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# Construct Validity Evidence for the *Student Aspirations Survey*

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*The influence of students' affective development—especially student aspirations —upon academic and life achievement is gaining significant attention in the literature. However, psychometrically sound instruments that measure student aspirations and students perceptions of school climate characteristics that influence aspirations are not available for use by educators attempting to guide school reform efforts. The* Student Aspirations Survey *was administered to 1,160 students in two rural middle and two rural high schools. Responses were subjected to confirmatory factor analysis, and results suggest that evidence of construct validity is considerable for student responses to the aspirations scales and very limited for student responses to the school climate scales (possibly due to the very high factor correlations). A small to moderate method effect may be present among student responses to the aspirations scales. Suggestions for improvement of score interpretation are provided.*

In the current era of educational reform, techniques and agendas for educational improvement are quite common. In particular, the influence of student affect upon student achievement and general well-being receives a significant amount of attention in the educational and psychological literature, certainly more than was present a decade or two ago (cf. Weiner, 1979; Weiner, 1994). Self-efficacy (Bandura, 1993; Schunk, 1985), or self-concept more generally (Marsh, 1990), stress (Fleming, 1981), and boredom/interest (Plucker & McIntire, 1996) are among the social and emotional topics that researchers attempt to link to student achievement and productivity. While this research is occasionally controversial (Kohn, 1994), the role of specific affective constructs such as student aspirations is generally acknowledged in achievement and motivation (Farmer, Wardrop, Anderson, & Risinger, 1995; Flint, 1992; Kirsch, 1986; Lewin, Dembo, Festinger, & Sears, 1944; Quaglia, 1989; Sewell & Hauser, 1975, 1976).

For example, researchers associate student aspirations with leadership skills (McCullough, Ashbridge, & Pegg, 1994; Robinson & Horne, 1993), psychological health and use of coping strategies (Payne & Peck, 1979; Snyder, 1995), high school and college attrition (Bickel, 1989; Bickel & Lange, 1995; Eckstrom, Goertz, Pollack, & Rock, 1986; Foster, 1975), educational attainment (Robertshaw & Wolfle, 1980), and adult income (Long, 1995). Available research suggests that significant educational and psychosocial benefits are associated with high levels of aspirations, and correspondingly, educational and psychological problems are associated with low levels of aspirations.

To aid schools in the development of programs that foster student aspirations, staff at the National Center for Student Aspirations (NCSA) designed an instrument to measure the student aspirations and student perception of school climate conditions that influence aspirations development. Based upon theoretical (Quaglia, 1989; Center for Research and Evaluation, 1994) and empirical studies (Plucker & Quaglia, in press), the resulting *Student Aspirations Survey* includes two scales that represent Aspirations (Ambition, Inspiration), two scales for student Self-description (Achievement Motivation, General Enjoyment of Life), and eight scales of school climate Conditions (Achievement, Belonging, Curiosity, Empowerment, Excitement, Mentoring, Risk-taking, and Self-confidence). The survey is intended for group administration, and the results of the survey are used by schools to assess their students' level of aspirations and perceptions of school climate conditions that impact this level of aspirations, which allows research-based interventions to be targeted appropriately on the aspirations-relevant aspects of school climate that students perceive in a relatively negative light.

### *Previous Research with the Student Aspirations Survey*

In addition to the preliminary instrument development described by Plucker and Quaglia (in press), two measurement studies have been conducted with the *Student Aspirations Survey.* In the first, evidence suggested that the survey was a reliable measure of student aspirations and climate conditions, but evidence of construct validity via confirmatory factor analysis was not convincing (Plucker & Quaglia, in press). In addition, a relatively large per-

