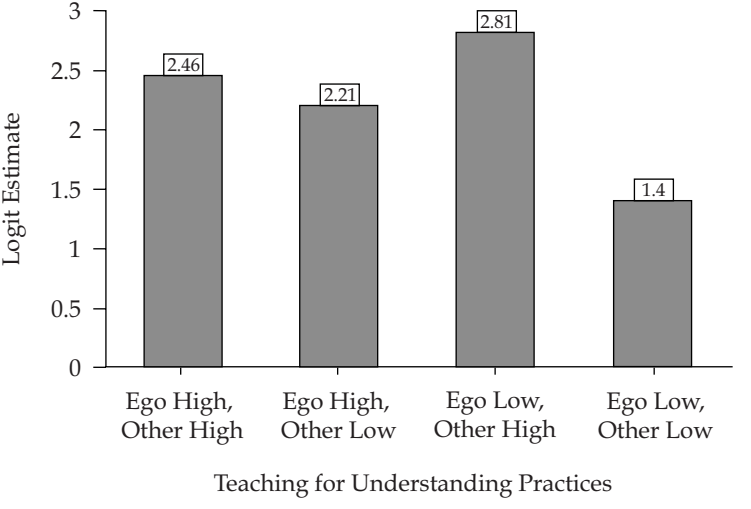
FIGURE 6.1 / Logit Estimates for Change in Likelihood of Seeking Help from a Colleague at Different Levels of Teaching for Understanding



Source: Authors' calculations.

TABLE 6.1 / Association Between Teaching for Understanding and Colleague Ties

Predictor	1997		1998		1999	
Ego's background						
Experience in this school	–.04	(.04)	–.02	(.02)	–.14	(.08)
Grade level	.06	(.12)	.26*	(.12)	.09	(.15)
Year in SAMM[a]			–.99	(.55)	.29	(.43)
Other's background						
Experience in this school	–.00	(.03)	–.04	(.03)	–.14*	(.07)
Member of SAMM	5.65*	(.83)	3.82*	(.82)	2.44*	(.65)
Year in SAMM[a]			.38	(.42)	.45	(.29)
Dyad context						
Same grade	1.75*	(.36)	2.49*	(.37)	1.20*	(.39)
Same school	2.30*	(.37)	3.03*	(.36)	2.18*	(.39)
Teaching for understanding						
Ego's beliefs	–.68	(1.30)	1.25	(1.41)	–1.16	(1.55)
|Ego—other's beliefs|[b]	–6.86	(8.06)	6.93	(11.05)	–2.71	(11.51)
Interaction (beliefs)[c]	2.06	(2.35)	–2.30	(3.33)	.77	(3.49)
Ego's practices	.12	(.11)	.03	(.11)	.17	(.10)
|Ego—other's practices|[d]	.12	(.23)	.16	(.20)	.58*	(.23)
Interaction (practices)[e]	–.02	(.02)	–.01	(.02)	–.04*	(.02)
Network controls						
Gregariousness	.21*	(.02)	.19*	(.02)	.27*	(.03)
Popularity	.43*	(.07)	.35*	(.09)	.65*	(.11)
Constant	–11.76		–15.16		–9.52	
Number of dyads	1,584		1,638		1,292	
Model fit (cases predicted correctly)	96.8%		97.0%		96.5%	

Source: Authors' calculations.

Note: Parameters are logistic regression coefficients, with standard errors in parentheses. Dependent variable: Other is named as colleague.

[a]All egos were members of SAMM, but some joined after 1997. About one-third of others were members of SAMM.

[b]Absolute value of difference between ego's and other's beliefs.

[c]Interaction between ego's beliefs and absolute value of difference between ego's and other's beliefs.

[d]Absolute value of difference between ego's and other's practices.

[e]Interaction between ego's practices and absolute value of difference between ego's and other's practices.

*p < .05

TABLE 6A.1 / Means and Standard Deviations of Independent Variables

Predictor	1997 Mean (Standard Deviation)	1998 Mean (Standard Deviation)	1999 Mean (Standard Deviation)
Ego's background			
Experience in this school	5.48 (5.38)	6.26 (5.30)	5.53 (3.05)
Grade level	2.86 (1.32)	2.86 (1.36)	2.37 (1.72)
Year in SAMM[a]	1 (0)	1.90 (.29)	2.58 (.75)
Other's background			
Experience in this school	5.87 (5.40)	5.97 (5.75)	6.47 (5.40)
Member of SAMM	.39 (.49)	.36 (.48)	.31 (.46)
Year in SAMM[a]	.39 (.49)	.67 (.86)	.96 (1.20)
Dyad context			
Same grade	.27 (.44)	.25 (.43)	.20 (.40)
Same school	.23 (.42)	.23 (.42)	.21 (.41)
Teaching for understanding			
Ego's beliefs	3.40 (.27)	3.32 (.23)	3.34 (.25)
|Ego—other's beliefs|[b]	.41 (.31)	.33 (.25)	.38 (.28)
Ego's practices	11.48 (3.13)	11.06 (3.08)	11.33 (3.11)
|Ego—other's practices|[c]	4.12 (3.00)	4.04 (2.80)	4.38 (3.18)
Network controls			
Gregariousness	8.27 (11.60)	9.33 (12.48)	8.58 (9.11)
Popularity	2.08 (3.12)	2.21 (2.86)	1.67 (2.63)
Number of dyads	1,584	1,638	1,292

Source: Authors' calculations.

