

Technical Report on
Developmental Skills, Supports, & Challenges
2013 Minnesota Student Survey

*This is a draft version – does not include results
of the analyses of differential item functioning.*

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January 12, 2016

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2013 Minnesota Student Survey Technical Report

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Developmental Skills, Supports, & Challenges Measurement Models

2013 Minnesota Student Survey Technical Report

The Minnesota Student Survey

The Minnesota Student Survey (MSS) is designed by an interagency team from the MN Departments of Education, Health & Human Services, Public Safety, and Corrections to monitor important trends and support planning efforts of the collaborating state agencies and local public school districts, as well as youth serving agencies and organizations.

Beginning in 2013, the MSS is administered every three years to students in grades 5, 8, 9, and 11. All operating public school districts are invited to participate. The study design is correlational, thus no causal arguments can be made from these data

A number of Developmental Assets and contextual challenges youth face were identified in subsets of items from the MSS, based on close attention to the Developmental Asset Framework of Search Institute and the more general ecological model of youth development described above. Components of the Developmental Asset Profile (DAP, from Search Institute) were introduced in 2013.

Positive Youth Development & Developmental Assets

There are perhaps six essential principles regarding positive youth development about which there is broad consensus (Benson, Scales, Hamilton, & Sesma, 2006), including:

1. youth have the inherent capacity for positive development;
2. positive development is enabled through relationships, contexts, and environments that nurture development;
3. positive development is enhanced when youth participate in multiple meaningful relationships, contexts, and environments;
4. all youth benefit from these opportunities, the benefits of which generalize across gender, race, ethnicity, and family income;
5. community is a critical delivery system for positive youth development; and
6. youth themselves are major actors in their own development, serving as a central resource for creating the kinds of relationships, contexts, environments (ecologies), and communities that facilitate optimal development.

The developmental contexts from an ecological perspective where youth are located interact with the inherent capacity of youth to grow and thrive; their developmental strengths, skills, competencies, values and dispositions; and two related aspects of developmental success, the reduction of high-risk behaviors and the promotion of healthy well-being or thriving (Benson, et al., 2006). The work in this area is exploring many aspects of context, all which might influence positive youth development, including success in school and beyond – providing useful information for strong policy development and prevention and intervention programming.

More generally, the field of youth development has welcomed the positive psychology movement – embracing a positive vision of youth potential (Damon, 2004) and recognizing the dynamic relations between youth and multiple levels of the ecology of human development, including self, family, peers, school, community, and broader cultures (Bronfenbrenner, 1979; Lerner, 2002).

The concept of developmental assets comes from a line of research guided by the work of Benson (1990, 2002, 2006) and others at Search Institute who created a theory-based framework of developmental assets linking features of ecologies (external assets) and personal skills and capacities (internal assets), guided by the hypothesis that these assets form developmental building blocks that prevent high-risk behaviors and enhance thriving.

This report applies the Development Asset framework and identifies relevant challenges facing youth to extract information from the Minnesota Student Survey (MSS). With this information, we are able to develop community-based profiles, here, addressing differences due to grade, race, and ethnicity.

The Minnesota Youth Development Research Group¹ has conducted research with the Minnesota Student Survey (MSS) over the past decade employing MSS data from 2001 to 2010. These studies have contributed to our knowledge base regarding out-of-school-time activities, risk factors, and noncognitive or social-emotional developmental skills. Some of the earlier reports were submitted to the Applied Research Collaborative on Youth Development, Extension Service at the University of Minnesota. Most of the reports have been presented at the annual meetings of the American Educational Research Association and the National Council on Measurement in Education (see the Appendix for a list of papers).

The 2013 MSS underwent a relatively major revision, including more information on student background and demographics, and more information regarding school-based experiences and developmental skills, what some have called developmental assets or social-emotional skills. These items were the basis for proposing a new set of measures including developmental skills, supports, and challenges faced by MN students. They include:

<i>Developmental Skills</i>	<i>Developmental Supports</i>	<i>Developmental Challenges</i>
1. Commitment to Learning	1. Empowerment	1. Bullying
2. Positive Identity	2. Supported	2. Bullied
3. Social Competence	3. Teacher/School Support	3. School Violence
		4. Mental Distress
		5. Family Violence

Through preliminary presentations of student profiles on these skills, supports, and challenges, and associated school-related information from the 2013 MSS, educators, school leaders, community leaders, and researchers see promise in the value of reporting on these measures at the state, district, and school levels. In addition, these measures and related information have been presented to members of the MSS Interagency Team with very positive responses and encouragement to pursue further investigations using the measures.

In concordance with the professional standards² for test design and score use, this *Technical Report* is provided to describe relevant methods of constructing each measure and the quality evidence gathered to defend score interpretation and use.

Note: Additional analyses will be completed for the final version of this report, including measurement invariance analyses across racial/ethnic subgroups.

¹ Directed by Michael C. Rodriguez, Professor of Quantitative Methods in Education, Department of Educational Psychology, College of Education & Human Development, University of Minnesota.

² American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing*. Washington DC: American Psychological Association.

Psychometric Methods

This report includes a review of the measurement models for several proposed measures of developmental skills, supports, and challenges from the 2013 Minnesota Student Survey.

Based on the positive youth development research of Search Institute and many others, and three scales adopted from the Developmental Asset Profile (DAP, Search Institute), as well as several prominent challenges facing youth that were featured in the 2013 MSS, several proposed measures were identified and tested for model-data fit. In some cases, as with the DAP, measures were prespecified – for others, a series of expert and researcher reviews of items and exploratory factor analyses were evaluated. The evidence that supports the reporting of resulting scores is provided through Confirmatory Factor Analysis (CFA) of each proposed measure, which indicates the extent to which the proposed skills, supports, and challenges as measured with the MSS fit the observed data (responses). The CFAs, completed with Mplus³, provide three pieces of relevant evidence:

1. Model-Data fit information, regarding the consistency of the meaning and stability of the scale as defined by the MSS items;
2. Item-Factor loadings, which indicates the extent to which each item contributes to the intended measures; and
3. Correlations among measures that are multidimensional, which provides evidence of the relative independence of each score.

Three measures of model fit provide different aspects of fit, including the root mean-squared error of approximation (RMSEA), the extent to which the model fits reasonably well in the population; comparative fit index (CFI), the relative fit to a more restricted baseline model; and the Tucker-Lewis index (TLI), which compensates for the effect of model complexity. It is generally agreed that multiple indicators of fit should be examined. The general criteria for Model-Data fit are as follows⁴.

Model fit is indicated by:

RMSEA < .05 is Good Fit;	RMSEA < .08 is Adequate Fit
CFI > .95 is Good Fit;	CFI > .90 is Adequate Fit
TLI > .95 is Good Fit;	TLI > .90 is Adequate Fit

We adopt a relatively liberal guideline for assessing fit to suggest the use of a measure holds promise – we strive to achieve adequate fit by at least one indicator. Most measures achieved adequate fit to support group-level interpretation of results and more than enough fit to support the use of these measures for research purposes (investigating correlates and associations to other important student characteristics and educational outcomes). One proposed measure that failed to achieve minimal fit regarded Sense of Safety. It was dropped from further consideration.

³ Muthén, L.K., & Muthén, B.O. (2012). *Mplus*. (Version 7). [Software program]. Los Angeles, CA: Authors.

⁴ Brown, T.A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford.

Scaling and Scoring

Following evaluation of fit, the Rasch measurement model was used to calibrate items with Winsteps 3.74⁵. As a latent-trait model, the assumption is that students' level of a trait causes their responses to the relevant items. Through the response-rates to item response options and response patterns across items, the Rasch model estimates probabilities of responses to items. This process estimates the location of each item on the underlying trait – whether a certain response to an item (given the item's response options) requires a low or high level of the trait.

Each measure is scaled around zero, generally ranging from -5 to +5 (much like a standardized score). The location of the average item response defines the zero point on the Rasch score scale (technically in the logit or logistic metric). Once item responses are located on this scale, persons can then be located on the trait scale as defined by the items, based on the likelihood of their trait level given their responses to the items with known (fixed) locations on the scale.

As an Item Response Theory model, several benefits support MSS scoring. First, the model accommodates missing item responses. This supports scoring some skills, supports, and challenges where certain items are not administered to 5th grade students – providing a means to score all students on the same scale with some missingness. However, we employed a strict response-rate requirement to generate scores; typically students must respond to all or all but one item to receive a score. Once the items were calibrated, student responses were scored. The item location on the trait was fixed in the Winsteps analysis and scores were generated. This model will allow us to put future administrations of these items on the same scale and evaluate the stability of measurement over time, since item parameters are essentially known.

