

## article:1537

# The ACT and High School GPA as Predictors of Success in a Minority Engineering Program

This paper needs to be put into the context of our overall program of research on Minority Engineering Programs (MEPs). In most of our research, and associated publications, we have dealt with the characteristics of a quality MEP. Our MEP has been very successful in increasing the number of minority students majoring in engineering, increasing the GPA of minority students, increasing the retention rate, and increasing the graduation rate. We also have conducted research on and published the results of our assessments of our pre-engineering program. Our pre-engineering program has also been successful in increasing interest in engineering careers and encouraging students to enter undergraduate work in the sciences or engineering. Thus, the current paper needs to be put into the context of this overall body of work on the characteristics of an effective MEP.

The purpose of this paper was to investigate the use of two indicators frequently used in making decisions regarding admission to undergraduate engineering programs. Those indicators were the student's high school grade point average and ACT composite test score. As a public institution, we use the ACT rather than the SAT in decision making. We wanted to look at the effectiveness of these measures in making decisions about admission to an MEP for African-American students.

This was a follow-up to an earlier study that investigated the same questions. We looked at a sample composed of 208 African American students enrolled in the minority engineering program and 208 White students. All data came from student records. There were two measures of success, graduation and university grade point average.

Both the ACT and high school grade point average were significantly correlated with the success measures. However, when used in combination, high school grade point average was the only significant predictor for both African American and White students. Thus, the results were similar to the two groups and suggested that high school grade point average was sufficient for predicting engineering success.

The results are important given the criticisms that have been leveled against the use of standardized tests, including the use of such tests with minorities. At least for our program, both for the MEP and for engineering overall, GPA provided as good a prediction as GPA plus ACT. As a practical matter, it would be sufficient to use GPA in making admission decisions.

Given the lack of research and theory on MEP, the study does provide a start toward understanding characteristics related to success in MEPs. What studies of this type cannot answer is where the cutoff should be placed in terms of criteria for admission to MEP programs. In that one of the major purposes of an MEP program would appear to be to offer opportunities to those traditionally underrepresented in engineering majors, it would appear that cutoffs should be set so as to provide maximum opportunity even if there is some risk of failure.

There is an important caveat. Our institution is an open admission university. As such, students do not always try to achieve maximum performance on the ACT.

We expect to continue our research on the program elements that make an MEP exceptional. As a part of this research initiative, we also expect to continue to investigate what student characteristics are related to academic and professional success.

Author 1: Paul C. Lam [plam@uakron.edu](mailto:plam@uakron.edu)

Author 2: Dennis Doverspike [ddoverspike@uakron.edu](mailto:ddoverspike@uakron.edu)

Author 3: Julie Zhao [zhaoj@muohio.edu](mailto:zhaoj@muohio.edu)

Author 4: P. Ruby Mawasha [ruby.mawasha@wright.edu](mailto:ruby.mawasha@wright.edu)

[: Back to 2006 Summer Issue Vol. 2, No. 2](#)

[: Back to List of Issues](#)

[: Back to Table of Contents](#)