Table A1.

Parameter estimates, standard errors, and log-likelihoods obtained by fitting a multilevel linear model with a categorical level 1 covariate (sex) to the language proficiency data of Snijders and Bosker (1999) as a traditional multilevel linear model in SAS PROC MIXED and as a structural equation model in M*plus*. Data was selected to be balanced (i.e., 3 male and 3 female students sampled from each school).

Parameter	PROC MIXED		M*plus*	
β_0	39.333	(0.624)	39.334	(0.624)
β_1	2.925	(0.618)	2.925	(0.618)
τ_{00}	25.327	(6.077)	25.321	(6.077)
τ_{11}	4.572	(6.378)	4.558	(6.377)
τ_{10}	-8.821	(5.106)	-8.813	(5.105)
σ	59.628	(3.915)	59.632	(3.915)
LL	-2473.70		-2473.72	

Table A2.

Parameter estimates, standard errors, and log-likelihoods obtained by fitting a multilevel linear model with a categorical level 1 covariate (sex) to the language proficiency data of Snijders and Bosker (1999) as a traditional multilevel linear model in SAS PROC MIXED and as a structural equation model in M*plus*. Data was unbalanced (i.e., different numbers of male and female students were sampled in different schools). The missing data approach was utilized to fit the multilevel linear model with unbalanced data as a structural equation model.

Parameter	PROC MIXED		M*plus*	
β_0	39.116	(0.475)	39.116	(0.475)
β_1	2.629	(0.380)	2.629	(0.380)
τ_{00}	21.794	(3.812)	21.809	(3.625)
τ_{11}	3.417	(2.261)	3.418	(2.226)
τ_{10}	-3.590	(2.430)	-3.587	(2.226)
σ	62.126	(1.950)	62.123	(1.943)
LL	-8096.55		-8096.54	

Table A3.

Parameter estimates, standard errors, and log-likelihoods obtained by fitting a multilevel linear model with a continuous level 1 covariate (verbal IQ) to the language proficiency data of Snijders and Bosker (1999) as a traditional multilevel linear model in SAS PROC MIXED and as a structural equation model in M*plus*. Because the covariate was continuous, the data was naturally unbalanced. Case-varying factor loadings were utilized to fit the multilevel linear model with unbalanced data as a structural equation model.

Parameter	PROC MIXED		M*plus*	
β_0	40.709	(0.304)	40.710	(0.304)
β_1	2.526	(0.081)	2.526	(0.081)
τ_{00}	9.353	(1.524)	9.354	(1.493)
τ_{11}	.210	(.101)	.210	(.099)
τ_{10}	-1.145	(.314)	-1.145	(.294)
σ	41.481	(1.294)	41.480	(1.291)
LL	-7615.39		-7615.39	

Table A4.

Parameter estimates, standard errors, and log-likelihoods obtained by fitting a 2-Factor multilevel linear model for teacher perceptions of control of school versus classroom policies to the High-School and Beyond dataset as a traditional multilevel linear model using SAS PROC MIXED and as a structural equation model using M*plus*.

Parameter	PROC MIXED (Unit Loadings)	M*plus* (Estimated Loadings)	PROC MIXED (Loadings Fixed to Estimated Values)
λ_1	1.0	1.0	1.0
λ_2	1.0	.984 (.023)	.984
λ_3	1.0	1.137 (.024)	1.137
λ_4	1.0	1.273 (.025)	1.273
λ_5	1.0	1.0	1.0
λ_6	1.0	.982 (.017)	.982
λ_7	1.0	.547 (.011)	.547
λ_8	1.0	.609 (.010)	.609
λ_9	1.0	.428 (.010)	.428
$\tau_{\pi 11}$	.634 (.014)	.525 (.018)	.525 (.011)
$\tau_{\pi 22}$	.280 (.006)	.645 (.020)	.645 (.013)
$\tau_{\pi 21}$	.178 (.006)	.270 (.010)	.270 (.009)
$\tau_{\beta 11}$	.257 (.021)	.208 (.017)	.208 (.017)
$\tau_{\beta 22}$	.055 (.005)	.154 (.014)	.155 (.013)
$\tau_{\beta 21}$	.071 (.008)	.114 (.012)	.115 (.012)
σ_1	1.182 (.020)	1.256 (.021)	1.255 (.020)
σ_2	1.415 (.024)	1.490 (.024)	1.488 (.024)
σ_3	1.400 (.023)	1.383 (.024)	1.375 (.023)
σ_4	1.166 (.020)	1.007 (.022)	1.008 (.020)
σ_5	1.288 (.019)	.971 (.018)	.968 (.017)
σ_6	.858 (.013)	.589 (.013)	.589 (.012)
σ_7	.301 (.006)	.372 (.006)	.375 (.006)
σ_8	.936 (.014)	1.020 (.015)	1.009 (.015)
σ_9	.378 (.007)	.463 (.007)	.463 (.007)
LL	-137674.16	-136853.50	-136906.63