As one check for sensitivity to grade, each measure was first scaled with students from grades 8, 9, and 11; items parameters were fixed and used to score students in grade 5. For nearly all measures, analysis of item fit indicated that the item calibrations from older students worked well for grade 5 students. Only one item for the measure of Positive Identity functioned differently for grade 5 students – item 60a, regarding feeling in control of life and future. It seems reasonable that this might function different for younger versus older students. Upon comparison of common (concurrent) scaling and anchoring this item to the scale of older students, no discernable difference was detected in final Rasch scaled scores.

Because the Rasch scale is arbitrary and centered at zero, the scores have been transformed to support interpretation. The midpoint of the response scale was transformed to be equal to 10 for each measure. For example, items using Strongly Agree to Strongly Disagree have a midpoint between agree-disagree. For items ranging from None of the Time to All of the Time, the midpoint is about “half of the time.” For each measure, a score of 10 is the midpoint of the response scale, making it a moderate level of the skill, support, or challenge. This is done through the Test Characteristic Curve produced by the Rasch analysis – (tables are provided below). All skills, supports, and challenges are scaled so that higher values indicate more of the skill, support, or challenge. Because of the transformation, the scores generally range from 5 to 15, although they can range beyond this.

⁵ Linacre, J.M. (2010). *Winsteps* (Version 3.70.0) [Computer Software]. Beaverton, Oregon: Winsteps.com.

Interpretation of Developmental Skills & Supports

Developmental Skills

Commitment to Learning

student engagement in class, preparation for learning, time spent on homework, and being achievement oriented; being a student is an important role at this time – generally caring about school.

Positive Identity

having a sense of control of one's life, feeling good about self and future, dealing well with disappointment and life's challenges, and thinking about one's purpose in life.

Social Competence

the abilities to say no to dangerous/unhealthy things, build friendships, express feelings appropriately, resist bad influences, resolve conflicts without violence, accept differences in others, and recognize the needs and feelings of others.

Developmental Supports

Empowerment

having a sense of safety at home, at school, and in the neighborhood; feeling valued; being included in family roles; and having responsibilities

Supported

being able to talk with mothers (if available) and feeling cared for by parents, other adult relatives, friends, adults at school, and adults in the community.

Teacher/School Support

the perception that adults at school treat students fairly and listen to students; that youth feel cared for by teachers at school.

Interpretation of Developmental Challenges

Developmental Challenges

Bullied

student experiences as a victim of bullying, including being harassed because of race, religion, gender, sexual orientation, disabilities, physical appearance, through social media, or in person in relational or physical ways. The focus here is on the prior 30 days of school from MSS administration (late-winter).

Bullying

student experiences as a perpetrator of bullying, such as physical assault or fighting, threatening others, spreading rumors, making inappropriate jokes or comments, or excluding others from friends and activities. The focus here is on the prior 30 days of school from MSS administration (late-winter).

School Violence

being the victim of theft or property damage, or threats or injury from others with a weapon; carrying a weapon on school property; and direct experience with drug trafficking in school. The focus here is on the prior 30 days of school from MSS administration (late-winter).

Mental Distress

involves significant emotional, behavioral, and mental health problems, including feeling lonely, sad, depressed, or hopeless; having trouble sleeping; feeling anxious, tense, or nervous; getting upset or distressed when reminded of the past, and having suicidal thoughts.

Family Violence

the presence of alcohol or drug use in the family and verbal, physical, or sexual abuse from adults in the family.

Standard Setting: Defining Equipped

One particular use of the developmental skills is to support the efforts of Generation Next, the local Strive program to close the achievement gap in St. Paul and Minneapolis. At the time of the writing of this technical report, Generation Next was considering the adoption of the three developmental skill areas to benchmark and monitor progress among 8th grade students, including Commitment to Learning, Positive Identity, and Social Competence. The language adopted for this effort is “to be equipped for learning.” In an effort to define the level of developmental skills needed to be considered equipped for learning, the following process was used to set cut-scores on each measure.

The response scales student use to respond to the relevant items use one of the four sets of options:

- A. Strongly Disagree to Strongly Agree
- B. None of the time to All of the time
- C. Not at all or Rarely to Extremely or Almost Always
- D. Yes or No

To be equipped on a skill, students must respond at a level of Agree to Strongly Agree, Very or Often to Extremely or Almost Always, Most of the time to All of the time, or Yes, on average. That is, since most of the items use a 4-point scale, students must respond at the level of 3 on average. This is accomplished by adding up the points on the items in raw-score points and translating this through the Test Characteristic Curve produced by the Rasch measurement model (this associates raw scores to Rasch scale scores). The Test Characteristic Curve tables used to translate the average (mid-point) raw score to Rasch scale score are provided in the tables following this section.

The point on the Rasch scale score associated with the raw-score associated with the Equipped level response (generally a 3 out of 4) is defined as the Equipped cut score. This is then transformed for each developmental skill to an indicator variable for each developmental skill:

0 = Not Equipped

1 = Equipped

In this sense, to be equipped means that, on average, the student

- recognizes characteristics associated with the developmental skill as being very much or extremely like them;
- agrees or strongly agrees with values, behaviors, and characteristics defining each skill;
- engages in relevant skill-based behaviors most or all of the time.

We find that being equipped is strongly associated with a number of relevant outcomes and behaviors, as reported in the MSS. These are reported in the section on Descriptive Statistics and Associations.

COMMITMENT TO LEARNING CFA

MODEL: CtL BY Y18 Y19 Y20 Y21a Y21b Y21c Y31a Y62br ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.081	
90 Percent C.I.	0.080	0.082
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.943
TLI	0.921

STANDARDIZED MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
CTL	BY				
	Y18	0.793	0.002	459.874	0.000
	Y19	0.746	0.002	412.521	0.000
	Y20	0.393	0.003	144.733	0.000
	Y21A	0.349	0.003	117.904	0.000
	Y21B	0.645	0.002	314.142	0.000
	Y21C	0.664	0.002	341.068	0.000
	Y31A	0.405	0.003	159.060	0.000
	Y62BR	0.505	0.004	140.043	0.000

NOTE: The model fits well. Item Y62b is administered to Grades 8-11 only. It was reverse coded to match the direction of the other items. Concurrent calibration was used to scale all grades simultaneously. Scores are provided for 5th grade students responding to all 7 items administered to 5th grade and for older students responding to 7 of the 8 items administered in those grades.

POSITIVE IDENTITY (DAP) CFA

MODEL: PosId BY Y60a Y60b Y60f Y60g Y60h Y60n ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.162	
90 Percent C.I.	0.161	0.164
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.952
TLI	0.920

STANDARDIZED MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
POSID	BY				
	Y60A	0.691	0.002	436.320	0.000
	Y60B	0.767	0.001	577.109	0.000
	Y60F	0.833	0.001	705.136	0.000
	Y60G	0.712	0.002	466.611	0.000
	Y60H	0.821	0.001	696.943	0.000
	Y60N	0.498	0.002	221.641	0.000

Note: CFI indicates good fit; TLI indicates adequate fit; RMSEA is weak, possibly due to variation in item-factor loadings. Fit is degraded slightly when removing Y60n, the weakest loading item. This is a DAP scale so it remains intact. Positive Identity included one item that did not fit grade 5 as well as expected - Y60G (dealing with disappointment), indicating that for 5th grade students, this item requires more positive identity to result in positive responses from students; however, this small effect made no discernable difference in resulting trait scores. Scores are provided for students responding to all 6 items.

SOCIAL COMPETENCE (DAP) CFA

MODEL: SoComp BY Y60c Y60d Y60e Y60i Y60j Y60k Y60m Y60q ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.133	
90 Percent C.I.	0.132	0.134
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.934
TLI	0.908

STANDARDIZED MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SOCOMP	BY				
	Y60C	0.717	0.002	430.611	0.000
	Y60D	0.643	0.002	355.263	0.000
	Y60E	0.729	0.001	490.467	0.000
	Y60I	0.739	0.001	512.000	0.000
	Y60J	0.783	0.001	566.776	0.000
	Y60K	0.735	0.001	501.387	0.000
	Y60M	0.645	0.002	324.524	0.000
	Y60Q	0.647	0.002	355.650	0.000

Note: CFI and TLI indicate adequate fit; RMSEA is weak. Scores are produced for students who respond to at least 7 of the 8 items.

