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THE STUDENT ASPIRATIONS SURVEY: ASSESSING STUDENT EFFORT AND GOALS

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Recent theory and research on intellectual achievement suggest that a seldom-examined factor, student aspirations, plays an integral role in students' educational accomplishments. The staff of the National Center for Student Aspirations developed the Student Aspirations Survey to aid educators in their efforts to address aspiration issues at the secondary level. After extensive piloting, a 98-item instrument with 13 scales was administered to students from four New England high schools representing both rural and suburban areas. Results provide evidence of sufficient internal consistency for group administration, but confirmatory factor analyses suggest that the factor structure can be improved.

In an era of educational reform, techniques and agendas for educational improvement address a myriad of factors that may influence student achievement. One characteristic that is not generally recognized or studied is student aspirations (Quaglia, 1989). The concept of student aspirations is found in many district mission statements, school goals, reform agendas, and student-learning outcomes, but researchers rarely study student aspirations and the conditions under which high aspirations are fostered within schools. A first step in studying aspirations at a schoolwide level is the development of a theoretically and psychometrically sound instrument that is feasible for school personnel to administer and interpret.

Over the past decade, the University of Maine's direct involvement in studying student aspirations (University of Maine, 1994) led to the estab-

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lishment of the National Center for Student Aspirations. Based on a solid body of theory and research (e.g., Cobb, McIntire, & Pratt, 1989; Kirsch, 1986; Lewin, Dembo, Festinger, & Sears, 1944), researchers at the center conceptualize aspirations as having two distinct dimensions, namely, inspiration and ambitions. Inspiration reflects the individual's willingness to engage in activities in the present for both their inherent value and future worth, whereas ambitions represent the individual's ability to identify and set goals for the future.

Researchers at the center have identified eight conditions that support the development of high levels of inspiration and ambitions in students (University of Maine, 1994). These conditions, which have both organizational and personal dimensions, include achievement, belonging, curiosity, empowerment, excitement, mentoring, risk taking, and self-confidence. These conditions provide an interpretive template that frames how students can be viewed and how schools can positively support and intervene, where necessary, in the development of student aspirations.

To help schools comprehensively address the development of student aspirations, an instrument was developed to measure the level of student aspirations and the presence of the eight conditions. The process began with a series of four day-long symposiums involving aspirations project staff, teachers, and administrators. A staff member described the aspirations constructs and the eight conditions, after which the educators identified behaviors and attitudes observed in their day-to-day contact with students who were representative of each construct and condition. Participants also suggested phrasing for questions so that they would be understandable to students.

After the completion of the symposia, project staff refined the questions and developed a pilot instrument. The initial 130-item instrument was piloted at three rural and suburban New England high schools and involved approximately 2,100 students. After administration, researchers interviewed a randomly selected sample of students ($n = 20$) to determine the extent to which student interpretation of questions matched the researchers' intent. Results from the pilot administration and exit interviews were used to produce a revised instrument with 98 items. Also, a third aspirations scale representing the opposite of inspiration (i.e., separation) was added to facilitate survey interpretation by school personnel. Based on additional theoretical development of the aspirations construct (e.g., Locke & Latham, 1990; Quaglia & Cobb, 1996), researchers added two self-perception scales, achievement motivation and general enjoyment of life, to the instrument.

Method

The version of the Student Aspirations Survey used in this study consisted of 13 scales: 3 aspirations scales, 2 self-perception scales, and 8 conditions scales. When responding to items that constituted the scales, students re-

sponded from 1 (*strongly agree*) to 4 (*strongly disagree*). Sixteen items were reversed coded, with most of these items in the separation and general enjoyment of life scales. Preceding the items for the 13 scales, students responded to 7 items dealing with the amount of time spent in out-of-school activities (e.g., homework, working part-time, spending time with family). The possible responses for these 7 items were 0, 1-5, 6-10, 11-15, 16-20, and 21 or more hours per week.