[a]All egos were members of SAMM, but some joined after 1997. About one-third of others were members of SAMM.

[b]Absolute value of difference between ego's and other's beliefs.

[c]Absolute value of difference between ego's and other's practices.

TABLE 8.1 / Cross-Classification of Organizational Contexts with Types of Conduct

Types of Conduct	Organizational Contexts: Formal or Prescribed Relational Channels	Organizational Contexts: Informal or Emergent Relational Channels
Task or work	Formal relations used in work. Example: staying within prescribed channels to get work done (for example, following task rules).	Informal relations used in work. Example: going outside prescribed channels to get work done (for example, using friends).
Sociable or play	Formal relations used in play. Example: staying within prescribed channels to socialize about topics unrelated to work.	Informal relations used in play. Example: going outside prescribed channels to socialize about topics unrelated to work.

Source: Author's compilation.

TABLE 8.2 / Cross-Classification of Types of Status with Types of Conduct

Types of Conduct	Types of Status: Academic-Status Political Resources	Types of Status: Peer-Status Political Resources
Task or work	Academic status salient in work. Example: formal leader dominates work.	Peer status salient in work. Example: informal leader dominates work.
Sociable or play	Academic status salient in play. Example: formal leader dominates play.	Peer status salient in play. Example: informal leader dominates play.

Source: Author's compilation.

TABLE 8.3 / Decomposition of Variance for Task and Social Participation

Variance Components	First Semester	Second Semester	Second Semester Net of First
Task participation			
Classroom-level variance τ_{00}	.14	.14	.06
Individual-level variance σ^2	.39	.42	.16
Intraclass correlation ρ	.27	.25	.16
Social participation			
Classroom-level variance τ_{00}	.23	.30	.15
Individual-level variance σ^2	.62	.61	.44
Intraclass correlation ρ	.27	.33	.25

Source: Author's compilation.

Note: ρ indicates the proportion of total variance that occurs between classrooms: $\rho = \tau_{00}/(\tau_{00} + \sigma^2)$.

TABLE 8.4 / Cross-Sectional First-Semester Models: Multilevel Coefficients from the Regression of First-Semester Task Participation (Log) on Selected Predictors

Explanatory Variables (N = 751)	Model 1 b*	Model 2 b*	Model 3 b*	Model 4 b*
Intercept	—***	—***	—***	—**
Background variables				
Magnet minority[a]	.04	.05	.05	.05
River town[a]	–.23**	–.23**	–.24**	–.18*
River rural[a]	–.16*	–.16*	–.17**	–.12
Female gender	.02	.01	.00	.00
Lower grade level	.02	.01	–.01	.00
Non-nuclear family	–.02	–.01	.00	.00
Highest parent occupational status	.04	.04	.03	.03
Missing occupational status	.00	.04	.03	.03
Physical attractiveness[b]	.12***	.11**	.06	.06
Standing in school[b]				
Academic standing in school		.11**	.08	.07
Social standing in school		.03	–.04	–.04
Standing in class[c]				
Academic standing in class			.07*	.07*
Social standing in class			.20***	.20***
Density of ego's network			.03	.02
Classroom characteristics[d]				
Teacher-controlled instruction				–.17*
Friendly classroom relations				.14
Likelihood ratio χ^2				
Unconditional model comparison (df)	–8 (9)[ns]	–9 (11)[ns]	16 (14)[ns]	23 (16)[ns]
Prior model comparison (df)	–8 (9)[ns]	–1 (2)[ns]	25 (3)***	7 (2)*
Log likelihood	1,508.7	1,509.3	1,484.7	1,477.6

Source: Author's compilation.
Note: $b^* = \beta (s_x/s_y)$. Percentage change = exp (b*) –1. To get raw data, b = exp (b* (s_x/s_y)) –1.
[a]Magnet majority is the baseline comparison group for regional variables.
[b]These variables are mean-centered within each school.
[c]These variables are mean-centered within each classroom.
[d]Classroom characteristics are level-two variables with N = 36.
*p < .05; **p < .01; ***p < .001

TABLE 8.5 / Longitudinal Models: Multilevel Coefficients from the Regression of Second-Semester Task Participation (Log) on Selected Lagged Predictors