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Table 1
*Demographic Characteristics of Sample*

| Characteristic | Middle $n = 203$ | High $n = 403$ | High $n = 279$ | Middle $n = 275$ | Total Sample $N = 1160$ |
|---|---|---|---|---|---|
| Sex | | | | | |
| female | 48.2 | 51.8 | 57.2 | 46.2 | 51.2 |
| male | 51.8 | 48.2 | 42.8 | 53.8 | 48.8 |
| Grade | | | | | |
| 6 | 29.6 | | | 33.8 | 13.2 |
| 7 | 33.9 | | | 36.2 | 14.3 |
| 8 | 36.5 | | 29.3 | 30.0 | 20.7 |
| 9 | | 29.4 | 20.7 | | 15.2 |
| 10 | | 22.5 | 21.0 | | 12.9 |
| 11 | | 28.8 | 17.4 | | 14.2 |
| 12 | | 19.3 | 11.6 | | 9.5 |
| Mother's Education | | | | | |
| high school or less | 61.6 | 46.4 | 50.4 | 36.0 | 47.5 |
| college | 38.4 | 53.6 | 49.6 | 64.0 | 52.5 |
| Father's Education | | | | | |
| high school or less | 68.7 | 44.8 | 52.6 | 44.7 | 50.7 |
| college | 31.3 | 55.2 | 47.4 | 55.3 | 49.3 |
| Academic Ability | | | | | |
| below average | 5.6 | 7.3 | 4.8 | 7.5 | 6.4 |
| average | 52.3 | 48.4 | 59.8 | 52.0 | 52.7 |
| above average | 42.1 | 44.3 | 35.4 | 40.5 | 40.9 |

centage of surveys contained missing data. In the second study, Plucker (1996) found evidence of discriminant validity when the survey was used with secondary students. Students with high scores on the Aspirations scales had higher scores on the Conditions scales than students who had low Aspirations scores. Given the results of these two studies, NCSA staff concluded that the survey was a promising instrument for the measure of student aspirations and school climate perceptions, but that the instrument needed to be revised and subjected to additional validity studies.

## Method

The version of the *Student Aspirations Survey* used in this study consisted of 12 scales: two Aspirations scales, two Self-description scales, and eight Conditions scales. When responding to items which constituted the scales, students responded from strongly agree (1) to strongly disagree (4). Based on the earlier measurement studies, researchers modified the previous version of the *Student Aspirations Survey* by combining two of the Aspirations scales into one scale, reverse-coding additional items to remove any positive response bias, and removing items determined via exploratory analyses to be problematic with respect to reliability and construct validity. These revisions reduced the length of the survey from 98 items comprising 13 scales to 89 items comprising 12 scales.

### *Sample*

The survey was distributed to the student bodies at two high schools and two middle schools which draw students from 19 towns in rural areas of Maine. The average number of residents (1,264) in the 19 towns from which students were drawn is considerably smaller than the average number of residents per town statewide (2,457), but the median household income in the 19 towns (30,388) was similar to the state median household income (28,061). In addition, the towns' other financial and economic characteristics (e.g., tax rate, tax burden) were similar to state

Table 2
*Descriptive Statistics for SDQ-II Scales*[a]

| Scale | Mean[b] | *SD* | Kurt[c] | Skew[d] | *n* |
|---|---|---|---|---|---|
| Aspirations | | | | | |
| Inspiration | 2.63 | .51 | -.14 | .16 | 1102 |
| Ambition | 1.76 | .50 | .60 | .61 | 1079 |
| Self-perceptions | | | | | |
| Ach. motivation | 1.96 | .50 | .83 | .30 | 950 |
| Gen. enjoyment | 2.34 | .56 | .22 | .28 | 1002 |
| Conditions | | | | | |
| Achievement | 2.09 | .47 | .70 | .31 | 1007 |
| Belonging | 2.26 | .48 | 1.03 | .56 | 978 |
| Curiosity | 2.12 | .45 | 1.78 | .42 | 986 |
| Empowerment | 2.39 | .56 | .41 | .47 | 1065 |
| Excitement | 2.45 | .57 | -.18 | .28 | 992 |
| Mentoring | 2.26 | .51 | .64 | .41 | 990 |
| Risk-taking | 2.23 | .45 | 1.04 | .39 | 947 |
| Self-confidence | 2.14 | .48 | .54 | .33 | 945 |

*Note.* Scale scores reported as averages by dividing item sum by number of items.
[a]SE = standard error; Kurt = kurtosis; Skew = skewness
[b]SE mean = .02
[c]SE kurtosis = .16
[d]SE skewness = .08

averages and relatively homogeneous among the 19 towns. Detailed demographic profiles of students in each school and for the total sample ($N = 1,160$) indicate that the sample was roughly gender and grade balanced (Table 1). In addition to median household income, other indicators of socioeconomic status (i.e., parents' educational attainment) suggest that the sample is drawn from a middle class population. Students also reported their perceived ability level, and a majority felt themselves to be average or above average. This tendency for inflated self-perception is consistent with previous aspirations research (Plucker, 1996).