POSITIVE IDENTITY & SOCIAL COMPETENCE CFA

MODEL: PosId BY Y60a Y60b Y60f Y60g Y60h Y60n ;
 SoComp BY Y60c Y60d Y60e Y60i Y60j Y60k Y60m Y60q ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.119	
90 Percent C.I.	0.118	0.119
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.909
TLI	0.891

STANDARDIZED MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
POSID	BY				
	Y60A	0.667	0.002	401.923	0.000
	Y60B	0.738	0.001	526.011	0.000
	Y60F	0.824	0.001	706.327	0.000
	Y60G	0.706	0.001	471.248	0.000
	Y60H	0.829	0.001	756.395	0.000
	Y60N	0.600	0.002	297.995	0.000
SOCOMP	BY				
	Y60C	0.675	0.002	385.519	0.000
	Y60D	0.678	0.002	408.738	0.000
	Y60E	0.787	0.001	623.146	0.000
	Y60I	0.800	0.001	666.709	0.000
	Y60J	0.733	0.002	487.769	0.000
	Y60K	0.713	0.002	472.322	0.000
	Y60M	0.617	0.002	303.291	0.000
	Y60Q	0.606	0.002	319.955	0.000
SOCOMP	WITH				
	POSID	0.855	0.001	821.647	0.000

Note: Model fit is adequate to marginal; RMSEA is slightly improved when employing two dimensions (shown here), compared to separate dimensions independently. This is support for keeping PI and SC measures. Although they are correlated .855, this is a latent-trait correlation without measurement error. Observed correlation is .74. A unidimensional model with all items combined does not fit with any index, supporting the separation of the two traits. Scores are provided for students who respond to all Positive Identity items and 7 of the 8 Social Competence items.

EMPOWERMENT (DAP) CFA

MODEL: Empow BY Y60l Y60o Y60p Y22b Y22c Y22d ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.229	
90 Percent C.I.	0.228	0.230
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.906
TLI	0.844

STANDARDIZED MODEL RESULTS

		Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
EMPOW	BY				
	Y60L	0.689	0.002	447.230	0.000
	Y60O	0.833	0.001	694.841	0.000
	Y60P	0.832	0.001	672.762	0.000
	Y22B	0.635	0.002	343.316	0.000
	Y22C	0.738	0.002	438.589	0.000
	Y22D	0.774	0.002	446.398	0.000

Note: CFI indicates adequate fit; TLI is weak; RMSEA is troubling. The model fit degrades slightly by removing Y22B, the weakest loading item. Model fit cannot be estimated with the three Y60 items alone. This is a DAP measure, so it remains as is. Scores are provided for students who respond to all 6 items.

SUPPORTED CFA

MODEL: Support BY Y8r Y21h Y59a Y59b Y59c Y59d Y59e ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.161	
90 Percent C.I.	0.160	0.162
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.944
TLI	0.916

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SUPPORT BY				
Y8R	0.503	0.002	207.924	0.000
Y21H	0.602	0.002	329.203	0.000
Y59A	0.818	0.002	539.140	0.000
Y59B	0.816	0.001	644.807	0.000
Y59C	0.619	0.002	343.297	0.000
Y59D	0.872	0.001	882.548	0.000
Y59E	0.815	0.001	740.854	0.000

Note: CFI and TLI indicate adequate fit; RMSEA is weak. The original set of items included both Y7 (talk with father) and Y8 (talk with mother), which were recoded so that "Father/Mother is not around" is considered missing and order is reversed. Y7 (talk with father) did not load well and was dropped - fit improved (which is this current model). Scores are provided for students who respond to all 7 items.

TEACHER/SCHOOL SUPPORT CFA

MODEL: TScSupp BY Y21d Y21e Y21f Y21g Y59d ;

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.077	
90 Percent C.I.	0.075	0.078
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.995
TLI	0.991

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
TSCSUPP BY				
Y21D	0.836	0.001	776.112	0.000
Y21E	0.864	0.001	868.744	0.000
Y21F	0.721	0.001	489.549	0.000
Y21G	0.871	0.001	876.516	0.000
Y59D	0.644	0.002	369.095	0.000

Note: Fit is strong. Scores are provided to students who respond to all 5 items.

BULLIED/BULLYING CFA

MODEL: Bullied BY y25a y25b y25c y25d y25e y25f y26
 y27a y27b y27c y27d y27e;
 Bullying BY y28a y28b y28c y28d y28e y77c y62d y62e;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.049	
90 Percent C.I.	0.049	0.049
Probability RMSEA <= .05	1.000	

CFI/TLI

CFI	0.915
TLI	0.904

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
BULLIED BY				
Y25A	0.603	0.004	159.857	0.000
Y25B	0.602	0.004	147.954	0.000
Y25C	0.687	0.004	186.888	0.000
Y25D	0.728	0.004	185.969	0.000
Y25E	0.703	0.004	183.954	0.000
Y25F	0.691	0.002	284.202	0.000
Y26	0.673	0.003	223.518	0.000
Y27A	0.748	0.002	316.861	0.000
Y27B	0.809	0.002	362.584	0.000
Y27C	0.793	0.002	440.370	0.000
Y27D	0.752	0.003	284.145	0.000
Y27E	0.706	0.002	315.449	0.000
BULLYING BY				
Y28A	0.803	0.003	273.289	0.000
Y28B	0.812	0.003	283.810	0.000
Y28C	0.756	0.003	225.774	0.000
Y28D	0.740	0.004	197.601	0.000
Y28E	0.684	0.003	203.643	0.000
Y77C	0.616	0.004	150.367	0.000
Y62D	0.720	0.005	154.471	0.000
Y62E	0.695	0.005	143.788	0.000
BULLYING WITH BULLIED	0.679	0.003	197.361	0.000

Note: This model fits well. Some items are administered to Grades 8-11 only, including Y25d, Y27d, Y28d, Y62d, Y62e. The scales are concurrently calibrated and scored based on fixed values for the items administered. Scores are provided for 5th grade students responding to 9/10 of Bullied items and 5/5 Bullying items; for other grades responding to 11/12 Bullied items and 7/8 Bullying items.

SCHOOL VIOLENCE CFA

MODEL: SchViol BY Y23a Y23b Y23c Y24 ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.048	
90 Percent C.I.	0.045	0.051
Probability RMSEA <= .05	0.826	

CFI/TLI

CFI	0.982
TLI	0.945

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SCHVIOL BY				
Y23A	0.671	0.005	144.871	0.000
Y23B	0.699	0.005	150.917	0.000
Y23C	0.842	0.005	169.715	0.000
Y24	0.687	0.007	100.175	0.000

Note: Fit is strong. Scores are provided for students who respond to all 4 items.

MENTAL DISTRESS CFA - Grades 8-11

MODEL: MentDis BY Y43b Y43c Y64r Y61a Y61b Y61c Y61d Y61e ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.066	
90 Percent C.I.	0.065	0.067
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.982
TLI	0.974

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
MENTDIS BY				
Y43B	0.579	0.005	121.027	0.000
Y43C	0.392	0.006	69.307	0.000
Y64R	0.871	0.002	419.175	0.000
Y61A	0.879	0.002	492.833	0.000
Y61B	0.724	0.003	264.458	0.000
Y61C	0.803	0.002	345.333	0.000
Y61D	0.825	0.002	379.859	0.000
Y61E	0.934	0.002	531.717	0.000

Note: Fit is strong. This measure is only available for students in grades 8, 9 and 11. Scores are provided for students who respond to 7 of the 8 items.

FAMILY VIOLENCE CFA

MODEL: FamViol BY Y70 Y71 Y72 Y73 Y74 Y76 ;

MODEL FIT INFORMATION

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.049	
90 Percent C.I.	0.048	0.051
Probability RMSEA <= .05	0.853	

CFI/TLI

CFI	0.969
TLI	0.949

STANDARDIZED MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
FAMVIOL BY				
Y70	0.626	0.005	136.202	0.000
Y71	0.639	0.006	115.405	0.000
Y72	0.803	0.003	236.235	0.000
Y73	0.821	0.003	241.919	0.000
Y74	0.792	0.004	205.953	0.000
Y76	0.573	0.008	72.692	0.000

Note: Fit is strong. Scores are provided for students who respond to all 6 items.

