

Does Test Anxiety Bias ACT Scores?

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Debilitating test anxiety occurs when someone exhibits negative cognitive or physical reactions to an evaluation. Extensive research has established that examinees who report debilitating test anxiety tend to perform worse,¹ but this does not necessarily mean that the anxiety causes poor performance. It may be that examinees perform worse because of a third variable such as inadequate preparation. Statistical evidence supports this idea—known as the deficit hypothesis²—when the relationship between anxiety and observed test scores is explained by the correlation between anxiety and ability. A recent study using ACT[®] assessment data tested the deficit hypothesis.³ Results suggest that *test anxiety does not bias ACT scores and that preparation is essential for minimizing anxiety and maximizing performance.*

For this study, a sample of ACT examinees responded to a post-test questionnaire. All respondents were asked, "While taking the test, were you so stressed or anxious that you believe it negatively affected your performance on the test?" Respondents who answered yes were presented a series of checkboxes listing possible reasons for their anxiety: (a) I had not yet taken the class(es) necessary for doing well on one or more areas of the test, (b) Some areas of the test had not been covered at all or had not been covered adequately in my high school classes, (c) I realized I had not done anything to prepare myself for taking this type of test, (d) I suddenly realized how important the test results were to my future, and (e) It is not uncommon for me to experience test anxiety.

Using established methods for investigating measurement bias due to anxiety,⁴ a series of

structural equation models were fit to the data. In the models, anxiety was a latent variable manifested by responses to the questionnaire, and ability was a latent variable manifested by four ACT scores (English, math, reading, and science; Figure 1). In Figure 1, dashed lines represent the "interference effects." If statistically significant, those effects would be evidence of measurement bias since anxiety was related to observed ACT performance even when accounting for the correlation between anxiety and ability. Two models were fit to the data: the general bias model with interference effects and the no bias model without interference effects.

In the general bias model, none of the interference effects were significantly different from zero. Moreover, according to model-data fit comparisons, the no bias model fit the data as well as the general bias model. Both outcomes are consistent with the deficit hypothesis. That is, the correlation between anxiety and ability (-.30 in Figure 1) accounts for the relationship between anxiety and observed test performance. Therefore, test anxiety does not bias ACT performance.

In this study, test anxiety was largely a manifestation of feeling unprepared for the ACT, especially due to not learning the required knowledge and skills in high school courses. Results from this study are consistent with the notion that *being unprepared causes examinees to experience greater test anxiety and to perform worse on the assessment.* Thus, this study underscores the importance of learning the content the ACT assesses, especially by taking the related high school courses.



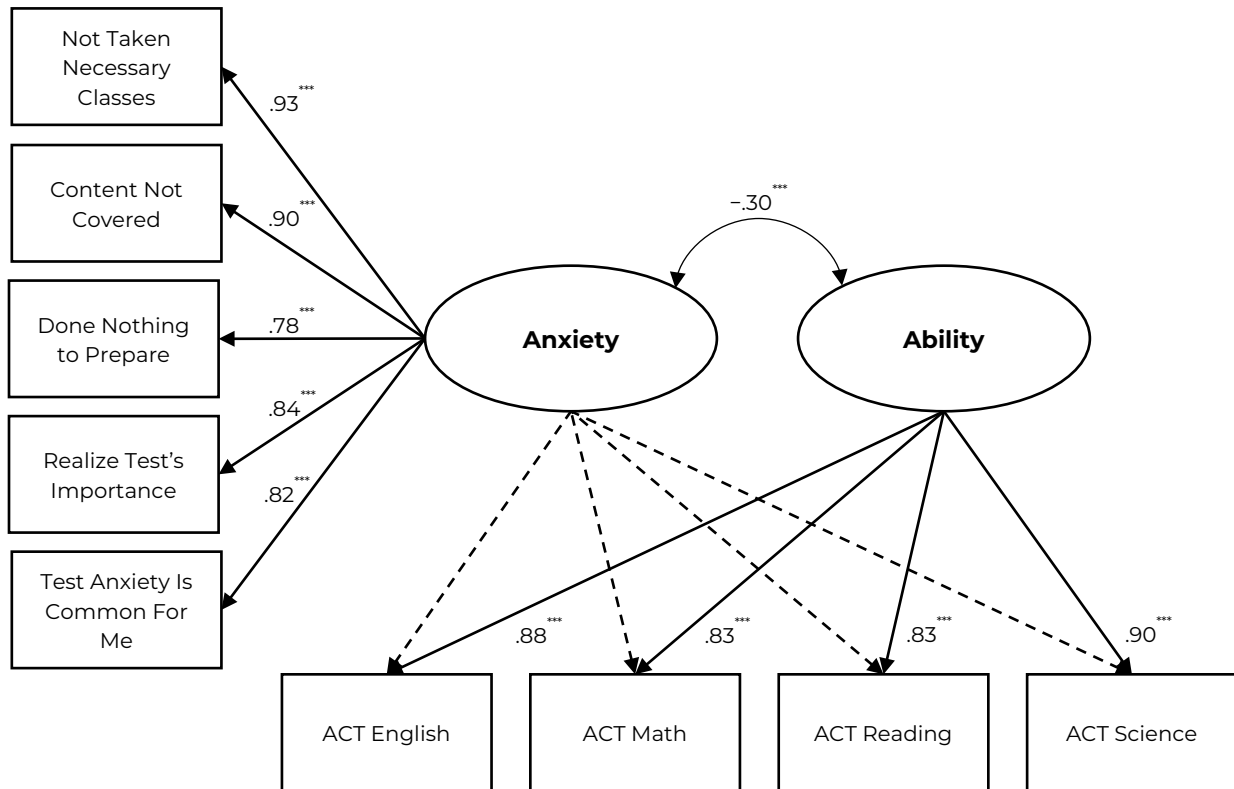
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Figure 1. Structural equation model with standardized parameter estimates from the no bias model

Notes

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