

# Faculty Impact on Black Student Success



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## Initial Study: Black Student Success & Faculty Ethnicity

Norco College decided to investigate the factors that influence Black student success based on a statewide Call to Action meeting that occurred in Spring 2020. The various admonitions by speakers in this meeting were moving, but the catalyst for this study came from the assertion that we need to hire Black faculty because Black students do better when they see someone teaching who looks like them. Since data were available to explore whether this assertion was accurate at Norco College, an initial investigation was conducted with Black student enrollments during the Fall 2017 through Winter 2020 terms. For every enrollment of Black students during this time, various faculty demographics were also identified including ethnicity, gender, courses taught, and PT/FT status.

The initial analysis compared Black student success rates by faculty ethnicity groups. In other words, success rates for Black faculty were compared against all other faculty ethnicity groups and tested for significance. Initially, there were some patterns of success that indicated that Black faculty were finding higher success rates with Black students than other faculty ethnicity groups (See Table 1).

Table 1. Black Student Success Rate by Faculty Ethnicity

Faculty Ethnicity	Enrollments	Success Rate
Asian (n=60)	681	57.0%*
Black (n=37)	804	72.9%
Hispanic (n=97)	1170	63.6%*
Am Indian/Alaskan (n=2)	14	64.3%
2 or more (n=10)	215	59.5%*
White (n=282)	5718	66.1%*
Unknown (n=1)	3	100.0%
Total (n=489)	8605	65.5%

Comparison Group

\* Indicates value of  $p < 0.01$ , significant difference from comparison group

After sharing initial results with the college president, an advisory team was assembled with representatives from Student Services, Academic Affairs, the Racial Justice Taskforce, and other necessary employee constituencies (faculty, classified professionals, administration) to review these data. The advisory team listened to the initial outcomes and made suggestions on which factors to consider and provided help with context in interpreting quantitative data. One particular area for inquiry suggested by the advisory team was in comparing gender differences in success rates of Black students and Black faculty. This inquiry resulted in a discovery of one of the most drastic differences of success rates with Black male students, 75.6% and 60.2% with Black Female Faculty and Black Male Faculty, respectively (See Table 2). In addition, it was decided after the initial presentation to the advisory team that other faculty or course-related variables that could be influencing Black student success could be: Umoja, percentage of math or science courses, percentage of courses with FT (Full Time) faculty, and faculty ethnicity.

Table 2. Comparing Gender Differences in Black Student Success by Gender of Black Faculty

	<b>Black Female Faculty</b>	<b>Black Male Faculty</b>	<b>Total</b>
<b>Black Female Students</b>	<b>76.1%</b>	<b>69.0%</b>	<b>74.0%</b>
<b>Black Male Students</b>	<b>75.6%</b>	<b>60.2%</b>	<b>71.6%</b>
<b>Total</b>	<b>75.9%</b>	<b>65.0%</b>	<b>72.9%</b>

One point of concern through these analyses was though the results were very interesting, they did not answer whether it was the ethnicity of the faculty making the difference or if there were some other mitigating factors, as mentioned above, that influenced this outcome. To measure the impact or weight of faculty ethnicity more precisely on Black student success in light of these other influences, the advisory team suggested the use of a multiple regression analysis. The strength of multiple regression is that it takes each variable that is entered into the analysis, or model, and determines the weight of each variable individually on the outcome. In the current study, the model that was tested using multiple regression included 9 variables in the 2017-2020 dataset of Black student enrollments merged with student and faculty demographics:

1. % of Umoja courses
2. % of math or science courses
3. % of courses taught by FT faculty
4. % of courses taught by Asian Faculty
5. % of courses taught by African American/Black Faculty
6. % of courses taught by Hispanic faculty
7. % of courses taught by Native Alaskan/American Indian faculty
8. % of courses taught by faculty with Two or More Races
9. % of courses taught by White faculty

