

VALIDITY AND RELIABILITY REPORT FOR SNAPSHOT SURVEY OF SCHOOL EFFECTIVENESS FACTORS

The Snapshot Survey of School Effectiveness Factors is designed to assess the perceptions of teachers and administrators within a school regarding 11 factors that have been drawn from research literature over the last 30 years. Those 11 factors are listed in Figure 1.

Figure 1. School-, Teacher-, and Student–Level Factors

General Category	Factor
School-Level	Guaranteed and viable curriculum
	Challenging goals and effective feedback
	Parent and community involvement
	Safe and orderly environment
	Collegiality and professionalism
Teacher-Level	Instructional strategies
	Classroom management
	Classroom curriculum design
Student-Level	Home environment
	Learned intelligence and background knowledge
	Motivation

The Snapshot Survey contains 66 items organized into clusters that address each of the 11 factors. This report describes the validity and reliability studies that have been conducted on the Snapshot Survey. The study subjects were 2,451 teachers representing grades K–12.

Validity

Three types of validity were addressed relative to the Snapshot Survey: face validity, content validity, and construct validity.

Face validity refers to the extent to which the items in an instrument actually address the important aspects of the domain the instrument is intended to assess. Stated differently, each question or item must have a logical link to some important aspect of the domain being addressed. In this case, that domain is the 11 factors listed in Figure 1. The items on the Snapshot Survey were taken directly from the description of the 11 factors in the book *What Works in Schools: Translating Research into Action* (Marzano, 2003). Consequently, by definition, the instrument has face validity. However, whether the 11 factors in Figure 1 thoroughly account for the factors important to school improvement is an entirely different question. The argument for the content validity of those factors is addressed in *What Works in Schools: Translating Research into Action*.

Content validity refers to the extent to which the items in an instrument address the full range of the important aspects of the domain being addressed. In this case, that domain is again the 11 factors listed in Figure 1. Because the items in the Snapshot Survey address every aspect of the 11 factors as described in *What Works in Schools*, the instrument, by definition, has face validity. However, whether the 11 factors have content validity relative to the domain of school effectiveness is another matter. Again, the argument for the content validity of the 11 factors is addressed in *What Works in Schools*.

Construct validity refers to the extent to which the items in an instrument address the underlying latent factors within a domain. The typical procedure for establishing construct validity is to conduct a factor analysis on the items of the instrument. For the Snapshot Survey, a principal component factor analysis with a varimax rotation was conducted. The number of factors with eigenvalues greater than 1.00 is reported in Figure 2.

Figure 2. Factors with Eigenvalues Greater than 1.00

Factor	Eigenvalue	% Variance Explained	Cumulative %
1	19.271	29.65	29.65
2	4.01	6.16	35.81
3	3.66	5.63	41.44
4	1.87	2.88	44.32
5	1.75	2.70	47.02
6	1.72	2.64	49.66
7	1.43	2.20	51.56
8	1.37	2.10	53.96
9	1.28	1.97	55.92
10	1.18	1.81	57.73
11	1.14	1.76	59.49
12	1.07	1.65	61.14
13	1.01	1.56	62.70

Figure 2 shows that 13 factors had eigenvalues greater than 1.00. This is a usual criterion for considering a factor to be significant enough to represent a true latent trait. In this case, the ideal solution would have produced 11 factors—one for each factor represented in Figure 1. Examination of the factor loading matrix indicated that the two additional factors appeared to be constituted by one general factor and one specific one. The general factor was the first listed in Figure 2. All items had relatively high loadings on this factor, which is common when a principal component extraction method is used. The second additional factor was found within instructional strategies. That is, the instruction strategies factor listed in Figure 1 appeared to fall

into two categories as addressed by the Snapshot Survey. The other factors corresponded fairly well to those listed in Figure 1.

Reliability

The reliability of the Snapshot Survey was addressed by computing two types of reliability coefficients: a split-half reliability coefficient and multiple Cronbach’s alpha coefficients. The split-half reliability coefficient is appropriate when an instrument is intended to assess more than one factor. Stated differently, split half reliability is appropriate when an instrument is not unidimensional. This is certainly the case with the Snapshot Survey. The split-half reliability was .91.

Cronbach’s alpha is appropriate when an instrument is unidimensional. In this case, the 66 items were designed to measure 11 factors. The alpha coefficients for each factor are listed in Figure 3.

Figure 3. Alpha Coefficients for the 11 Factors

Factor	Alpha Coefficient
Guaranteed and viable curriculum	.67
Challenging goals and effective feedback	.60
Parent and community involvement	.56
Safe and orderly environment	.63
Collegiality and professionalism	.62
Instructional strategies	.74
Classroom management	.75
Classroom curriculum design	.71
Home environment	*
Learned intelligence and background knowledge	.62
Motivation	.72

*Not enough items to compute an alpha coefficient.

Figure 3 indicates that the alpha coefficients were systematically lower than the split-half coefficient. This might be because only a few items addressed each of the 11 factors.

Further studies are being conducted on the Snapshot Survey of School Effectiveness Factors.

Reference

Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.