*Data Analysis*

Two sets of confirmatory factor analyses allowed evidence of construct validity to be gathered. In order to facilitate interpretability of student scores, items were averaged within scales. For example, a scale consisting of eight items was scored by adding the items and then dividing by eight. This negated the impact of the varying number of items per scale when making inter-scale comparisons. This conversion created a scale ranging from 1 (high) to 4 (low).

## Results

Descriptive statistics for the students' scores appear in Table 2. Means and distributions for the scores are very similar to those reported for the previous version of the survey (Plucker & Quaglia, in press), with relatively positive Ambition, Self-description, and school Condition perception, and generally neutral Inspiration. In contrast to data collected with the previous version of the instrument, student responses contained much less missing data.

*Reliability*

Values for Cronbach's alpha ranged from .64 for scores on the Risk-taking scale to .75 for scores on Curiosity. The average alpha for the Conditions scales was .72, and the average alpha for the Aspirations and Self-description scales was .71. Although evidence suggests that the instrument is sufficiently reliable for group and research uses, the results are less impressive than those associated with the previous version of the instrument (alpha values ranging from .69 to .84 with a mean of .78). However, given that most scales were shortened by at least one item, the reduced evidence of internal consistency is not surprising.

Table 3
*Goodness of Fit Indicators for Tested Models*

| Model | $\chi^2$ | df | $\chi^2$/df | RMR | TLI |
|---|---|---|---|---|---|
| Aspirations and Self-perceptions Models | | | | | |
| Independence | 7071.43 | 231 | 30.61 | .147 | .000 |
| One factor | 2342.10 | 209 | 11.21 | .046 | .655 |
| Two factors, correlated ($r$ = .763) | 2044.41 | 208 | 9.83 | .046 | .702 |
| Four factors, correlated | 1706.53 | 203 | 8.41 | .040 | .750 |
| Five factors, correlated | 961.04 | 199 | 4.83 | .033 | .871 |
| Five factors, complex, corr. | 742.24 | 193 | 3.85 | .027 | .904 |
| Conditions Models | | | | | |
| Independence | 21760.69 | 1176 | 11.69 | .161 | .000 |
| One factor | 6133.95 | 1127 | 5.44 | .034 | .746 |
| Eight factors, uncorr. | 13170.76 | 1127 | 11.69 | .151 | .389 |
| Eight factors, 1 higher order | 5932.85 | 1120 | 5.30 | .034 | .755 |
| 2 factors, correlated ($r$ = .963) | 6092.50 | 1126 | 5.44 | .034 | .748 |
| 3 factors, correlated | 6085.01 | 1124 | 5.41 | .034 | .748 |

*Note.* Correlation matrices, means, and standard deviations are available from the author. As the fit of the tested conditions models was generally quite poor, parameter estimates and standard errors are not provided and are also available from the author.

*Confirmatory Factor Analysis*

In an attempt to gather evidence of construct validity, the author used confirmatory factor analysis to fit various factor models to the data. Student responses were divided into two categories, the first including responses to items on the Aspirations and Self-Description scales (22 items) and the second including responses on the Conditions scales (49 items). Results of the various models are included in Table 3.

*Aspirations and self-description scales.* Several models were fit to the data for the four Aspirations and Self-description scales (i.e., Ambition, Inspiration, Enjoyment of Life, Achievement Motivation). In the first, items from all four scales loaded onto one general factor, resulting in a model with poor fit to the data. The second model allowed items from the Ambition and Inspiration scales to load onto one factor and the items from Enjoyment of Life and Achievement Motivation to load onto a second factor. This model also did not fit the data well, with a correlation between the two factors of .76. The third model included a separate factor for each set of items (i.e., the hypothesized model). Fit indices suggest that the model had an improved fit relative to the previous models but still did not fit the data well. After inspecting modification indices and exploratory factor analysis output, a fourth model was created in which three items, 15, 20, and 25, formed a fifth factor. This five factor model was associated with a significant improvement in fit, although standard benchmarks for model quality (i.e., TLI > .90) still had yet to be attained. After reanalysis of factor loadings, the five factor model was modified to include secondary loadings for Items 20, 78, 81, and 83. This model produced relatively good fit statistics, and corresponding loadings and factor correla-