When taking into account, or controlling for, the impact of Umoja, math/science courses, and FT status of faculty, faculty ethnicity (of any group) did not become a significant predictor of Black student success. It should be noted that two significant predictors in this model resulted, and they were:

1. % of math or science courses (+)
2. % of courses taught by FT faculty (-)

The (+) and (-) symbols indicate the direction of the relationship between the predictor and the outcome. For instance, as the percentage of math or science course increased for Black students, their success rate increased. Conversely, as the percentage of courses taught by FT faculty increased with Black students, their success rate decreased. Though these were significant predictors in the model, the model was not strong. This is indicated by the R Square measure which showed that these predictors only accounted for 1.7% of the impact on Black student success as a whole. In other words, over 98% of

the influences on the success of Black students were unaccounted for by this model. Two conclusions were derived from these data:

- Faculty ethnicity did NOT have a significant impact on Black student success.
- Focusing on immutable factors, such as faculty demographics and course characteristics does not result in a strong model for predicting Black student success.

## Research on Faculty Impact Survey & Black Student Success

Given these data and resulting conclusions, the researcher decided to re-examine the data to determine which individual faculty had the highest success rates with Black students. The following summarizes the 36 faculty members with the highest Black student success (72% success rate or higher):

- Ethnicity – 6% Asian, 11% Black, 6% Hispanic, 77% White.
- Departments – 11% Arts, Humanities & World Languages, 17% Business, Engineering & Industrial Technology, 8% Communications, 8% Math, 33% Social & Behavioral Sciences, 22% Science & Kinesiology
- Full Time/Part Time Status – 61% FT, 39% PT (Part Time)

Though these demographic areas were not always representative of faculty teaching during that time, this may not be a subset that is necessarily representative of all faculty. The area to note is the distribution of high-performing faculty over ethnicity, discipline/department, and full-time/part-time status. Since it was clear from the initial regression analysis that none of these demographic variables could adequately account for Black student success, it was decided with input from the advisory group that these faculty should be convened, and an inquiry made as to what they thought was making the impact in their classes with Black students.

During Winter 2022, the 36 faculty members were contacted and 24 expressed interest/availability in participating in the Faculty Inquiry Group (FIG). These 24 faculty members were then contacted to participate in the two-hour FIG and thirteen faculty attended the meeting on May 9, 2022. They provided answers to questions surrounding what might be responsible for the high Black student success rates in their classes for the study. The faculty responses fell into three different categories:

- Human Side (Life Experiences): some examples include personal experiences with discrimination, prior experience teaching at high minority, low socioeconomic schools; or professional development training in equity.
- Pedagogy (What happened in the classroom): some examples include flexibility in deadlines, actively reaching out to students who need help, showing kindness to students, relating personal vulnerabilities and authenticity.
- Materials (text, documents, website, etc.): some examples include intentional assignments focusing on culture or family history, providing access to texts and resources (OER), incorporating music in class.

To validate input from the FIG with Black student success, a Faculty Impact Survey was created from the FIG results, and the survey items were reviewed and verified by participating faculty (Appendix A). In Fall 2022, the Faculty Impact Survey (FIS) was distributed after presenting the survey to the Academic Senate. The survey was made available for approximately three weeks toward mid-semester and resulted in 59 faculty respondents. The Fall 2022 enrollments for each FIS respondent were gathered

and then limited to Black students. Finally, these Black student enrollments were merged with the faculty’s FIS responses. In this way, the dataset showed all Black student enrollments for these faculty aligned with each faculty’s responses on the FIS. From this merged dataset, faculty responses regarding best practices could be validated against Black students’ performance (success rate) in their classes for that semester.

With a survey of this type, it is important to explore whether larger factors exist that may explain Black student success rather than simply looking at each survey item in isolation. In essence, these factors may tie together multiple survey items and bring deeper understanding conceptually to what may improve Black student success. To do this, Exploratory Factor Analysis was employed on all thirty items in the FIS. The result was a three-factor solution that accounted for 50.1% of the variance. It is important to understand that factor analysis addresses how well items “hang together”, so these factors are measures of between-variables correlation, not with Black student success. The three factors that resulted are displayed in Table 3.