Tables of Test Characteristic Curves from Winsteps Rasch Model Analyses

Commitment to Learning: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile	
7	-5.73	1.86	4.54	50	0	1	
8	-4.44	1.05	5.82	36	0	1	
9	-3.65	0.77	6.62	76	0	1	
10	-3.14	0.66	7.12	122	0.1	1	
11	-2.74	0.61	7.53	229	0.1	1	
12	-2.38	0.58	7.88	367	0.2	1	
13	-2.06	0.56	8.20	693	0.4	1	
14	-1.74	0.56	8.52	1245	0.8	1	
15	-1.43	0.56	8.83	2153	1.3	2	
16	-1.12	0.57	9.15	3362	2.1	4	
17	-0.79	0.58	9.47	5303	3.3	7	
18	-0.44	0.60	9.82	7963	4.9	11	
19	-0.07	0.61	10.19	11682	7.2	17	
20	0.31	0.63	10.57	16438	10.2	26	
21	0.71	0.63	10.97	20146	12.5	37	Equipped Level
22	1.11	0.64	11.37	21456	13.3	50	
23	1.52	0.64	11.78	14734	9.1	61	
24	1.94	0.65	12.20	19080	11.8	71	
25	2.37	0.66	12.63	14816	9.2	82	
26	2.83	0.69	13.09	10597	6.6	90	
27	3.35	0.75	13.61	6673	4.1	95	
28	4.00	0.87	14.25	3149	1.9	98	
29	4.97	1.14	15.22	1144	0.7	99	
30	6.40	1.92	16.65	218	0.1	99	

Positive Identity: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile	
6	-4.82	1.86	5.25	1038	0.7	1	
7	-3.54	1.06	6.54	671	0.4	1	
8	-2.72	0.79	7.35	1043	0.7	1	
9	-2.18	0.68	7.89	1583	1	2	
10	-1.76	0.63	8.32	2380	1.6	4	
11	-1.38	0.60	8.69	3595	2.4	6	
12	-1.04	0.58	9.03	6471	4.2	9	
13	-0.71	0.57	9.36	6911	4.5	13	
14	-0.39	0.57	9.68	8551	5.6	18	
15	-0.07	0.57	10.00	10757	7.1	25	
16	0.25	0.58	10.32	12722	8.4	32	
17	0.59	0.59	10.66	14327	9.4	41	
18	0.95	0.61	11.02	17818	11.7	52	Equipped Level
19	1.33	0.63	11.40	13486	8.9	62	
20	1.75	0.67	11.82	12217	8	71	
21	2.24	0.73	12.30	11315	7.4	78	
22	2.84	0.83	12.90	9465	6.2	85	
23	3.72	1.09	13.79	7430	4.9	91	
24	5.06	1.88	15.12	10562	6.9	97	

Social Competence: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile	
8	-4.91	1.85	5.13	674	0.4	1	
9	-3.65	1.04	6.39	192	0.1	1	
10	-2.87	0.77	7.17	252	0.2	1	
11	-2.38	0.65	7.66	479	0.3	1	
12	-2.00	0.59	8.04	689	0.5	1	
13	-1.68	0.54	8.36	835	0.5	2	
14	-1.40	0.52	8.64	1309	0.9	2	
15	-1.14	0.50	8.90	1903	1.3	4	
16	-0.91	0.48	9.14	3392	2.2	5	
17	-0.68	0.47	9.36	3589	2.4	8	
18	-0.46	0.46	9.58	4610	3	10	
19	-0.25	0.46	9.79	5421	3.6	14	
20	-0.04	0.46	10.00	6630	4.4	18	
21	0.18	0.46	10.22	7761	5.1	22	
22	0.39	0.47	10.43	9241	6.1	28	
23	0.61	0.48	10.65	10469	6.9	34	
24	0.85	0.49	10.89	12874	8.5	42	Equipped Level
25	1.10	0.51	11.13	11433	7.5	50	
26	1.37	0.53	11.41	11286	7.4	57	
27	1.67	0.57	11.71	11105	7.3	65	
28	2.02	0.61	12.06	10450	6.9	72	
29	2.43	0.68	12.47	9670	6.4	79	
30	2.97	0.79	13.01	8831	5.8	85	
31	3.79	1.06	13.83	7562	5	90	
32	5.09	1.86	15.13	11407	7.5	96	

Empowerment: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
6	-4.63	1.80	5.62	174	0.1	1
7	-3.47	0.98	6.78	130	0.1	1
8	-2.78	0.72	7.47	116	0.1	1
9	-2.33	0.63	7.92	297	0.2	1
10	-1.96	0.59	8.28	569	0.4	1
11	-1.63	0.57	8.62	1063	0.7	1
12	-1.30	0.58	8.94	1717	1.1	2
13	-0.96	0.59	9.28	2822	1.8	3
14	-0.61	0.60	9.63	3817	2.4	5
15	-0.24	0.61	10.00	9733	6.1	10
16	0.14	0.63	10.38	7911	4.9	15
17	0.55	0.65	10.79	10415	6.5	21
18	0.98	0.67	11.22	16936	10.5	29
19	1.44	0.69	11.68	14207	8.8	39
20	1.94	0.73	12.18	18129	11.3	49
21	2.50	0.78	12.74	20691	12.9	61
22	3.17	0.87	13.40	14690	9.1	72
23	4.11	1.11	14.35	17586	10.9	82
24	5.48	1.89	15.71	19608	12.2	94

Supported: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
7	-4.70	1.83	5.57	105	0.1	1
8	-3.48	1.01	6.79	247	0.2	1
9	-2.76	0.72	7.50	390	0.2	1
10	-2.33	0.60	7.93	423	0.3	1
11	-2.01	0.53	8.25	566	0.3	1
12	-1.75	0.49	8.51	740	0.5	1
13	-1.53	0.46	8.73	860	0.5	2
14	-1.33	0.44	8.93	1146	0.7	2
15	-1.14	0.43	9.12	1577	1	3
16	-0.96	0.42	9.30	2287	1.4	4
17	-0.79	0.42	9.47	2463	1.5	6
18	-0.61	0.42	9.65	2989	1.8	8
19	-0.44	0.42	9.82	3835	2.4	10
20	-0.26	0.43	10.00	5649	3.5	13
21	-0.06	0.44	10.20	5643	3.5	16
22	0.14	0.46	10.40	7324	4.5	20
23	0.35	0.47	10.61	8174	5.1	25
24	0.59	0.49	10.85	11057	6.8	31
25	0.84	0.52	11.10	11423	7.1	38
26	1.13	0.55	11.39	12392	7.7	45
27	1.45	0.58	11.71	13228	8.2	53
28	1.81	0.62	12.07	14136	8.7	62
29	2.23	0.68	12.49	15114	9.3	71
30	2.73	0.74	12.99	12579	7.8	79
31	3.36	0.85	13.61	8695	5.4	86
32	4.27	1.10	14.52	10399	6.4	92
33	5.62	1.88	15.87	8315	5.1	97

Teacher/School Support: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
5	-5.60	1.87	4.76	960	0.6	1
6	-4.28	1.08	6.08	799	0.5	1
7	-3.41	0.83	6.95	1037	0.6	1
8	-2.81	0.74	7.56	1704	1.1	2
9	-2.03	0.69	8.06	2520	1.6	4
10	-1.83	0.68	8.53	3813	2.4	6
11	-1.37	0.68	8.99	5495	3.4	8
12	-0.89	0.71	9.47	7672	4.8	13
13	-0.36	0.75	10.00	10279	6.4	18
14	0.25	0.81	10.61	16198	10.1	26
15	0.97	0.88	11.33	24399	15.2	39
16	1.76	0.89	12.11	21656	13.5	53
17	2.52	0.86	12.88	16407	10.2	65
18	3.24	0.85	13.60	12827	8.0	74
19	3.99	0.90	14.35	11657	7.3	82
20	4.96	1.12	15.31	12270	7.6	89
21	6.33	1.88	16.68	10928	6.8	97

Bullied (Victim): Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
12	-4.14	1.84	5.77	67391	41.9	21
13	-2.90	1.02	7.01	25846	16.1	50
14	-2.18	0.72	7.74	16204	10.1	63
15	-1.76	0.58	8.16	8596	5.4	71
16	-1.48	0.49	8.44	10276	6.4	77
17	-1.27	0.43	8.65	6980	4.3	82
18	-1.11	0.38	8.81	4994	3.1	86
19	-0.98	0.35	8.94	2648	1.6	88
20	-0.86	0.32	9.06	3236	2	90
21	-0.76	0.30	9.15	2472	1.5	92
22	-0.68	0.29	9.24	1874	1.2	93
23	-0.60	0.27	9.32	1016	0.6	94
24	-0.53	0.26	9.39	1426	0.9	95
25	-0.46	0.25	9.46	1174	0.7	96
26	-0.40	0.24	9.52	946	0.6	96
27	-0.35	0.24	9.57	805	0.5	97
28	-0.29	0.23	9.63	478	0.3	97
29	-0.24	0.23	9.68	535	0.3	97
30	-0.19	0.22	9.73	460	0.3	98
31	-0.14	0.22	9.78	410	0.3	98
32	-0.10	0.21	9.82	429	0.3	98
33	-0.05	0.21	9.87	307	0.2	99
34	-0.01	0.21	9.91	195	0.1	99
35	0.04	0.21	9.96	245	0.2	99
36	0.08	0.21	10.00	213	0.1	99
37	0.12	0.20	10.04	179	0.1	99
38	0.16	0.20	10.08	174	0.1	99
39	0.21	0.20	10.13	133	0.1	99
40	0.25	0.21	10.17	112	0.1	99
41	0.29	0.21	10.21	108	0.1	99
42	0.33	0.21	10.25	92	0.1	99
43	0.38	0.21	10.30	74	0	99
44	0.42	0.21	10.34	73	0	99
45	0.47	0.22	10.39	66	0	99
46	0.51	0.22	10.43	51	0	99
47	0.56	0.23	10.48	27	0	99
48	0.62	0.23	10.54	50	0	99
49	0.67	0.24	10.59	30	0	99

50	0.73	0.25	10.65	34	0	99
51	0.80	0.26	10.72	44	0	99
52	0.87	0.28	10.79	24	0	99
53	0.95	0.30	10.87	29	0	99
54	1.05	0.32	10.97	19	0	99
55	1.16	0.36	11.08	17	0	99
56	1.31	0.41	11.23	42	0	99
57	1.50	0.49	11.43	10	0	99
58	1.80	0.62	11.73	20	0	99
59	2.38	0.94	12.31	24	0	99
60	3.51	1.80	13.43	70	0	99

Bullied (Victim) for Corrected Scores after DIF adjustments
Raw Score to Rasch Scale Score (Mean) Conversion Table
The mean scores are the mean Thetas for each BD Score value (number of raw score points)
Note: The minimum value associated with the mid-point raw score (36) was used as the cut
score for defining 10.0 on the Bullied scaled score.