Table 4
*Factor Loadings and Correlations for Five Factor Model of Aspirations Scales*

| Variable | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | SMC[a] |
|---|---|---|---|---|---|---|---|
| Ambition1 | 15 | | | | | .78 | .61 |
| Ambition2 | 17 | .47 | | | | | .22 |
| Ambition3 | 18 | .65 | | | | | .42 |
| Ambition4 | 23 | .65 | | | | | .43 |
| Ambition5 | 24 | .71 | | | | | .50 |
| Ambition6 | 25 | | | | | .84 | .71 |
| Inspiration1 | 14 | | .71 | | | | .51 |
| Inspiration2 | 16 | | | | .44 | | .19 |
| Inspiration3 | 19 | | .56 | | | | .31 |
| Inspiration4 | 20 | | .33 | | | .44 | .48 |
| Inspiration5 | 21 | | | | .57 | | .32 |
| Inspiration6 | 22 | | .65 | | | | .42 |
| AchMot1 | 77 | | | .53 | | | .28 |
| AchMot2 | 80 | | | .64 | | | .41 |
| AchMot3 | 81 | .43 | | | .25 | | .35 |
| AchMot4 | 83 | .16 | | | .21 | .12 | .16 |
| AchMot5 | 84 | | | .49 | | | .24 |
| Enjoy1 | 75 | | | | .75 | | .57 |
| Enjoy2 | 76 | | | | .72 | | .52 |
| Enjoy3 | 78 | .06 | | .30 | .32 | | .35 |
| Enjoy4 | 79 | | | .56 | | | .31 |
| Enjoy5 | 82 | | | .48 | | | .23 |

Correlations

| | | | | | |
|---|---|---|---|---|---|
| Factor 1 | 1.00 | | | | |
| Factor 2 | .36 | 1.00 | | | |
| Factor 3 | .69 | .49 | 1.00 | | |
| Factor 4 | .44 | .64 | .62 | 1.00 | |
| Factor 5 | .50 | .58 | .50 | .42 | 1.00 |

*Note.* Omitted loadings and correlations constrained to equal zero. All loadings statistically significant (i.e., $p < .01$) except for loading of Item 78 (Enjoy3) on Factor 1.
[a]SMC = Squared Multiple Correlation

tions are included in Table 4. All loadings are significant with the exception of the loading of Item 78 upon Factor One.

Based on the fifth Aspirations model, the 22 items from the four scales were reorganized as shown in Table 5. Measures of internal consistency were similar to those for the four hypothesized scales. The fifth factor includes items that represent student awareness of the importance of education and had a Cronbach's alpha value of .79. Since this scale has only three items, the relatively large alpha value is impressive. The remaining scales appear to represent Ambition, School Achievement Inspiration, Life Achievement Motivation (or General Life Inspiration), and Enjoyment in School and Life. The reorganization of scales suggests that students are not differentiating enjoyment in school from enjoyment in life but are making a distinction between school and life inspiration and also between ambition and the importance of schooling.

*Conditions scales.* The author achieved much less satisfying results when he subjected the Conditions data to

Table 5
*Interpretation of Five Factor, Correlated, Complex Aspirations Model Scales*

| Item | Item Text |
|---|---|
| Ambition (alpha = .73) | |
| *17* | I give little thought to my future. |
| 18 | I am looking forward to a successful career. |
| 23 | I have high goals and expectations for myself. |
| *24* | I don't expect very much of myself in the future. |
| *81* | I never make plans or set goals for myself. |
| School Inspiration (alpha = .71, w/o Item 20 alpha = .67) | |
| 14 | Most of the things I do in school I find enjoyable. |
| 19 | When I'm at school, time seems to fly by. |
| (20) | School is important to my life on a regular basis. |
| 22 | I find excitement in almost every class I attend. |
| Achievement Motivation (alpha = .72, w/o Item 78 alpha = .68) | |
| 77 | I like to be very good at what I do. |
| 80 | I feel I can do just about anything if I put my mind to it. |
| 84 | I can be very disciplined and push myself. |
| *79* | I am not interested in very many things. |
| 82 | I am often in a good mood. |
| (78) | I don't seem to succeed no matter what I do. |
| Enjoyment in School and Life (alpha = .75, w/o Item 78 alpha = .72) | |
| *16* | School causes a great deal of stress for me. |
| *21* | I find it hard to concentrate in classes. |
| *75* | I usually feel tired and bored. |
| *76* | I often have trouble getting motivated to do things. |
| (*78*) | I don't seem to succeed no matter what I do. |
| Importance of Schooling to the Future (alpha = .79, w/o Item 20 alpha = .80) | |
| 15 | What I learn in school will benefit my future. |
| 25 | Most of the things I learn in school are important to my future. |
| (20) | School is important to my life on a regular basis. |