Explanatory Variables (N = 467)	Model 1 b*	Model 2 b*	Model 3 b*	Model 4 b*
Intercept	—***	—***	—***	—
Past participation				
Task interaction (log)	.47***	.43***	.42***	.40***
Social interaction (log)	.01	.04	.02	.00
Background variables				
Magnet minority[a]	.06	.08	.08	.07
River town[a]	–.02	–.01	–.02	.10
River rural[a]	.07	.07	.07	.14*
Female gender	–.05	–.08*	–.08*	–.08*
Lower grade level	.02	–.01	–.01	.04
Non-nuclear family	.04	.05	.05	.05
Highest parent occupational status	.07	.05	.06	.06
Missing occupational status	–.16***	–.14***	–.13***	–.13***
Physical attractiveness[b]	.10*	.09*	.07	.08*
Standing in school[b]				
Academic standing in school		.18***	.18***	.18***
Social standing in school		.08*	.06	.06
Standing in class[c]				
Academic standing in class			.01	.00
Social standing in class			.10*	.10*
Density of ego's network			–.07+	–.08*
Classroom characteristics[d]				
Teacher-controlled instruction				–.30**
Friendly classroom relations				.18+
Likelihood ratio χ^2				
Unconditional model comparison (df)	5 (9)[ns]	17 (11)*	14 (14)[ns]	27 (16)*
Prior model comparison (df)	5 (9)[ns]	13 (2)**	–4 (3)[ns]	13 (2)**
Log likelihood	864.1	851.5	855.1	842.4

Source: Author's compilation.
Note: $b^* = \beta (s_x/s_y)$. Percentage change = exp (b*) –1. To get raw data, $b = \exp (b^* (s_x/s_y)) - 1$.
[a]Magnet majority is the baseline comparison group for regional variables.
[b]These variables are mean-centered within each school.
[c]These variables are mean-centered within each classroom.
[d]Classroom characteristics are level-two variables with N = 36.
+p < .10 (for classroom level only); *p < .05; **p < .01; ***p < .001

TABLE 8.6 / Cross-Sectional First-Semester Models: Multilevel Coefficients from the Regression of First-Semester Social Participation (Log) on Selected Predictors

Explanatory Variables (N = 751)	Model 1 b*	Model 2 b*	Model 3 b*	Model 4 b*
Intercept	—***	—***	—***	—
Background variables				
Magnet minority[a]	.04	.04	.03	.03
River town[a]	–.19*	–.18	–.19*	–.10
River rural[a]	–.14	–.13	–.14*	–.08
Female gender	.06*	.07*	.05	.05
Lower grade level	.08	.07	.02	.03
Non-nuclear family	.04	.04	.05	.06
Highest parent occupational status	.04	.05	.04	.04
Missing occupational status	.03	.02	.01	.01
Physical attractiveness[b]	.19***	.17***	.10**	.10**
Standing in school[b]				
Academic standing in school		–.08*	–.03	–.04
Social standing in school		.09*	.00	.00
Standing in class[c]				
Academic standing in class			–.08*	–.08*
Social standing in class			.32***	.32***
Density of ego's network			.10**	.09**
Classroom characteristics[d]				
Teacher-controlled instruction				–.17*
Friendly classroom relations				.25**
Likelihood ratio χ^2				
Unconditional model comparison (df)	23 (9)**	30 (11)**	127 (14)***	145 (16)***
Prior model comparison (df)	23 (9)**	22 (2)***	96 (3)***	19 (2)***
Log likelihood	1,816.6	1,809.4	1,713.1	1,693.9

Source: Author's compilation.
Note: $b^* = \beta (s_x/s_y)$. Percentage change = exp (b*) –1. To get raw data, b = exp (b* (s_x/s_y)) –1.
[a]Magnet majority is the baseline comparison group for regional variables.
[b]These variables are mean-centered within each school.
[c]These variables are mean-centered within each classroom.
[d]Classroom characteristics are level-two variables with N = 36.
*p < .05; **p < .01; ***p < .001

TABLE 8.7 / Longitudinal Models: Multilevel Coefficients from the Regression of Second-Semester Social Participation (Log) on Selected Lagged Predictors

Explanatory Variables (N = 467)	Model 1 b*	Model 2 b*	Model 3 b*	Model 4 b*
Intercept	—***	—***	—***	—
Past participation				
Social interaction (log)	.41***	.40***	.38***	.38***
Task interaction (log)	.12**	.12**	.11*	.10*
Background variables				
Magnet minority[a]	.00	.01	.01	.01
River town[a]	–.07	–.06	–.07	.00
River rural[a]	.11	.12	.11	.16*
Female gender	.00	.00	.00	.00
Lower grade level	.02	.00	.00	.04
Non-nuclear family	.06	.06	.06	.06
Highest parent occupational status	.07*	.08*	.09**	.09**
Missing occupational status	–.11***	–.11**	–.10**	–.10**
Physical attractiveness[b]	.15***	.13***	.12***	.12***
Standing in school[b]				
Academic standing in school		–.02	–.03	–.04
Social standing in school		.10**	.07*	.07*
Standing in class[c]				
Academic standing in class			.03	.03
Social standing in class			.09**	.09**
Density of ego's network			–.04	–.05
Classroom characteristics[d]				
Teacher-controlled instruction				–.15
Friendly classroom relations				.22*
Likelihood ratio χ^2				
Unconditional model comparison (df)	30 (9)***	28 (11)**	24 (14)*	33 (16)**
Prior model comparison (df)	30 (9)***	–2 (2)[ns]	–4 (3)[ns]	9 (2)*
Log likelihood	959.1	961.3	964.9	955.9