Sample

The survey was distributed to the student bodies of four rural/suburban high schools in four New England states. All four schools were associated with the Office of School College Relations supported by the New England Association of Schools and Colleges. Several of the schools had 7th and 8th grades, but due to the relatively small number of 7th-grade students, sampled data from 7th-grade respondents were excluded from the reported analyses. The remaining sample of 1,674 students was roughly gender (49.1% female) and grade balanced (19.6% 8th, 19.6% 9th, 21.9% 10th, 22.0% 11th, 16.9% 12th).

Data Analysis

A variety of statistical procedures were used to analyze the data: calculation of measures of central tendency and departure from normality to analyze scale score distributions; estimates of internal consistency via Cronbach's alpha; two sets of confirmatory factor analyses to gather evidence of construct validity; and a regression of scale scores on student age to examine the relationship between student age and scale means. To facilitate the 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 interscale comparisons.

Results

Students responded similarly to the seven items regarding how they spent their time out of school: Most responses were in the 1-5 hours category. Nearly 87% of students reported spending 0 to 10 hours per week on homework; 69.9% spent the same amount of time with friends. Similarly, large percentages were found for each of the remaining activities: sports and hobbies, 67.1%; pleasure reading, 90.3%; television, video games, and music, 69.0%; working part-time, 70.9%; and spending time with family, 72.0%.

Analysis of means and distributions for the 13 scales (see Table 1) indicated positive skewness of the data for most scales, suggesting that students

Table 1
Descriptive Statistics for Self-Description Questionnaire (SDQ-II) Scales

Scale	*M*	SE *M*	*SD*	Kurtosis	SE Kurtosis	Skewness	SE Skewness	*n*	Cronbach's α
Aspirations									
Inspiration	2.55	.02	.55	−.212	.166	.240	.083	866	.80
Ambition	1.71	.02	.57	.625	.168	.744	.084	848	.69
Separation	2.53	.02	.61	−.406	.172	.135	.086	808	.77
Self-perceptions									
Achievement motivation	1.89	.02	.51	.034	.199	.284	.100	600	.80
General enjoyment	2.15	.02	.55	−.070	.215	.254	.108	516	.84
Conditions									
Achievement	2.03	.02	.44	1.361	.163	.306	.081	902	.78
Belonging	2.24	.02	.51	.958	.173	.523	.086	801	.79
Curiosity	2.12	.02	.46	1.006	.187	.176	.094	681	.76
Empowerment	2.30	.02	.47	.267	.186	.087	.093	688	.72
Excitement	2.41	.02	.55	.068	.190	.266	.095	658	.80
Mentoring	2.32	.02	.56	.521	.206	.355	.103	561	.84
Risk taking	2.18	.02	.46	.843	.187	.262	.094	679	.73
Self-confidence	2.21	.02	.50	.192	.175	.223	.088	780	.76

reported moderately high levels of student aspirations and perceptions of school climate conditions. Missing data depleted sample sizes, especially for the self-perception scales, which are drawn from items near the end of the instrument.

Reliability

Cronbach's alpha was calculated as an estimate of internal consistency for scores on each of the 13 scales. Alpha ranged from .69 (ambition) to .84 (enjoyment of life) with a mean of .78. Alpha was also calculated separately for scores of males (range = .71 to .85, mean α = .78, median α = .79), females (range = .65 to .85, mean α = .76, median α = .78), students age 12 to 14 (range = .68 to .84, mean α = .77, median α = .76), students age 15 to 16 (range = .67 to .86, mean α = .78. median α = .78), and students age 17 and older (range = .69 to .86, mean α = .78, median α = .76). In general, scores for enjoyment of life and mentoring had the largest alpha values, and scores for ambition had the smallest alpha values.