BD Raw score	Mean Theta	N	SD	Min Theta	Max Theta
12	-4.1982	51275	.05907	-4.40	-4.17
13	-2.9483	17984	.05615	-3.14	-2.92
14	-2.2098	11071	.05604	-2.39	-2.18
15	-1.7783	7969	.05211	-1.95	-1.75
16	-1.4857	6321	.04632	-1.64	-1.46
17	-1.2655	4327	.04482	-1.41	-1.24
18	-1.0948	3113	.04356	-1.23	-1.07
19	-0.9537	2333	.04098	-1.08	-0.93
20	-0.8340	1831	.04043	-0.95	-0.81
21	-0.7369	1439	.04056	-0.85	-0.71
22	-0.6443	1078	.03893	-0.75	-0.62
23	-0.5551	865	.04012	-0.67	-0.53
24	-0.4848	772	.03900	-0.59	-0.46
25	-0.4160	676	.03898	-0.51	-0.39
26	-0.3521	518	.03502	-0.45	-0.33
27	-0.2923	437	.03424	-0.38	-0.27
28	-0.2321	383	.03456	-0.32	-0.21
29	-0.1736	308	.03829	-0.27	-0.15
30	-0.1228	258	.03506	-0.21	-0.10
31	-0.0774	229	.03619	-0.16	-0.05
32	-0.0268	241	.03731	-0.11	0.00
33	0.0243	162	.02895	-0.06	0.04
34	0.0633	150	.03508	-0.01	0.09
35	0.1145	134	.03631	0.04	0.14
36	0.1521	132	.03551	0.09	0.18
37	0.1854	92	.03443	0.13	0.22
38	0.2425	88	.03560	0.18	0.27
39	0.2870	76	.03278	0.23	0.31
40	0.3288	81	.02917	0.27	0.35
41	0.3764	50	.03206	0.32	0.40
42	0.4127	45	.03026	0.36	0.44

43	0.4664	33	.03248	0.41	0.49
44	0.5071	41	.02667	0.46	0.53
45	0.5550	34	.02926	0.51	0.58
46	0.6000	24	.03148	0.56	0.63
47	0.6582	17	.02744	0.61	0.68
48	0.7019	26	.02577	0.67	0.73
49	0.7706	17	.02727	0.73	0.79
50	0.8225	12	.02491	0.79	0.85
51	0.8924	17	.02195	0.86	0.91
52	0.9700	15	.01732	0.94	0.98
53	1.0453	17	.02183	1.02	1.07
54	1.1414	14	.01748	1.12	1.16
55	1.2520	5	.01789	1.23	1.28
56	1.4109	34	.01264	1.38	1.42
57	1.6067	3	.01155	1.60	1.62
58	1.9100	1	.	1.91	1.91
59	2.4938	16	.01025	2.47	2.50
60	3.6269	59	.00933	3.59	3.63
Total	-2.8886	114823	1.36092	-4.40	3.63

Bullying (Perpetrator): Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
6	-3.72	1.85	6.11	103086	64.3	32
7	-2.46	1.03	7.37	19811	12.4	71
8	-1.71	0.74	8.12	16322	10.2	82
9	-1.27	0.59	8.56	7397	4.6	89
10	-0.98	0.50	8.85	3646	2.3	93
11	-0.76	0.44	9.07	3044	1.9	95
12	-0.59	0.40	9.24	1424	0.9	96
13	-0.44	0.37	9.39	1666	1	97
14	-0.31	0.34	9.52	1024	0.6	98
15	-0.20	0.33	9.63	615	0.4	98
16	-0.10	0.31	9.73	329	0.2	99
17	0.00	0.30	9.83	381	0.2	99
18	0.09	0.30	9.92	276	0.2	99
19	0.17	0.29	10.00	184	0.1	99
20	0.26	0.29	10.09	128	0.1	99
21	0.34	0.29	10.17	108	0.1	99
22	0.43	0.29	10.26	102	0.1	99
23	0.51	0.30	10.34	74	0	99
24	0.60	0.30	10.43	57	0	99
25	0.70	0.31	10.53	52	0	99
26	0.80	0.33	10.63	95	0.1	99
27	0.92	0.36	10.75	89	0.1	99
28	1.06	0.39	10.89	70	0	99
29	1.23	0.45	11.07	57	0	99
30	1.49	0.57	11.32	43	0	99
31	1.97	0.86	11.80	26	0	99
32	2.98	1.75	12.81	93	0.1	99

Family Violence: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
0	-3.33	1.90	6.71	109736	72	36
1	-1.92	1.14	8.12	22739	14.9	79
2	-0.88	0.94	9.16	11082	7.3	91
3	-0.04	0.91	10.00	5315	3.5	96
4	0.83	0.97	10.87	2384	1.6	98
5	1.95	1.19	11.99	805	0.5	99
6	3.45	1.93	13.49	302	0.2	99

Mental Distress: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
0	-3.86	1.89	6.20	48036	40.1	20
1	-2.49	1.12	7.57	18634	15.6	48
2	-1.51	0.90	8.55	13333	11.1	61
3	-0.76	0.84	9.30	11966	10	72
4	-0.06	0.84	10.00	11629	9.7	82
5	0.68	0.88	10.74	6326	5.3	89
6	1.50	0.95	11.56	6181	5.2	94
7	2.56	1.16	12.63	3106	2.6	98
8	4.00	1.91	14.06	600	0.5	99

School Violence: Raw Score to Rasch Scale Score (Measure) Conversion Table with Standard Errors, Frequencies, and Percentiles

Raw Score	Rasch Measure	SE(Measure)	Reporting Score	n	%	Percentile
4	-2.67	1.83	7.24	126298	78.5	39
5	-1.51	0.95	8.40	15021	9.3	83
6	-0.93	0.62	8.97	7211	4.5	90
7	-0.64	0.49	9.27	4023	2.5	94
8	-0.44	0.42	9.47	3781	2.4	96
9	-0.28	0.38	9.63	1357	0.8	98
10	-0.14	0.35	9.77	924	0.6	98
11	-0.02	0.34	9.89	480	0.3	99
12	0.09	0.33	10.00	579	0.4	99
13	0.19	0.33	10.10	290	0.2	99
14	0.3	0.33	10.21	174	0.1	99
15	0.42	0.34	10.33	101	0.1	99
16	0.54	0.37	10.45	285	0.2	99
17	0.69	0.41	10.60	67	0	99
18	0.9	0.5	10.81	36	0	99
19	1.26	0.73	11.17	71	0	99
20	1.97	1.5	11.89	158	0.1	99

Scores used to Produce Reporting Scale and Equipped Indicators

Transforming Rasch Scale Scores to Reporting Scale, Centered at 10

Measure	Minimum Raw Score	Maximum Raw Score	Mid-Point Raw Score	Mid-Point-Associated Rasch Score
Commitment to Learning	7	30	18.5	-0.255
Positive Identity	6	24	15	-0.070
Social Competence	8	32	20	-0.040
Empowerment	6	24	15	-0.240
Supported	7	33	20	-0.260
Teacher/School Support	5	21	13	-0.360
Bullied	12	60	36	0.080
Bullied Corrected	12	60	36	0.090
Bullying	6	32	19	0.170
Family Violence	0	6	3	-0.040
Mental Distress	0	8	4	-0.060

Note: The mid-point raw score is transformed to the reporting scale score through the Test Characteristic Curve tables using the following formula:

$$(\text{Rasch Score} - \text{Mid-Point Associated Rasch Score}) + 10$$

The Mid-Point-Associated Rasch score is obtained from the Test Characteristic Curve tables (the measure associated with the raw score). In some cases, the mid-point raw score is a half-point score, requiring linear interpolation to obtain the mid-point-associated Rasch score.