Source: Author's compilation.
Note: $b^* = \beta (s_x/s_y)$. Percentage change = exp (b*) –1. To get raw data, b = exp (b* (s_x/s_y)) –1.
[a]Magnet majority is the baseline comparison group for regional variables.
[b]These variables are mean-centered within each school.
[c]These variables are mean-centered within each classroom.
[d]Classroom characteristics are level-two variables with N = 36.
*p < .05; **p < .01; ***p < .001

TABLE 9.1 / Selected MGCFA Measurement Model Parameters for Tenth-Grade Biology and Chemistry Students, Derived from Reports of How Often They Participated in Noted Activities in Their Current Science Classes (Unstandardized Coefficients)

	Biology			Chemistry		
FA Model Parameters	Teacher Agentic	Shared Agentic	Student Agentic	Teacher Agentic	Shared Agentic	Student Agentic
Actor loadings						
Review work from previous day	0.269***	#	0.318***	0.269+	#	0.318+
Take notes in class	0.645***	#	#	0.645+	#	#
Listen to teacher lecture	1.000+	–0.272***	#	1.000+	–0.272+	#
Watch teacher demonstration	0.368***	0.487***	#	0.368+	0.487+	#
Use books to do experiment	#	1.000+	–0.309***	#	1.000+	–0.309+
Conduct own experiment	#	#	1.031***	#	#	1.031+
Write reports on experiments	#	0.673***	#	#	0.673+	#
Choose own topic to study	#	#	1.000+	#	#	1.000+
Discuss careers in science	0.218***	#	0.566***	0.218+	#	0.566+
Make up methods to solve problems	#	0.183***	1.035***	#	0.183+	1.035+
Item probit thresholds						
Review work from previous day—1	–0.663***			–0.663+		
Review work from previous day—2	0.024			0.024+		
Take notes in class—1	–0.919***			–0.919+		
Take notes in class—2	–0.290***			–0.290+		
Take notes in class—3	0.619***			0.619+		
Listen to teacher lecture—1	–0.682***			–0.682+		
Listen to teacher lecture—2	0.251***			0.251+		
Watch teacher demonstration—1	0.048***			0.048+		
Watch teacher demonstration—2	0.972***			0.972+		
Use books to do experiments—1	–0.076***			–0.076+		
Use books to do experiments—2	0.841***			0.841+		
Conduct own experiment—1	0.819***			0.819+		

TABLE 9.1 / *Continued*

	Biology			Chemistry		
FA Model Parameters	Teacher Agentic	Shared Agentic	Student Agentic	Teacher Agentic	Shared Agentic	Student Agentic
Conduct own experiment—2	1.368***			1.368+		
Write reports on experiments—1	–0.374***			–0.946***		
Write reports on experiments—2	0.226***			–0.225***		
Choose own topic to study—1	0.778***			0.778+		
Choose own topic to study—2	1.160***			1.160+		
Discuss careers in science	0.346***			0.346+		
Discuss careers in science	1.000***			1.000+		
Make up methods to solve problems—1	0.819***			0.819+		
Make up methods to solve problems—2	1.259***			1.259+		
Factor variances and covariances						
Teacher agentic	0.671***			0.648***		
Shared agentic	0.289***	0.750***		0.353***	0.733***	
Student agentic	0.111***	0.403***	0.491***	0.171***	0.320***	0.431***
Factor means	0.000+	0.000+	0.000+	0.285***	0.272***	0.000+
Multigroup model fit information (robust weighted least squares)						
Chi-square/df				407.54 / 62		
RMSE				0.042		
CFI				0.954		
TLI				0.960		
Number of cases in combined sub-sample				6,367		

Source: U. S. Department of Education (1996).

Notes: Data weighted to be representative of 1990 public high school sophomores enrolled in biology or chemistry in grade ten. The sample analyzed here is a teacher-matched sample for biology and chemistry students. All item scale factors—"delta parameters" in the parameterization of Muthén (Muthén and Christoffersson 1981)—restricted to 1.0 for both biology and chemistry respondents. Factors scaled to the same item for both subgroups to facilitate cross-group comparison of factor loadings and item thresholds.