Confirmatory Factor Analysis

To increase ease of interpretation, items were split into two groups for confirmatory factor analyses (CFAs), and items within each group were paired

Table 2
Goodness-of-Fit Indicators for Tested Models

Model	χ^2	*df*	χ^2/df	GFI	AGFI	BBI	TLI
Aspirations and self-perceptions models							
Null	11,356.89	406	27.97	.305	.256		
1 factor	4,484.10	378	11.86	.718	.675	.605	.597
2 factors, correlated	3,360.94	376	8.94	.781	.746	.704	.706
5 factors, correlated	2,405.54	365	6.59	.872	.848	.788	.793
Conditions models							
Null	16,228.41	406	39.97	.165	.105		
1 factor	3,858.26	378	10.21	.749	.711	.764	.762
8 factor, uncorrelated	14,093.05	386	36.51	.488	.423	.089	.132
8 factor, correlated	3,553.90	371	9.58	.776	.738	.780	.781
5 factor, correlated	3,681.74	372	9.90	.771	.732	.773	.772
2 factor, uncorrelated	7,732.06	379	20.40	.706	.662	.524	.502
2 factor, correlated	5,762.78	378	15.25	.722	.680	.645	.634

Note. Correlation matrixes, means, and standard deviations are available from the first author. As the fit of the tested models was generally quite poor, parameter estimates and standard errors are not provided; these are also available from the first author. GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; BBI = Bentler-Bonett Index; TLI = Tucker-Lewis Index.

to simplify analyses: Group 1 included the three aspirations and two self-perception scales (29 pairs of items), and Group 2 included the eight conditions scales (also 29 pairs of items). Although this approach is not ideal, we believe that it allowed us to draw more constructive conclusions from these exploratory analyses than we would have achieved via factor analysis of 116 items simultaneously. In future psychometric integrity studies, the latter approach will be taken.

A variety of first-order models were tested for both the aspirations/self-perception data and the conditions data. Goodness-of-fit statistics (Table 2) suggested that the correlated, eight-factor model provided the superior fit for the conditions data and that the correlated, five-factor model was most appropriate for the aspirations/self-perception data. However, these best-fitting models provided, at best, marginal fit for the aspirations data and poor fit for data drawn from the conditions scales.

Use of modification-of-fit indexes led to models with improved yet still insufficient fit. The high degree of missing data may partially explain the low fit indexes, but the factor intercorrelations were quite high for both sets of data (ranging from .81 to .93 for the aspirations model and .87 to 1.00 for the conditions model), suggesting that the impact of missing data on model fit is moot given the lack of distinction among the first-order factors.

Impact of Age

The relationship between age and scores on the Student Aspirations Survey scales was investigated using multiple regression, with age as the criterion variable and the 13 scales as predictor variables. The resulting analysis did not yield significant prediction ($F = .84$, $p = .62$, $R^2 = .18$, $R^2_{adj} = -.04$), providing evidence that the relationship between student age and scale scores is inconsequential.

Discussion

In conclusion, the survey appears to be a promising instrument for measuring the aspirations of high school students, but several specific revisions are necessary. The results of this psychometric integrity study will facilitate the preparation of future versions of the aspirations instrument. Shortening the overall length may decrease the relatively high percentage of missing data, and expanding the scale used with the time questions will allow for more detailed analysis of how students spend their out-of-school time. Across gender and age levels, evidence of score reliability was within acceptable levels for group administration. However, the addition of items to the ambition scale would probably increase estimates of internal consistency for that scale. Further analysis of items on the scales may allow for the removal and replacement of troublesome items, and a few items from each scale could be reversed coded in an attempt to remove any positive response bias (very few items were reverse coded in the original version of the instrument). These suggested revisions are currently being made to the instrument, and resulting psychometric studies will be used as the basis of additional revisions.

References

Cobb, R. A., McIntire, W. G., & Pratt, P. A. (1989). Vocational and educational aspirations of high school students: A problem for rural America. *Research in Rural Education, 6*(2), 11-16.

Kirsch, I. (1986). Early research on self-efficacy: What we already know without knowing we knew. *Journal of Social and Clinical Psychology, 4*, 339-358.

Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. M. Hundt (Ed.), *Personality and the behavior disorders* (pp. 333-378). New York: Roland.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice Hall.

Quaglia, R. J. (1989). Student aspirations: A critical dimension in effective schools. *Research in Rural Education, 6*, 7-10.

Quaglia, R. J., & Cobb, C. D. (1996). Toward a theory of student aspirations. *Journal of Research in Rural Education, 12*, 127-132.

University of Maine. (1994). *Student aspirations: A decade of inquiry, 1984-1994*. Orono: Center for Research and Evaluation, College of Education, University of Maine.