*Note.* Italicized items are reverse scored. Items enclosed in parentheses (i.e., Items 20 and 78) have similar loadings on two factors and are included in both factors.

confirmatory factor analysis. One factor and hypothesized eight factor models fit the data poorly, with factor correlations in the latter case in excess of .90. A variety of two and three factor models also fit the data poorly, again with very large factor correlations (fit indices for the best fitting two and three factor models are included in Table 3).

*Second thoughts on the Aspirations scales.* After reviewing the results of the Aspirations scales analyses, the tendency for reverse-scored and nonreverse-scored items to cluster together was noted. A sixth Aspirations model was created in which two additional factors—Positively Worded and Negatively Worded—accounted for a possible method effect in the Achievement Motivation and Enjoyment scales. The fit statistics for this model are a slight improvement over previous models ($\chi^2[186] = 657.63$, $\chi^2/df = 3.54$, RMR = .027, TLI = .914) but the differences lack practical significance. In an attempt to account for a method effect more comprehensively, three additional models were fit to the Aspirations data. In the first, removal of nonsignificant and low factor loadings resulted in a modified five factor model. In this model, Enjoyment and Achievement Motivation items loaded onto their original factors, not the reorganized factors. The second model contained two correlated factors, one representing positively worded items and one for negatively worded items. The third model (Figure 1) contained all seven factors: five trait factors (Ambition, School Inspiration, Importance of Schooling, Achievement Motivation, and Enjoyment of Life) and two method factors (Positively Worded and Negatively Worded). Table 6 contains fit indices for these multitrait-multimethod models, and factor loadings, squared multiple correlations, and factor correlations are presented in Table 7.

Squared multiple correlations and fit statistics are substantially improved in the multitrait-multimethod model. The correlation between the method factors is large ($r$ = .72), suggesting that the method effect may be low to moderate in strength. The Achievement Motivation scale remains largely intact, as does the Enjoyment scale (with the addition of Items 16 and 21). For items on the third and fourth factors—Life Achievement Motivation and Enjoyment of Life—squared multiple correlations (i.e., an estimate of item variance explained by the factor structure) are considerably higher for the multitrait-multimethod model than for the simpler five factor model that does not include method factors. Squared multiple correlations for items on the three remaining factors are similar in both models, suggesting that the method effect is greater among item scores on the Life Achievement Motivation and Enjoyment of Life scales. Inspection of factor loadings also provides evidence of a greater method effect among these two scales.

Table 6
*Goodness of Fit Indicators for Tested Multitrait-Multimethod Models*

| Model | $\chi^2$ | df | $\chi^2$/df | RMR | TLI |
|---|---|---|---|---|---|
| Aspirations and Self-perceptions Models | | | | | |
| Independence | 7071.43 | 231 | 30.61 | .147 | .000 |
| Five trait factors, correlated | 895.45 | 197 | 4.55 | .030 | .880 |
| Two method factors, corr. | 1919.00 | 208 | 9.23 | .043 | .722 |
| Five trait factors, correlated, and Two method factors, corr. | 430.00 | 174 | 2.47 | .019 | .950 |

*Note.* Correlation matrices, means, and standard deviations are available from the author.

## Discussion

The major purposes of the revision of the *Student Aspirations Survey* were to shorten the length of the instrument without seriously detracting from its reliability and increase the construct validity of the scales. The results of this study provide evidence that progress was made toward both goals. The slight decrease in internal consistency is acceptable in light of the more complete student responses, and confirmatory factor analysis results suggest that the Aspirations scales, if slightly reorganized, have acceptable levels of construct validity in the presence of a small to moderate method effect. Educators should consider the method effect when interpreting results.