***$\alpha < .01$; **$\alpha < .05$; *$\alpha < .10$ (two-tailed tests); # parameter set to zero; +parameter value fixed (within or across groups)

TABLE 9.2 / Selected Parameters from the MGSEM Regressing Student Instructional Experiences and Engagement on Various Student, Classroom, and School Covariates: Simultaneous Outcome Measures for Public High School Students Enrolled in Biology or Chemistry in Grade Ten (Unstandardized Coefficients)

	Teacher-Agentic Instruction		Shared-Agentic Instruction		Student-Agentic Instruction		Student Engagement	
Variable or Parameter	Biology	Chemistry	Biology	Chemistry	Biology	Chemistry	Biology	Chemistry
Student background and motivations								
Minority student	0.134**	+	0.209** …	0.428***	0.101*	0.252***	0.011	+
Female	0.200***	0.116*	–0.085	–0.009	–0.241***	+	0.065**	0.007
Parent education (college versus none)	0.082*	+	0.031	+	0.130** …	–0.101	–0.003 …	–0.155***
Ln parent income	0.000+	+	0.082**	–0.010	–0.038	0.004	0.008	+
Grade eight test score	0.002	+	0.000+	+	–0.008***	+	–0.005***	+
Educational expectations: less than college	0.112** …	–0.074	0.092*	–0.045	–0.010	0.072	0.027	+
Taking science because wants to (not assigned or required)	0.281***	0.176**	0.317***	0.364***	0.297***	+	0.044	0.092**
School demographic context								
Urban school	–0.023	+	–0.040	+	–0.049	+	0.059	-0.080
School size (ln number of full-time faculty)	0.000+	+	0.055* …	–0.079***	0.012 …	–0.055**	–0.011	0.015
More than 15 percent students black or Hispanic	–0.097	–0.206*	0.141	–0.043	0.040	+	0.055 …	–0.154**

(*Table continues on p. 190.*)

TABLE 9.2 / *Continued*

Variable or Parameter	Teacher-Agentic Instruction		Shared-Agentic Instruction		Student-Agentic Instruction		Student Engagement	
	Biology	Chemistry	Biology	Chemistry	Biology	Chemistry	Biology	Chemistry
Ln percentage of students receiving free lunch	0.000+	+	0.014**	+	0.007	+	0.001+	+
School academic and professional context								
Academic press	–0.046	+	0.151*	–0.030	–0.048	–0.132	0.008 …	–0.163**
Teacher professional environment	–0.078	0.035	0.068 …	0.514***	–0.007	0.215(*)	0.110(*)	0.048
Three or more years of science required	0.000+	+	–0.164**	+	0.177** …	–0.012	–0.019	+
Curricular revision program for critical thinking	0.033	+	0.057	+	–0.023	0.031	0.019	+
Classroom resources or constraints								
Ln of class enrollment	0.023	0.110	–0.237*** …	0.131	–0.133(**) …	0.231*	0.002	–0.047
Class achievement level	–0.065	0.099	–0.129* …	0.225*	–0.019	0.008	–0.109 …	0.029
Teacher degree level	0.008	+	–0.015 …	0.249**	–0.003	0.139	–0.023	0.027
Teacher goals, mandates, beliefs								
Goal: students enjoy, become independent	0.074	–0.078	–0.094	0.016	–0.070(*)	+	–0.108 …	0.009
Goal: students do well on tests	0.077	+	–0.089	–0.158	–0.107*	0.057	0.070*	–0.037