Table 3. Results of Factor Analysis for Faculty Impact Survey

Factor	Variance	Number of Items	Examples of Items
<b>Caring Environment</b>	31.6%	8	It is important to create a caring environment in the classroom; It is important that students view me as a kind professor.
<b>Intentional Assignments</b>	9.9%	10	I incorporate intentional assignments focusing on sharing students’ culture and family history; I play music either before or during class to set a welcoming environment.
<b>Grading</b>	8.6%	6	I think it is ok to drop students’ lowest scores in determining their final grade; I think tracking student performance by race/ethnicity is important.

The next step in determining whether these factors were important to Black student success was to include them with the original nine variables of the multiple regression analysis. The variables in this model were:

1. % of Umoja courses
2. % of math or science courses
3. % of courses taught by FT faculty
4. % of courses taught by Asian Faculty
5. % of courses taught by African American/Black Faculty
6. % of courses taught by Hispanic faculty
7. % of courses taught by Native Alaskan/American Indian faculty
8. % of courses taught faculty with Two or More Races
9. % of courses taught by White faculty
10. Caring Environment Factor Score
11. Intentional Assignments Factor Score
12. Grading Factor Score

Incorporating these factors with the original variables including faculty ethnicity, math/science, and full-time/part-time status into multiple regression resulted in one variable of significance: Intentional Assignments Factor Score (-). The complicating aspect of this significant predictor is the direction of the relationship indicated by the minus sign (-). This means that there was a tendency for Black Student success rate to increase as the Intentional Assignments score decreased. The model with the three factors became stronger (R-squared = 5.3%) than the original model (R-squared=1.7%). However, with approximately 95% of the variance in Black Student Success remaining unexplained it is still not considered strong. One possible explanation for this could be that factors, by virtue of the fact that one score is now explaining between 6-11 individual variables, are somewhat “heavy” variables and may not be as responsive as the individual FIS items as variables.

The final model analyzing the FIS included all 30 items individually along with faculty ethnicity, math/science, and full-time/part-time status. Results of this multiple regression analysis showed the following significant variables:

1. “I set high expectations for all students in my class.” (-)
2. “It is important that students show accountability in my classroom.” (+)

One of the encouraging aspects of this model was the large increase in predictive power (R-squared) over the previous 3-Factor regression, 20.1% versus 5.3%, respectively. However, a challenge in this model was interpreting the relationship of the two significant variables with Black student success:

- As high expectations (scores) for faculty increased, Black student success (rates) decreased, and
- As the importance of accountability (scores) for faculty increased, Black student success (rates) increased.

These results were presented to the Racial Justice Taskforce, after which a thorough discussion ensued on context and interpreting results. An interesting interpretation of these challenging relationships with the two significant variables was that the #1 item had a sole focus on the instructor setting high expectations, whereas the #2 item focused on a student-centered approach for them to show accountability. Although this is a preliminary idea, it is worth pursuing in successive research.

Returning to the original assertion that began this study, “Black students seem to do better when they see someone who looks like them teaching their classes”, the data in this study do not support this assertion. As pointed out in Table 1, Black faculty showed a clear trend of higher success rates over most other faculty ethnicity groups, but the explanation is not ethnicity as shown by all multiple regression analyses involved in this study. To determine if the difference in Black faculty success rates could be attributed to the significant predictors in this study, a t-test of independent groups was conducted comparing Black student success rates between Black faculty versus non-Black faculty on these two survey items. In both predictors, Black faculty were found to be significantly higher than non-Black faculty on their mean response scores. However, these results should be regarded as very preliminary since there were only three Black faculty who responded to the FIS. That Black faculty’s in-classroom behavior or attitude is significantly influencing Black student success is clearly a possibility but would need to be corroborated by further FIS administrations and follow-up analyses.

