Westside Test Anxiety Scale Validation

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Abstract

The Westside Test Anxiety Scale is a brief, ten item instrument designed to identify students with anxiety impairments who could benefit from an anxiety-reduction intervention. The scale items cover self-assessed anxiety impairment and cognitions which can impair performance. Correlations between anxiety-reduction as measured by the scale and improvements in test performance were used as the validation criteria. Subjects were from two diverse samples: 25 anxious college students, many on academic probation, and 34 anxious fifth grade students. Each sample was divided into Intervention and Control groups, with the Intervention groups receiving an anxiety-reduction training. Anxiety scores and test scores were attained prior to the study and after Interventions. Anxiety reduction benefits as measured by the Westside scale correlated .49 and .40 with test gains for the college and fifth grade samples respectively. The average correlation was r = 44, indicating that changes in the Westside scale accounted for 20% of changes in these objective tests. The solid validation coefficient combined with the replication in two diverse student populations indicate that the Westside scale is a reliable and valid measure of test-anxiety impairment. As the scale is brief and easily administered, is public access and free of charge to schools, and is shown to be a reliable and valid measure, it is recommended that the Westside Test Anxiety Scale be considered by intervention programs to screen for test-anxiety impairments.

Introduction

Between 15–35 percent of students are adversely affected by high test anxiety, depending on the criteria for inclusion and the students sampled. Highly anxious students score about 12 percentile points below their low-anxiety peers (Hembree, 1988), making test anxiety one of the more serious academic handicaps among students today.

School programs to reduce test-anxiety impairment need an instrument to identify those students who are anxious and might benefit from an anxiety-reduction intervention, with some assurance that the instrument properly identifies test-anxiety impairments.

The Westside Test Anxiety Scale is an extremely brief screening instrument meant to identify students with anxiety impairments. The scale is comprised of ten items, and takes about five to eight minutes to administer. It has been used by school counselors over several years, and has been the primary anxiety measure in three research projects.

The aim of the present investigation is to validate the instrument, so school programs can better understand its properties and have confidence in its applications.

Method

Content validity

While test anxiety is ordinarily considered to include physiological over-arousal, along with cognitions including dread, worry, and expectations of catastrophic failure, schools are most interested in the impairment aspect of the condition. Excessive test anxiety often contributes to impaired test performance, and the term "test anxiety" is commonly used to refer to the anxiety and its accompanying impairment (Hembree, 1988).

Worry and dread are thought to interfere with concentration and are closely associated with impairment, while over-arousal without the worry features is only loosely associated with impairment (Deffenbacher, 1980; Cassady and Johnson, 2001). To assess test-anxiety impairment, therefore, it seems reasonable to include cognitive worry items, but not physiological over-arousal items, and to combine these items with self-assessed performance impairment items.

The Westside scale combines six items assessing impairment, four items on worry and dread, and no items on physiological over-arousal. The cognitive items are similar to those in the Cassady-Johnson (2001) Cognitive Test Anxiety Scale and in other familiar anxiety scales, and the impairment items are similar to those on the Alpert-Haber (1960) Debilitative Anxiety Scale.

The Westside scale thus has high face validity, in that it includes the highly relevant cognitive and impairment factors but omits the marginally relevant over-arousal factor.

Change scores

Validation is traditionally accomplished by showing that a test anxiety instrument identifies students with lower test performance, or that it correlates with established instruments that are already considered validated. The excellent Cognitive Test Anxiety Scale by Cassady and Johnson (2001) attained $r = .25+$ correlations to course test scores, accounting for a respectable 7–8% of the test variance. Yet fully 25% of the variance could be accounted for by the scores on a prior course exam, and the scale could not improve upon the predictive power of that prior exam.

Use of change scores should provide a significant advantage. We should have more confidence in a scale if it could be shown that changes in the test-anxiety scores are closely related to changes in test performance. As test-anxiety scores decrease, we should find that test performance improves (and vice versa). So far as a test anxiety scale is a valid measure of test impairment, then variations in that scale should move together with variations in test performance (other factors being equal).

The current investigation looks at two anxiety-reduction intervention studies, already published, and correlates changes in the Westside scale scores to changes in objective test results. The two studies assigned students to Intervention and Control groups, administered an Accelerated Desensitization & Adaptive Attitudes Training (Driscoll, 2006) to the Intervention students, and assessed the results.