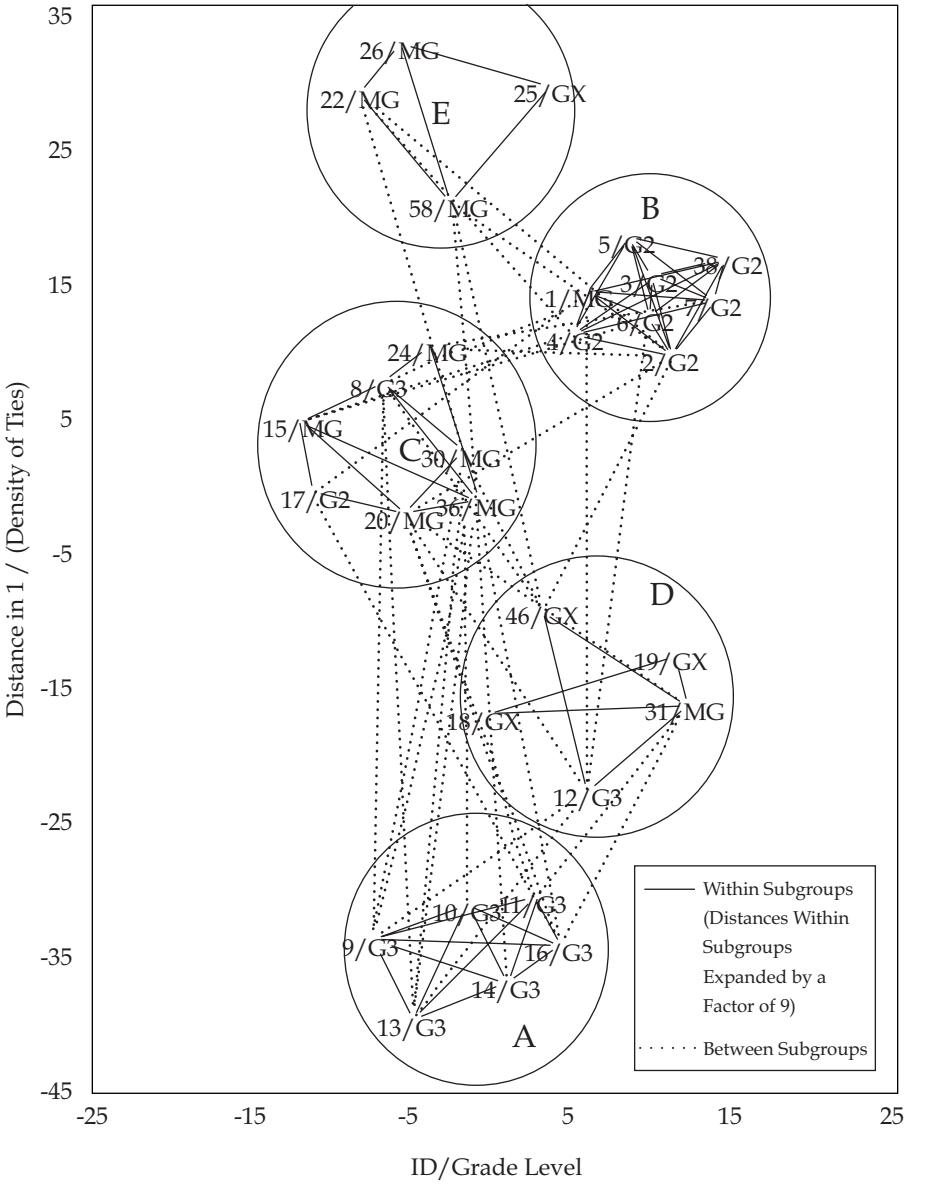
Teacher mandate: experiment, innovate	0.161***	0.018	0.093	0.190*	0.020	…	0.232**	0.015	+
Belief: instruction can influence achievement	–0.045	0.082	0.069	–0.035	0.121**		–0.010	–0.070*	–0.025
Student instructional experiences									
Teacher agentic instruction	—	—	—	—	—		—	0.356***	+
Shared agentic instruction	—	—	—	—	—		—	–0.021	… 0.079**
Student agentic instruction	—	—	—	—	—		—	0.165***	… –0.085*
Outcome variable means	0.000+	+	0.000+	+	0.000+	…	–1.670(**)	0.000+	+
Model fit information									
CFI/standard deviation of CFIs	0.929 / 0.003								
TLI/standard deviation of TLIs	0.921 / 0.004								
RMSE/standard deviation of RMSEs	0.024 / 0.001								
Number of free parameters	192								

Soruce: U.S. Department of Education (1996).

Notes: Data weighted to be representative of 1992 public high school sophomores enrolled in biology (N = 2,195) or chemistry (N = 1,119). Standard errors are robust standard errors adjusted for NELS:88–94 sample design. Estimation is via a robust WLS algorithm. Coefficients and model fit statistics are combined results from forty independent imputations using the method of Rubin (1987). The three instructional experience measures are posited as mediating between the student, school, and classroom predictor variables and student engagement and are incorporated into the MGSEM as a multigroup CFA measurement model.

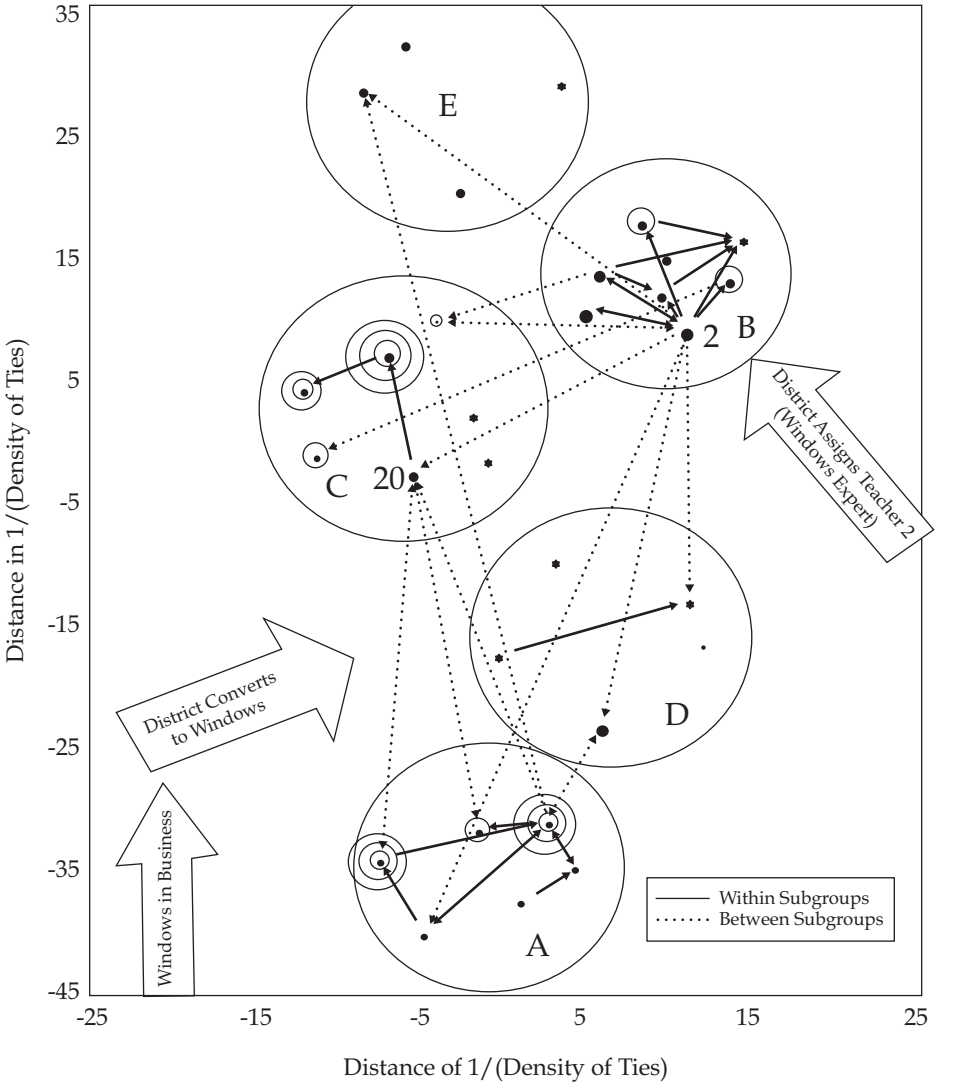
***$\alpha < .01$; **$\alpha < .05$; *$\alpha < .10$; + parameter fixed within or across curricular positions; boxed coefficients are statistically significant across curricular positions after parameter covariances are taken into account ($\alpha < .10$)