Establishing Equipped Level of Developmental Skills

Commitment to Learning

Six items at score of 3 (most of the time) +
 one item at score of 2 (at least one hour of homework on a typical school day) +
 one item at score of 1 (do not have a hard time paying attention) = 21
 Rasch Score associated with raw score of 21 = 0.71

Positive Identity

Six items at score of 3 (Very or Often) = 18
 Rasch Score associated with raw score of 18 = 0.95

Social Competence

Eight items at score of 3 (Very or Often) = 24
 Rasch Score associated with raw score of 24 = 0.85

Note: The associated raw-score and Rasch-scores for these skills are noted in the tables containing the Test Characteristic Curve information.

Description of Minnesota Participating Students

In total 162,034 students participated in the 213 Minnesota Student Survey.

Students represent:

- all 87 Minnesota Counties
- 312 school districts (including some charter schools)
- 1025 school buildings.

Note: In the following tables, the totals in columns or rows may vary from table to table, due to missing responses to particular items. Percentages reported in each table are based on the numbers responding to the given MSS question.

Number and Percent of Students by Gender and Grade Level

Gender		Grade				Total
		5	8	9	11	
Male	<i>n</i>	20293	21548	21183	18610	81634
	<i>% by grade</i>	50.9%	50.3%	50.0%	50.4%	50.4%
Female	<i>n</i>	19561	21293	21198	18348	80400
	<i>% by grade</i>	49.1%	49.7%	50.0%	49.6%	49.6%
Total	<i>n</i>	39854	42841	42381	36958	162034

Number and Percent of with an IEP or receiving Free/Reduced Price Lunch

		Grade				Total
		5	8	9	11	
IEP	<i>N</i>	4493	4050	4040	3406	15989
	<i>% by grade</i>	12.0%	9.8%	9.8%	9.3%	10.2%
FRL	<i>n</i>	10404	11709	11606	9889	42717
	<i>% by grade</i>	28.6%	27.9%	27.8%	24.6%	27.3%

Number and Percent of Students by Race/Ethnicity and Grade Level

		<i>Grade</i>				<i>Total</i>
		<i>5</i>	<i>8</i>	<i>9</i>	<i>11</i>	
American Indian only	<i>n</i>	1018	619	500	273	2410
	<i>% by grade</i>	2.7%	1.5%	1.2%	0.7%	1.5%
Asian (non-Hmong)	<i>n</i>	1276	1243	1197	1081	4797
	<i>% by grade</i>	3.3%	2.9%	2.9%	2.9%	3.0%
Black (non-Somali)	<i>n</i>	2354	1997	1897	1540	7788
	<i>% by grade</i>	6.1%	4.7%	4.5%	4.2%	4.9%
Native Hawaiian Pacific Islands	<i>n</i>	115	79	87	73	354
	<i>% by grade</i>	0.3%	0.2%	0.2%	0.2%	0.2%
White	<i>n</i>	26604	30398	30544	27941	115487
	<i>% by grade</i>	69.3%	71.9%	72.8%	76.2%	72.5%
Multiple	<i>n</i>	2384	3091	3070	1982	10527
	<i>% by grade</i>	6.2%	7.3%	7.3%	5.4%	6.6%
Latino	<i>n</i>	2934	3435	3065	2268	11702
	<i>% by grade</i>	7.6%	8.1%	7.3%	6.2%	7.3%
Somali	<i>n</i>	706	521	419	343	1989
	<i>% by grade</i>	1.8%	1.2%	1.0%	0.9%	1.2%
Hmong	<i>n</i>	1015	907	1179	1152	4253
	<i>% by grade</i>	2.6%	2.1%	2.8%	3.1%	2.7%

Note: Race categories reported here include students who only selected one race; students who selected multiple races are included in the “Multiple” category. Ethnicities (Latino, Somali, Hmong) are reported for students who selected only one ethnicity, regardless of race selection; students who selected multiple ethnicities are included in the “Multiple” category. Ethnic membership could be associated with any racial membership.

Note about American Indian Students: A total of 9491 students (6.2% of the total sample identifying racial membership) identified as American Indian or Alaskan Native. Of these, 75% identified with other racial or ethnic memberships and are included in the “Multiple” category.

Note about Native Hawaiian/Pacific Island Students: A total of 1695 (1.1%) identified as Native Hawaiian or Pacific Islander; 43% also identified as White; 26% as Latino; 19% as Black, African, or African American; 16% as American Indian/Alaskan Native; and 15% as Asian.

Note about Ethnic membership: Of all Latino students, 42% did not identify with a race. Of all Somali students, 8% did not identify with a race; about 87% also identified as Black, African, or African American. Of all Hmong students, all of them also selected a racial identification; about 95% also identified as Asian.

Descriptive Statistics and Associations of Developmental Skills, Supports, & Challenges

The following statistical descriptive analyses are provided to offer an initial picture of the promise of these derived variables. The usefulness of the developmental skills, supports, and challenges, is based on their association with each other and with other important related outcomes. This is part of the defining the interpretation and use argument for these measures and providing the evidence to support the argument – the validity argument.

The statistical analyses reported here include the following:

- Descriptive Statistics
 - Means, minimum/maximum scores, standard deviations
- Correlations within and between Skills, Supports, and Challenges
- Correlations with self-reported grades
- Associations with post high school plans

State Descriptive Statistics by Grade: Developmental Skills

Grade		<i>Commitment to Learning</i>	<i>Positive Identity</i>	<i>Social Competence</i>
5	Mean	11.6	11.4	11.7
	Min	4.5	5.3	5.1
	Max	16.6	15.1	15.1
	SD	1.2	1.7	1.7
	N	35910	32925	34959
8	Mean	11.4	11.2	11.4
	Min	4.5	5.3	5.1
	Max	16.6	15.1	15.1
	SD	1.3	1.8	1.7
	N	41784	39035	39881
9	Mean	11.4	11.1	11.3
	Min	4.5	5.3	5.1
	Max	16.6	15.1	15.1
	SD	1.3	1.9	1.7
	N	41258	38357	39103
11	Mean	11.4	11.1	11.2
	Min	4.5	5.3	5.1
	Max	16.6	15.1	15.1
	SD	1.4	1.7	1.6
	N	36128	34210	34717
Total	Mean	11.4	11.1	11.4
	Min	4.5	5.3	5.1
	Max	16.6	15.1	15.1
	SD	1.3	1.8	1.7
	N	155080	144527	148660

State Descriptive Statistics by Grade: Developmental Supports

Grade		<i>Empowerment</i>	<i>Supported</i>	<i>Teacher/School Support</i>
5	Mean	12.7	12.5	13.3
	Min	5.6	5.6	4.8
	Max	15.7	15.9	16.7
	SD	1.8	1.7	2.25
	N	33317	34148	33545
8	Mean	12.4	11.7	11.8
	Min	5.6	5.6	4.8
	Max	15.7	15.9	16.7
	SD	1.9	1.6	2.3
	N	38799	38567	37939
9	Mean	12.3	11.6	11.8
	Min	5.6	5.6	4.8
	Max	15.7	15.9	16.7
	SD	1.9	1.6	2.2
	N	38255	37906	37695
11	Mean	12.3	11.6	11.7
	Min	5.6	5.6	4.8
	Max	15.7	15.9	16.7
	SD	1.8	1.6	2.1
	N	34132	33599	33658
Total	Mean	12.4	11.8	12.1
	Min	5.6	5.6	4.8
	Max	15.7	15.9	16.7
	SD	1.9	1.7	2.3
	N	144503	144220	142837

State Descriptive Statistics by Grade: Developmental Challenges

Grade		<i>Bullied</i>	<i>Bullying</i>	<i>School Violence</i>	<i>Mental Distress</i>	<i>Family Violence</i>
5	Mean	7.4	7.1	7.5		7.2
	Min	6.0	6.6	7.2		6.7
	Max	13.3	12.5	11.9		13.5
	SD	1.3	0.9	0.6		1.0
	N	37853	35948	38242		35505
8	Mean	7.2	6.9	7.6	7.9	7.3
	Min	5.8	6.1	7.2	6.2	6.7
	Max	13.4	12.8	11.9	14.1	13.5
	SD	1.4	1.1	0.7	1.8	1.1
	N	41849	39707	42023	39377	38715
9	Mean	7.1	6.8	7.6	8.0	7.4
	Min	5.8	6.1	7.2	6.2	6.7
	Max	13.4	12.8	11.9	14.1	13.5
	SD	1.3	1.1	0.8	1.9	1.2
	N	41286	38788	41513	38608	38339
11	Mean	6.9	6.7	7.7	8.1	7.3
	Min	5.8	6.1	7.2	6.2	6.7
	Max	13.4	12.8	11.9	14.1	13.5
	SD	1.3	1.0	0.8	1.9	1.1
	N	36126	34389	36328	34283	34180
Total	Mean	7.2	6.9	7.6	8.0	7.3
	Min	5.8	6.1	7.2	6.2	6.7
	Max	13.4	12.8	11.9	14.1	13.5
	SD	1.3	1.0	0.7	1.9	1.1
	N	157114	148832	158106	112268	146739

Statewide Correlations: Developmental Skills & Supports

		<i>Commitment to Learning</i>	<i>Positive Identity</i>	<i>Social Competence</i>	<i>Empowerment</i>	<i>Supported</i>
Positive Identity	<i>r</i>	.437				
	<i>N</i>	142154				
Social Competence	<i>r</i>	.516	.737			
	<i>N</i>	145964	143912			
Empowerment	<i>r</i>	.483	.694	.683		
	<i>N</i>	142319	140284	143814		
Supported	<i>r</i>	.442	.550	.553	.644	
	<i>N</i>	141939	136103	139557	136305	
Teacher/School Support	<i>r</i>	.514	.423	.474	.546	.708
	<i>N</i>	140226	133973	137331	134291	135309

Note: All significance *p*-values are less than .001, due to large samples.