Results

A 2004 intervention with anxious college students included 20 students, half on academic probation, assigned in equal proportion to Intervention and Control groups (Driscoll, Holt, & Hunter, 2005). Students took midterm exams, the Intervention students reviewed the ADAA Training an average of twice, and students took finals. The test change scores were the finals scores minus the midterm scores. Test scores improved an average of 18 percentile points for the Intervention students over the controls. Anxiety change scores were obtained from 11 of the students, and the anxiety-reduction benefits were substantial.

A 2005 replication involved 18 students, all on academic probation. Test scores improved an average of 3 percentile points for Intervention students over Controls. Anxiety change scores were obtained from 14 of the students, and the anxiety-reduction benefits were modest.

Given the similarities between the two samples, the results were combined for the present analysis. The combined sample included 25 students—16 of whom received the Intervention, and 9 Controls. The correlation between anxiety-reduction on the Westside scale and test gains for the combined sample was $r = .49$ ($df = 23$, $p < .01$) indicating a strong correspondence between anxiety-reduction and objective test gains.

An Intervention with fifth grade students screened an entire fifth grade class and included 36 highly anxious students (Miller et al., 2006). The Intervention group reviewed the training five times over six months. Test change scores were the 2005 state TCAP test scores adjusted for student 2004 scores, and test scores for the Intervention group improved an average of 7 percentile points over the Controls. Anxiety change scores were attained from 34 students, and the anxiety levels for the Intervention students declined modestly but not significantly so.

The correlation between anxiety reduction on the Westside scale and test gains was $r = .40$ ($df = 32$, $p < .01$), indicating again a clear correspondence between changes on the scale and objective test gains.

Scale validity, based on the average of the two attained correlations weighted by the number of subjects in each study, is calculated here as $r = .44$. Thus, changes in anxiety impairment as measured by the Westside scale accounted for 20% of the changes in test performance in these samples.

Discussion

The consistent correlations in two separate populations between changes on the West-side scale and changes in test performance indicate that the scale is a reliable indicator of performance impairment. Similar results were attained with college students, many on academic probation, and with 5th grade students, most in good standing, suggesting that the scale is a reliable measure across quite different population samples.

The .44 coefficient of validity is high by current standards. Some of that may be due to the scale itself, which combines interfering cognitions with experienced impairment and thereby covers the most pertinent factors and omits the marginal ones. Yet much of the higher coefficient should be reasonably attributed to the use of change scores for the validation, instead of the usual method of correlating stationary scores. Given significant changes in anxiety levels and in performance, decreases on a valid measure of anxiety impairment should correlate to performance gains, as was the case here. Taken together, the research indicates that the Westside Test Anxiety Scale is a reliable and valid measure of test-anxiety impairment.

As the instrument is brief and easily administered, is public access and free of charge to schools, and is seen to be a reliable and valid measure, it is recommended that the Westside scale be considered by school intervention programs to screen for test-anxiety impairments.

Appendix A: Westside Test Anxiety Scale

Rate how true each of the following is of you, from <u>extremely or always</u> true, to <u>not at all or never</u> true. Use the following 5 point scale.

5	4	3	2	1
extremely or always true	highly or usually true	moderately or sometimes true	slightly or seldom true	not at all or never true

__ 1) The closer I am to a major exam, the harder it is for me to concentrate on the material.

__ 2) When I study, I worry that I will not remember the material on the exam.

__ 3) During important exams, I think that I am doing awful or that I may fail.

__ 4) I lose focus on important exams, and I cannot remember material that I knew before the exam.

__ 5) I finally remember the answer to exam questions after the exam is already over.

__ 6) I worry so much before a major exam that I am too worn out to do my best on the exam.

__ 7) I feel out of sorts or not really myself when I take important exams.

__ 8) I find that my mind sometimes wanders when I am taking important exams.

__ 9) After an exam, I worry about whether I did well enough.

__ 10) I struggle with writing assignments, or avoid them as long as I can. I feel that whatever I do will not be good enough.

_____ Sum of the 10 questions

_____ Divide the sum by 10. This is your Test Anxiety score.

What does your test anxiety score mean?

1.0—1.9 Comfortably low test anxiety

2.0—2.5 Normal or average test anxiety

2.5—2.9 High normal test anxiety

3.0—3.4 Moderately high (some items rated 4=high)

3.5—3.9 High test anxiety (half or more of the items rated 4=high)

4.0—5.0 Extremely high anxiety (items rated 4=high and 5=extreme)

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