FIGURE 10.1 / Crystallized Sociogram of Collegial Ties at Westville Elementary School



Source: Authors' compilation.

FIGURE 10.2 / Talk About Technology Within and Between Subgroups at Westville, Including Changes in Levels of Technology Use



Source: Authors' compilation.
Note: • = base level use (* is unknown); circles indicate increases.

TABLE 10.1 / Cross-Nested Multilevel Logistic Regression (p_2-Like Social Network Model) of Talk with i′ About Technology Reported by i

Independent Variable	Coefficient	Approximate Standard Error	t-Ratio	Odds Ratio
Pair level				
Formal: same grade	1.390	.129	10.78	4.015
Informal: same subgroup	.270	.137	1.971	1.31
Ascriptive: same gender	.204	.163	1.252	1.226
Balance: difference in perceptions regarding value for teachers	–.217	.090	–2.41	0.805
Balance: difference in perceptions regarding value for students	.162	.101	1.604	1.176
Social: colleague	2.756	.137	20.12	15.74
Social: collegial structural similarity	.004	.055	0.07	1.004
Social: number of i′ colleagues minus number of i colleagues	–.010	.030	–0.33	0.99
Reciprocity: talk from i′ to i	1.271	.141	9.014	3.564
Characteristics of school actor i				
School introduces many new things	.245	.060	4.083	1.278
Class size	–.005	.008	–0.63	0.995
New subject taught	–.208	.151	–1.38	0.812

Variance Components

	Unconditional	Unconditional as Percentage
Nominator (i)	.10	10.53
Nominee (i′)	.85	89.47

Source: Authors′ compilation.
Notes: School effects are not reported. The data analyzed are for 433 school actors. The total number of pairs = 10,322 (only pairs within schools were analyzed).

TABLE 10.2 / Cross-Nested Multilevel Logistic Regression (p_2-Like Social Network Model) of Talk with i′ About Curriculum Reported by i

Independent Variable	Coefficient	Approximate Standard Error	t-Ratio	Odds Ratio
Pair level				
Formal: same grade	1.793	.123	14.58	6.007
Informal: same subgroup	.346	.126	2.746	1.413
Ascriptive: same gender	.348	.156	2.231	1.416
Balance: difference in perceptions regarding value for teachers	–.147	.084	–1.75	0.863
Balance: difference in perceptions regarding value for students	.175	.097	1.804	1.191
Social: colleague	2.685	.119	22.56	14.66
Social: collegial structural similarity	.093	.052	1.788	1.097
Social: number of i′ colleagues – number of i colleagues	–.016	.029	–0.55	0.984
Reciprocity: talk from i′ to i	1.443	.131	11.02	4.233
Characteristics of school actor i				
School introduces many new things	.248	.072	3.444	1.281
Class size	–.017	.009	–1.89	0.983
New subject taught	–.421	.188	–2.24	0.656

Source: Authors′ compilation.
Notes: School effects are not reported. The data analyzed are for 433 school actors. The total number of pairs = 10,322 (only pairs within schools were analyzed).