Statewide Correlations: Developmental Challenges

		<i>Bullied</i>	<i>Bullying</i>	<i>School Violence</i>	<i>Mental Distress</i>
Bullying	<i>r</i>	.458			
	<i>N</i>	147213			
School Violence	<i>r</i>	.366	.340		
	<i>N</i>	155458	147291		
Mental Distress	<i>r</i>	.447	.278	.251	
	<i>N</i>	111254	110614	111373	
Family Violence	<i>r</i>	.319	.301	.279	.419
	<i>N</i>	144245	142930	144637	108079

Note: All significance *p*-values are less than .001, due to large samples.

Statewide Correlations: Developmental Skills, Supports, & Challenges

		<i>Bullied</i>	<i>Bullying</i>	<i>School Violence</i>	<i>Mental Distress</i>	<i>Family Violence</i>
Commitment to Learning	<i>r</i>	-.201	-.295	-.246	-.266	-.238
	<i>N</i>	152986	145813	153400	111636	142980
Positive Identity	<i>r</i>	-.285	-.218	-.173	-.479	-.292
	<i>N</i>	142973	140767	143170	108782	137829
Social Competence	<i>r</i>	-.229	-.307	-.232	-.331	-.274
	<i>N</i>	146920	144603	147183	110704	141514
Empowerment	<i>r</i>	-.333	-.251	-.246	-.446	-.352
	<i>N</i>	143096	140926	143351	108502	137965
Supported	<i>r</i>	-.282	-.210	-.236	-.404	-.330
	<i>N</i>	142594	138855	142909	105858	136171
Teacher/School Support	<i>r</i>	-.267	-.232	-.284	-.299	-.261
	<i>N</i>	140402	136674	140662	104523	133972

Note: All significance *p*-values are less than .001, due to large samples.

Associations of Skills, Supports, & Challenges with Self-Reported Grades

<i>Developmental Skills</i>		<i>Grades</i>
Commitment to Learning	<i>r</i>	.437
	<i>N</i>	144920
Positive Identity	<i>r</i>	.274
	<i>N</i>	135536
Social Competence	<i>r</i>	.321
	<i>N</i>	139010
<i>Developmental Supports</i>		
Empowerment	<i>r</i>	.294
	<i>N</i>	135522
Supported	<i>r</i>	.255
	<i>N</i>	135028
Teacher/School Support	<i>r</i>	.252
	<i>N</i>	133762
<i>Developmental Challenges</i>		
Bullied	<i>r</i>	-.147
	<i>N</i>	146159
Bullying	<i>r</i>	-.188
	<i>N</i>	138831
School Violence	<i>r</i>	-.183
	<i>N</i>	146929
Mental Distress	<i>r</i>	-.244
	<i>N</i>	109293
Family Violence	<i>r</i>	-.221
	<i>N</i>	136898

Note: All significance *p*-values are less than .001, due to large samples.

Associations of Skills with Post-High School Plans

What is the MAIN thing you plan to do right AFTER high school?

		<i>Commitment to Learning</i>	<i>Positive Identity</i>	<i>Social Competence</i>
I don't plan to graduate from high school	Mean	9.2	9.7	9.6
	SD	1.9	2.6	2.5
	N	444	395	405
Get my GED	Mean	10.9	10.5	10.7
	SD	1.4	1.9	1.8
	N	1464	1309	1329
Go to a two-year community or technical college	Mean	10.9	10.7	10.8
	SD	1.2	1.7	1.5
	N	11415	10652	10824
Go to a four-year college or university	Mean	11.6	11.3	11.5
	SD	1.2	1.8	1.6
	N	81236	76793	78147
Get a license or certificate in a career field	Mean	11.3	10.9	11.2
	SD	1.3	1.8	1.6
	N	4640	4351	4424
Attend an apprenticeship program	Mean	10.5	10.6	10.7
	SD	1.4	1.9	1.6
	N	244	221	230
Join the military	Mean	10.7	10.8	10.6
	SD	1.3	1.9	1.6
	N	6248	5798	5928
Work at a job	Mean	10.5	10.3	10.4
	SD	1.3	1.8	1.6
	N	5159	4708	4807

Associations of Supports with Post-High School Plans

What is the MAIN thing you plan to do right AFTER high school?

		<i>Empowerment</i>	<i>Supported</i>	<i>Teacher/School Support</i>
I don't plan to graduate from high school	Mean	10.5	10.4	9.4
	SD	2.3	2.0	3.0
	N	385	334	391
Get my GED	Mean	11.7	11.3	11.1
	SD	1.8	1.6	2.4
	N	1289	1290	1265
Go to a two-year community or technical college	Mean	11.9	11.3	11.3
	SD	1.7	1.5	2.1
	N	10579	10479	10473
Go to a four-year college or university	Mean	12.6	11.8	12.0
	SD	1.8	1.6	2.2
	N	76732	76357	75291
Get a license or certificate in a career field	Mean	12.1	11.4	11.5
	SD	1.9	1.6	2.2
	N	4301	4286	4240
Attend an apprenticeship program	Mean	11.6	11.0	10.9
	SD	1.9	1.5	2.4
	N	221	222	222
Join the military	Mean	11.7	11.1	11.1
	SD	1.8	1.5	2.3
	N	5783	5607	5648
Work at a job	Mean	11.4	11.0	10.9
	SD	1.7	1.6	2.3
	N	4668	4565	4628

Associations of Challenges with Post-High School Plans

What is the MAIN thing you plan to do right AFTER high school?

		<i>Bullied</i>	<i>Bullying</i>	<i>School Violence</i>	<i>Mental Distress</i>	<i>Family Violence</i>
I don't plan to graduate from high school	Mean	8.3	8.2	8.8	8.9	8.4
	SD	2.1	1.8	1.5	2.2	2.0
	N	438	405	456	405	400
Get my GED	Mean	7.4	7.1	7.7	8.4	7.7
	SD	1.4	1.2	0.9	2.0	1.4
	N	1465	1321	1478	1306	1303
Go to a two-year community or technical college	Mean	7.1	6.9	7.7	8.2	7.5
	SD	1.4	1.1	0.8	2.0	1.2
	N	11421	10742	11486	10691	10607
Go to a four-year college or university	Mean	7.0	6.7	7.6	7.8	7.2
	SD	1.3	1.0	0.7	1.8	1.0
	N	81263	77581	81561	77249	76496
Get a license or certificate in a career field	Mean	7.3	6.9	7.7	8.3	7.5
	SD	1.4	1.1	0.8	2.0	1.3
	N	4629	4423	4653	4395	4352
Attend an apprenticeship program	Mean	7.6	7.1	8.0	8.7	7.6
	SD	1.5	1.3	1.0	2.2	1.2
	N	243	230	244	228	227
Join the military	Mean	7.3	7.2	7.9	8.4	7.7
	SD	1.5	1.3	1.0	2.0	1.3
	N	6253	5854	6283	5827	5759
Work at a job	Mean	7.3	7.1	7.8	8.4	7.7
	SD	1.4	1.2	0.9	2.0	1.4
	N	5156	4764	5216	4731	4676

Descriptive Statistics & Associations for Equipped Level of Developmental Skills

The following statistical descriptive analyses were initiated in support of the work of Generation Next in Minneapolis and St. Paul. As described earlier, the score scales for the three developmental skills were dichotomized to provide indicators of being equipped in each skill area. The following tables provide descriptive statistics for students equipped in each developmental skill and distributions of students regarding the number of skills in which they are equipped.