## Summary

In summary, the following conclusions were taken from this study:

- Faculty ethnicity is not a predictor of Black student success, but differences between Black and non-Black faculty in classroom behavior or attitude has preliminary support from this study.
- Black student success had an inverse relationship with faculty who reported setting high expectations for students in their classes.
- Black student success had a positive relationship with faculty who reported it was important to them that students show accountability in their classroom.

One concern with this study is that only three Black faculty were included from the FIS who had Black student enrollments (n=18 enrollments). Although the enrollment data for these Black faculty met minimal criteria to be subjected to these various analyses, there would be a benefit in administering the FIS again to faculty so that these numbers could increase beyond minimal numbers. Another potential concern is the R-squared of the final regression model that included the 30 FIS items. At 20.1%, one might contend that this model still leaves more unknown than known as is therefore unacceptable. According to Ozili (2023), a model with an R-squared between 10 percent and 50 percent is acceptable in social science research when some of the explanatory variables are significant. The last regression model meets all of these criteria, so is purportedly acceptable for predicting Black student success.

## Next Steps

Next steps for this study would be to follow up with successive FIS administrations in order to make the enrollment data as robust as possible. Based on these results, another clear step is to apply these findings to pedagogy. In particular, an increased emphasis on accountability could be promoted to faculty with a focus on giving the students the agency to demonstrate this. What “demonstrating accountability” means and looks like will be the subject of conversation when presenting these data and will hopefully provide additional direction for application in the classroom and beyond.

## References

Ozili, Peterson K. (2023). The acceptable R-Square in empirical modelling for social science research.

*MPRA Paper No. 115769.*



## Appendix A – Faculty Impact Survey & Results

In general, please indicate your agreement with the following statements.

Strongly Agree (5), Agree (4), Slightly Agree (3), Slightly Disagree (2), Disagree (1), Strongly Disagree (0)

1. I think tracking student performance by race/ethnicity is important.
2. I have pursued training on issues related to anti-racism, equity, diversity, and inclusion.
3. I have had frequent contact (at least daily) with people from underrepresented backgrounds as part of my personal or professional history.
4. I strive to be welcoming to all students in my classes.
5. It is important that students view me as a kind professor.
6. It is important to me to celebrate students and connect at a personal level.
7. I take into consideration the possibility of students' traumatic experiences in and out of the academic setting, especially with historically minoritized students.
8. When it appears that a student is having trouble in class, I pull them aside individually to ask if they need help.
9. It is important to create a caring environment in the classroom.
10. It is important to value individuals in the classroom.
11. I think all students have the potential to be successful in my class.
12. I set high expectations for all students in my class.
13. It is important to emphasize planning with students who take my class.
14. It is important that students show accountability in my classroom.
15. Collaborative assignments/group work are valuable learning tools in my class.
16. I am proactive about regularly contacting each student, especially historically marginalized students.
17. If someone provides an explanation for why they are late with an assignment, I tend to believe they are telling the truth.
18. I think it is ok to drop students' lowest scores in determining their final grade.
19. Tests tend to be the most heavily weighted portions of a student's grade in my class.
20. I value students' knowledge and resilience, especially with historically minoritized students.
21. Scores should always be lowered if students submit late work.
22. I attempt to remember students' names in all of my classes by early in the term.
23. I am very responsive to emails related to my classes.
24. Flexibility in deadlines is not a good practice in the classroom.

Please indicate how often you engage in the following.

(Always, Often, Sometimes, Rarely, Never)

1. I use personal stories from my life and students' lives in class.
2. I look for opportunities to let students know I am proud of their accomplishments.
3. I incorporate intentional assignments focusing on sharing students' culture and family history.
4. I incorporate service learning or internship-like experiences in my classes.
5. I use low-cost textbooks and course materials.
6. I play music either before or during class to set a welcoming environment.