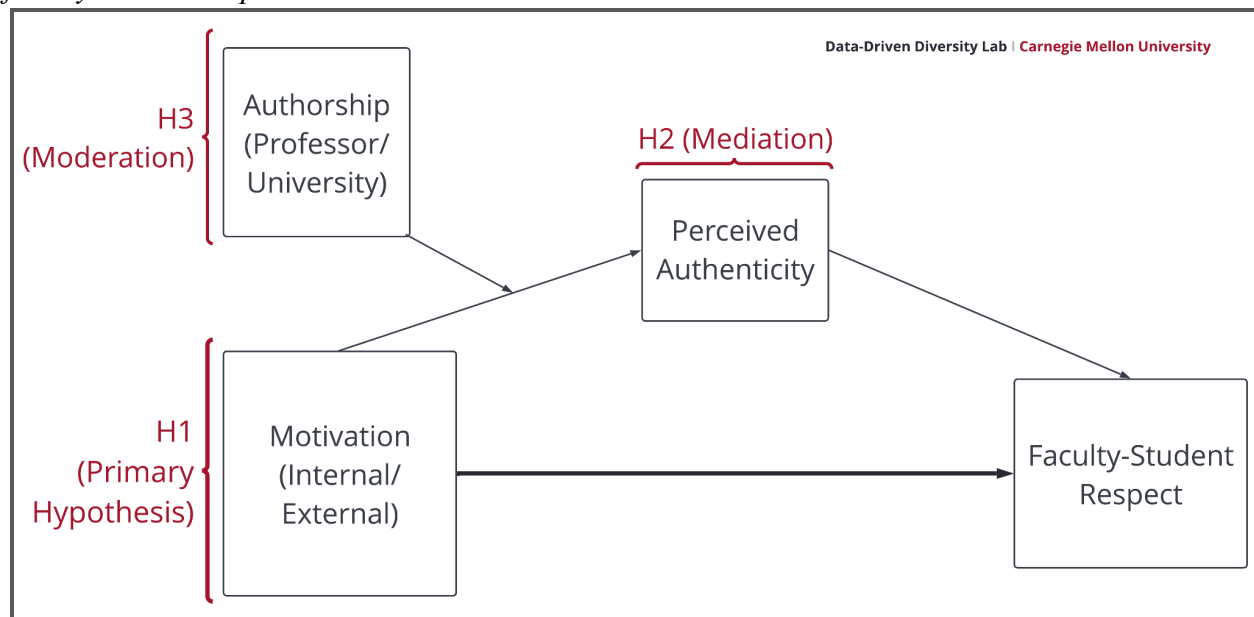across the racial divide. Journal of Experimental Psychology: General, 143(2), 804-824.

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**Appendix**

**Figure 5**
*Proposed mediation model for the interaction between motivation and authorship on faculty-student respect:*



*Note:* Hypothesized mediation that should be explored further