In addition, associations with other outcomes are provided regarding equipped status on zero to all three of the developmental skill areas. We find that students who are equipped in more skill areas are uniformly reporting more positive outcomes and behaviors. This is part of the defining the interpretation and use argument for these measures and providing the evidence to support the argument – the validity argument.

The statistical analyses reported here include the following:

- Descriptive Statistics
 - Percent equipped in each skill area
 - Percent equipped across accumulation of skills
- Association between being Equipped and self-reported grades
- Association between being Equipped and after-school activity participation
- Association between being Equipped and post high school plans.

Percent of Students Equipped by Developmental Skills and Grade Level

<i>Grade</i>	<i>Commitment to Learning</i>	<i>Positive Identity</i>	<i>Social Competence</i>
5	74.1%	60.9%	70.2%
8	68.5%	54.3%	62.3%
9	67.2%	52.1%	59.3%
11	64.8%	49.7%	57.4%
Total	68.7%	54.1%	62.2%

Percent of Students and Number of Skills in which they are Equipped by Grade Level

<i>Grade</i>	<i>Number of Skills Equipped</i>							
	<i>0 (None)</i>		<i>Only 1</i>		<i>Only 2</i>		<i>All 3</i>	
5	3574	11.6%	5480	17.7%	7245	23.4%	14624	47.3%
8	6533	16.9%	7716	20.0%	8838	22.9%	15573	40.3%
9	6869	18.1%	8089	21.3%	8698	22.9%	14392	37.8%
11	5998	17.6%	7900	23.2%	8704	25.6%	11395	33.5%
Total	22974	16.2%	29185	20.6%	33485	23.6%	55984	39.5%

Associations of Equipped Level of Skills with Self-Reported Grades

Mean and Standard Deviation of Self-Reported Grades by Equipped Level

<i>Grade</i>	<i>Number of Skills Equipped</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>
5	0	2.74	0.99	2966
	1	3.07	0.87	4542
	2	3.25	0.81	5935
	3	3.49	0.68	12003
8	0	2.44	1.11	6283
	1	2.98	0.94	7444
	2	3.25	0.83	8577
	3	3.54	0.69	15271
9	0	2.37	1.09	6638
	1	2.96	0.95	7838
	2	3.23	0.86	8463
	3	3.51	0.70	14109
11	0	2.46	0.98	5854
	1	2.98	0.85	7708
	2	3.23	0.80	8543
	3	3.47	0.68	11213
Total	0	2.46	1.06	21741
	1	2.99	0.90	27532
	2	3.24	0.83	31518
	3	3.51	0.69	52596

Associations of Equipped Level of Skills with After-School Activity Participation

Percent of Students Participating in at least One After-School Activity in a Typical Week by Equipped Level

<i>Grade</i>	<i>Number of Skills Equipped</i>	<i>%</i>	<i>N</i>
5	0	70.4%	3516
	1	76.6%	5400
	2	81.2%	7161
	3	86.5%	14454
8	0	67.4%	6501
	1	76.9%	7672
	2	83.7%	8804
	3	89.2%	15517
9	0	65.7%	6827
	1	77.2%	8050
	2	83.9%	8656
	3	89.6%	14322
11	0	60.8%	5972
	1	73.6%	7864
	2	81.8%	8671
	3	87.9%	11346
Total	0	65.6%	22816
	1	76.0%	28986
	2	82.7%	33292
	3	88.3%	55639

Associations of Equipped Level of Skills with Post High School Plans

Percent of 11th Grade Students reporting Post-High School Plans by Equipped Level

11 th Grade Students Post-High School Plans	<i>Number of Skills Equipped</i>				<i>Total n</i>
	0	1	2	3	
I don't plan to graduate from high school	65.5%	20.2%	7.1%	7.1%	84
Get my GED	34.3%	26.5%	20.5%	18.7%	166
Go to a two-year community or technical college	28.1%	28.5%	23.0%	20.5%	5108
Go to a four-year college or university	11.6%	21.5%	27.2%	39.7%	23543
Get a license or certificate in a career field	28.1%	22.9%	24.2%	24.9%	748
Join the military	31.8%	26.1%	21.2%	20.9%	1428
Work at a job	46.5%	25.5%	16.5%	11.6%	1220

Appendix

Papers and Reports by the Minnesota Youth Development Research Group

- Vue, K., & Rodriguez, M.C. (2016, April). *Measuring being bullied in the context of racial and religious DIF*. Paper to be presented at the annual meeting of the National Council on Measurement in Education, Washington DC.
- Karl, S.R., Cabrera, J.C., Y Rodriguez, M.C. (2016, April). *A re-examination of the importance of students' school connectedness*. Paper to be presented at the annual meeting of the American Educational Research Association, Washington DC.
- Guzman Ayala, R., Rodriguez, M.C., & Palma Zamora, J.R. (2016, April). *Achieving goals: Role of support and structure for Latina/o student post high school goals*. Paper to be presented at the annual meeting of the American Educational Research Association, Washington DC.
- Nickodem, K., Van Boekel, M., Stanke, L., Palma Zamora, J.R., Vue, K., Bulut, O., Kang, Y., Chang, Y., & Rodriguez, M.C. (2016, April). *LGB students and school sports: A positive youth development approach*. Paper to be presented at the annual meeting of the American Educational Research Association, Washington DC.
- Bulut, O., Van Boekel, M., Stanke, L., Palma, J.R., Nickodem, K., Vue, K., Change, Y.F., Latterell, N., Rodriguez, M.C. (2015, April). Effects of participation in school sports on academic and social outcome variables. Paper to be presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Vue, K., Van Boekel, M., Change, Y.F., Rodriguez, M.C., Palma, J.C., Stanke, L., Latterell, N., Nickodem, K. (2015, April). Measuring ethnic diversity in schools. Paper to be presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Bulut, O., Van Boekel, M., Palma, J.R., Stanke, L., Rodriguez, M.C. (2014, April). *Investigating the effects of school sports on academic and social outcomes*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Cabrera, J.C., Oliveri, M., Rodriguez, M.C. (2014, April). *Problems with interpretations of multilevel data – Extending research beyond hierarchical linear modeling*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Cabrera, J.C., Rodriguez, M.C., Palma, J.R., Stanke, L. (2014, April). *The influence of individual, family-related, and structural factors on Latino students' academic performance: An ethnic breakdown*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Karl, S.R., Cabrera, J.C., Rodriguez, M.C. (2014, April). *Examining the importance of students' sense of belonging in school*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Palma, J.R., Van Boekel, M., Stanke, L., Vue, Y., Cabrera, J.C., Chang, Y., Latterell, N., Karl, S.R., Rodriguez, M.C., & Bulut, O. (2014, April). *Examining after school activities: Do breadth and intensity matter?* Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Bulut, O., Stanke, L., Rodriguez, M.C., Palma, J., Vue, Y., & Cabrera, J.C. (2013, April). *Examining item parameter drift as a source of construct shift*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

- Stanke, L., Palma, J., Bulut, O., & Rodriguez, M.C. (2013, April). *Investigating measurement invariance assumptions using item parameter drift across grade levels and ELL groups*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.
- Vue, Y., Stanke, L., Palma, J.R., Cabrera, J.C., Bulut, O., Latterell, N., Rodriguez, M.C. (2013, April). *Using school climate to positively develop youth*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Palma, J., Rodriguez, M.C., Cabrera, J.C., Albano, A.D., Vue, Y. Warshawsky, A.J. (2012, April). *Effects of positive assets and socio-economic status on academic performance*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, Canada.
- Warshawsky, A.J., Rodriguez, M.C., Cabrera, J.C., Palma, J., Albano, A.D., & Vue, Y. (2012, April). *Attitudes toward school and school plans given levels of family alcohol, substance, and physical abuse*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, Canada.
- Cabrera, J., & Rodriguez, M.C. (2011, April). *Latino youth's beliefs and attitudes and their influence on after-school activity participation*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Cabrera, J., & Rodriguez, M.C. (2010, May). *Positive Latino youth development: The impact of perceived community support on Latino youths' school plans*. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.
- Rodriguez, M.C., Albano, A.D., Maeda, Y., & Jung, T. (2008). *A look at out-of-school time activities and individual characteristics of youth: Secondary data analysis of the Minnesota Student Survey, the MN Household Child Care Study, and the Search Institute Attitudes & Behavior Survey*. Minneapolis, MN: Applied Research Collaborative on Youth Development, Extension Service, University of Minnesota.
- Rodriguez, M.C., Maeda, Y., Albano, A.D., & Jung, T. (2008). *Investigating out-of-school time experiences: Background, attitudes, values, and beliefs*. Minneapolis, MN: Applied Research Collaborative on Youth Development, Extension Service, University of Minnesota.
- Rodriguez, M.C., Jung, T., Maeda, Y., Hernandez, A. (2007, April). *Investigating out-of-school time experiences: Background, attitudes, values, and beliefs*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.