Results were less promising, however, for the Conditions scales. The poor fit of models to the Conditions data could be due to scores' lack of normality, but while the respectable root mean square residuals are evidence in support of this, similar distributions for the Aspirations and Self-description scale scores did not prevent the fitting of a good model for those data. A more likely culprit is the tendency for the responses to Conditions items to correlate very highly with one another. These correlations could result from students perceiving school climate conditions holistically rather than specifically. Given other evidence of validity associated with these scales (Plucker, 1996; Plucker & Quaglia, in press), educators and researchers should interpret these 49 items collectively. Expectedly, responses to the Conditions scales exhibit convincing evidence of reliability (alpha = .95) when considered as a group.

The next steps in the development of the *Student Aspirations Survey* should be the refinement of the new scale, Importance of Schooling, and additional validity studies. Evidence of criterion-related validity (both concurrent and predictive) has not been gathered and should be a high priority. A majority of aspirations research and intervention efforts proceed under the assumption that aspirations are content general (i.e., aspirations cut across content areas and are not content specific). However, common sense suggests that individuals' may have strong aspirations within one content area (e.g., science) while they hold very low aspirations in other areas (e.g., writing, political science). The content specificity of aspirations may be especially profound with respect to gender differences (Farmer et al., 1995). Researchers have begun investigating content generality-specificity issues in regard to general affect (Marsh & Yeung, 1996) and aspirations (Plucker & Quaglia, 1996), and additional research in this area may provide the most useful information for educators planning intervention efforts to increase student aspirations.

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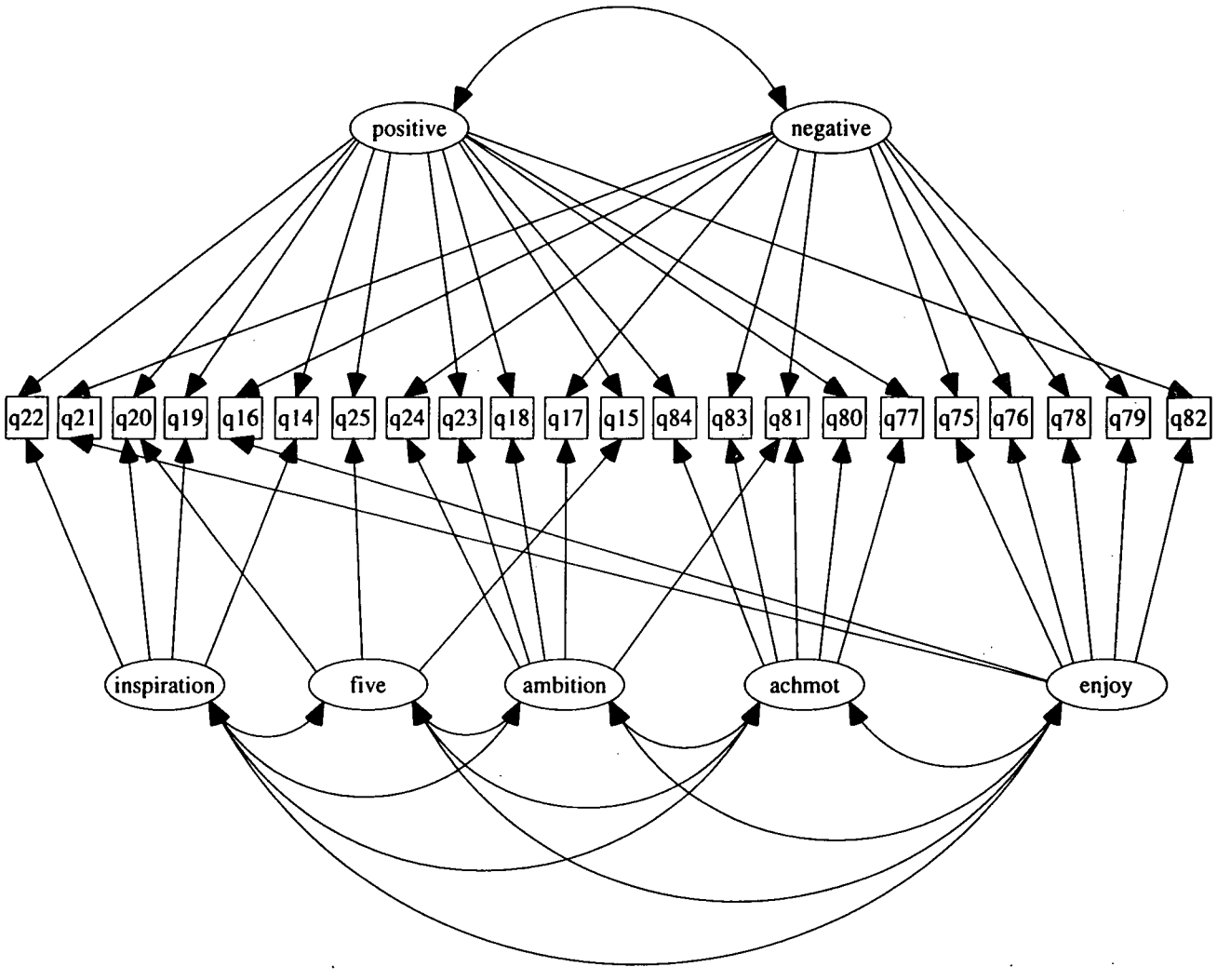


