Does Superscoring Increase Subgroup Differences ?

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When applicants take the ACT® more than once, how do colleges and universities reconcile and make sense out of the multiple scores? In terms of validity, fairness, and impact on subgroup differences, are certain score-use polices better than others? Given that the proportion of students retaking the ACT has increased over time (Harmston & Crouse, 2016), answers to these questions have become increasingly relevant and pressing. The focus of this technical brief is to summarize empirical evidence on the validity and fairness of various score-use policies with an emphasis on superscoring. Specifically, findings from a study that examined the differential validity and predictions of different score-use policies that was published in 2018 will be reviewed. Additionally, new analyses demonstrating the impact of superscoring on subgroup differences will be presented. Finally, responses to ACT's Higher Education Score Use Survey are presented to help contextualize these findings. The intent is to arm higher education professionals with the most recent evidence to help support informed decision making on their own campus.

As shown in Figure 1, retesters performed better in college than what was expected based on their test scores. And this prediction error was minimized when superscores were used, as compared to the other scoring methods. If superscores reflected positive measurement error—that is, an overestimate of one's true achievement level—then superscores would predict students to earn higher grades in college than what they actually earned, and this overprediction would increase as the number of retests increases. However, the results of the study suggested exactly the opposite.

Why is this the case? One hypothesis is that superscores and number of retests reflect not only academic preparation but also a motivational component. Specifically, students who are willing to forgo multiple Saturdays to sit for a multiple-hour test with the hope of maybe increasing their score are also the students who are likely to ask questions in their college courses, visit their professor during office hours, and take advantage of any extra credit opportunities to ensure the best possible grade. Future research should explore these hypotheses.

Another contribution of this study is the evaluation of the diversity implications of employing one scoring method versus another. Interestingly, despite the fact that underserved students are less likely to retest (Harmston & Crouse, 2016), the superscoring method did not result in a less diverse admitted class as compared to the other three methods. In fact, the gender, racial, and parental income distributions of a simulated admitted class were identical across the four scoring methods.

Current Study

The focus of the current study is to extend the previous research with an emphasis on further exploring the diversity implications of

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For example, the retest rates for African

Table 2. Subgroup Unstandardized (USTD) and Standardized (STD) Differences in ACT Composite Scores by Scoring Method

Group	Most recent score

Students who tested more often tended to have higher ACT Composite scores. Moreover, the difference between the average ACT Composite score based on the most recent score as

Notes

1. Research on the SAT found similar findings pertaining to superscoring (Boldt, Centra, & Courtney, 1986).
2. The reason why there is a slight increase in the USTD but no change in the STD is due to the fact that the standard deviation of superscores is larger than the standard deviation of the most recent scores (5.9 vs. 5.8, respectively).

References

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Appendix

Table A1. Mean ACT Composite Scores by Scoring Method, Number of Times Tested, and Student Subgroup

	One Time			Two Times			Three Times			Four or More Times		
Group	%	Recent	Superscore	%	Recent	Superscore	%	Recent	Superscore	%	Recent	Superscore
All students	56%	19.3	19.3	24%	22.0	22.9	11%	23.3	24.7	9%	23.9	25.6
Gender												
Male	59%	19.2	19.2	23%	22.3	23.2	10%	23.6	25.0	8%	24.1	25.9
Female	52%	19.4	19.4	26%	21.9	22.8	12%	23.2	24.5	10%	23.8	25.5
Missing	63%	16.5	16.5	25%	18.4	19.6	6%	21.1	22.8	5%	22.7	24.7
Race/ethnicity												
African American	57%	16.1	16.1	25%	17.6	18.6	11%	18.3	19.7	8%	19.1	21.0
American Indian	64%	16.2	16.2	21%	18.1	19.1	8%	20.1	21.5	7%	21.6	23.4
White	51%	20.6	20.6	25%	23.3	24.2	13%	24.3	25.6	11%	24.7	26.3
Hispanic	66%	17.9	17.9	23%	20.2	21.1	7%	21.8	23.1	4%	22.5	24.2
Asian	51%	23.2	23.2	26%	25.5	26.4	13%	26.3	27.6	10%	26.4	28.1
Native Hawaiian/Pacific Islander	73%	17.0	17.0	18%	20.3	21.2	6%	22.7	24.0	3%	23.5	25.1
Multiracial	58%	19.8	19.8	24%	22.3	23.3	11%	23.5	24.8	7%	23.9	25.6
Missing	62%	18.1	18.1	22%	21.7	22.6	9%	23.6	24.9	7%	24.1	25.8
Annual family income												
Less than $36,000												

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