*Figure 1.* Multitrait-multimethod model of student aspirations and school climate perceptions as measured on the *Student Aspirations Survey*.

Table 7
*Factor Loadings and Correlations for Multitrait-Multimethod Model of Aspirations Scales*

| | | Trait Factors | | | | | Method Factors | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Item | 1 | 2 | 3 | 4 | 5 | Positive | Negative | SMC[a] |
| Ambition1 | 15 | | | | | .70 | .36 | | .62 |
| Ambition2 | 17 | .36 | | | | | | .32 | .23 |
| Ambition3 | 18 | .61 | | | | | .38 | | .51 |
| Ambition4 | 23 | .47 | | | | | .47 | | .44 |
| Ambition5 | 24 | .52 | | | | | | .50 | .52 |
| Ambition6 | 25 | | | | | .73 | .41 | | .70 |
| Inspiration1 | 14 | | .61 | | | | .34 | | .49 |
| Inspiration2 | 16 | | | | .40 | | | .24 | .22 |
| Inspiration3 | 19 | | .48 | | | | .29 | | .32 |
| Inspiration4 | 20 | | .26 | | | .37 | .43 | | .47 |
| Inspiration5 | 21 | | | | .40 | | | .43 | .32 |
| Inspiration6 | 22 | | .62 | | | | .27 | | .45 |
| AchMot1 | 77 | | | .25 | | | .54 | | .36 |
| AchMot2 | 80 | | | .19 | | | .74 | | .58 |
| AchMot3 | 81 | .14 | | .07 | | | | .62 | .41 |
| AchMot4 | 83 | | | .28 | | | | .40 | .24 |
| AchMot5 | 84 | | | .12 | | | .49 | | .25 |
| Enjoy1 | 75 | | | | .62 | | | .47 | .60 |
| Enjoy2 | 76 | | | | .48 | | | .52 | .49 |
| Enjoy3 | 78 | | | | .15 | | | .63 | .42 |
| Enjoy4 | 79 | | | | .01 | | | .62 | .38 |
| Enjoy5 | 82 | | | | .19 | | .46 | | .25 |
| Correlations | | | | | | | | | |
| Trait Factor 1 | | 1.00 | | | | | | | |
| Trait Factor 2 | | .14 | 1.00 | | | | | | |
| Trait Factor 3 | | .43 | .16 | 1.00 | | | | | |
| Trait Factor 4 | | .07 | .65 | .03 | 1.00 | | | | |
| Trait Factor 5 | | .34 | .46 | .52 | .29 | 1.00 | | | |
| Method Factor 1 | | | | | | | | 1.00 | |
| Method Factor 2 | | | | | | | | .77 | 1.00 |

*Note.* Omitted loadings and correlations constrained to equal zero. All loadings statistically significant (i.e., $p < .01$) except for loading of Item 79 (Enjoy4) on Factor 4 and Item 81 (AchMot3) of Factor 3.
[a]SMC = Squared Multiple Correlation

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