TABLE 10.3 / Cross-Nested Multilevel Logistic Regression (p_2-Like Social Network Model) of Emergence of New Collegial Ties Reported by i with i′

Independent Variable	Coefficient	Approximate Standard Error	t-Ratio	Odds Ratio
Pair level				
Formal: same grade	.810	.207	3.913	2.248
Informal: same subgroup	.660	.153	4.314	1.935
Technology talk (reported by i with i′), time 1	.535	.066	8.106	1.707
Technology talk (reported by i with i′), time 2	.292	.092	3.174	1.339
Social: collegial structural similarity	.075	.017	4.412	1.078
Social: number of i′ colleagues—number of i colleagues	.143	.031	4.613	1.154
i′ provided technology help to i, time 1	.004	.0063	0.635	1.004
i′ provided technology help to i, time 2	.004	.0067	0.597	1.004

Source: Authors' compilation.
Notes: School effects are not reported. The data analyzed are for 101 school actors. The total number of pairs = 2,831 (only pairs within schools were analyzed).

TABLE 11.1 / Gender Stratification in Forty Countries by Level of Economic Development

	Level 1: Low Economic Development	Level 2: Medium Economic Development	Level 3: High Economic Development
Gender stratification in the home			
Total fertility rate	2.46	2.00	1.87
	(1.25)	(1.04)	(.45)
Access to abortion	.60	.67	.67
	(.52)	(.52)	(.48)
Gender stratification in employment			
Women's share of the labor force	43.00	41.50	41.21
	(8.11)	(3.73)	(4.17)
Women's economic rate	54.8	48.33	50.75
	(13.31)	(7.09)	(8.70)
Gender stratification in government			
Women's representation in government	10.28	9.60	13.44
	(8.33)	(6.35)	(8.49)
Women's representation at sub-ministerial level of government	11.18	11.03	12.46
	(9.09)	(7.30)	(8.96)

Source: WISTAT, version 4.

TABLE 11.2 / The Effects of Gender Stratification on the Gap in Math and Science Achievement: HLM Analyses

	Math Coefficients	Science Coefficients
Level 2 models (N = 36)		
Model predicting B_1 (female slope)		
Women's status in government	2.864**	3.777*
Women's status in home and at work	.456	–5.451
National average test score	.075**	.331***
Level of economic development	–2.268	.044
Intercept	–2.136	–12.428***
Level 1 models (N = 184,290)		
Female, B_1	–3.492***	–12.962***
Maternal education level, B_2	10.538***	9.361***
Socioeconomic status, B_3	15.104***	13.982***
Intercept, B_0	470.030***	479.099***
Partition of variance (unconditional model)		
Level 2 (between countries)	25%	16%
Level 1 (between students)	75%	84%

	Variance	Degrees of Freedom	Chi-Square
Random effects (math model)			
Intercept, U_0	1,471.35	32	4,258.48***
SES slope, U_1	112.35	35	519.583***
Female slope, U_2	54.40	31	260.68***
Mated slope	8.86	35	472.07***
Random effects (science model)			
Intercept, U_0	1,236.86	32	2,764.30***
SES slope, U_1	126.54	35	571.43***
Female slope, U_2	264.38	31	926.92***
Mated slope	9.66	35	439.63***

Source: TIMSS, population 2 student data, and WISTAT, version 4.
Notes: Student-level data are weighted to account for the multistage sampling design. Table displays selected coefficients from complete model which also estimated level 2 effects on B_0. Level 2 controls for average math and science test score in B_1 models are grand-mean centered.
*p < .10; **p < .05; ***p < .01 (two-tailed tests with robust standard errors)

TABLE 11.3 / The Effects of Gender Stratification on the Gap in Math and Science Attitudes: HLM Analyses

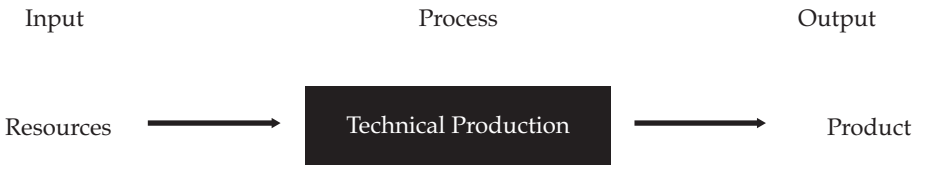
	Math Coefficients	Science Coefficients
Level 2 models (N = 34)		
Model predicting B_1 (female slope)		
Women's status in government	−.005	−.065
Women's status in home and at work	.463***	.909***
National average attitude score	1.035***	1.386***
Level of economic development	−.258	.778***
Intercept	−.213	−.514**
Level 1 models (N = 157,140)		
Female, B_1	−.351***	−.030
Maternal education level, B_2	.100***	.109***
Socioeconomic status, B_3	.261***	.167***
Intercept, B_0	7.86***	7.91***
Partition of variance (unconditional model)		
Level 2 (between countries)	8%	9%
Level 1 (between students)	92%	91%

	Variance	Degree of Freedom	Chi-Square
Random effects (math model)			
Intercept, U_0	.551	30	1,864.84***
SES slope, U_1	.019	33	99.43***
Female slope, U_2	.505	29	2,526.87***
Mated slope, U_3	.002	33	142.64***
Random effects (science model)			
Intercept, U_0	.531	30	2,177.60***
SES slope, U_1	.027	29	199.44***
Female slope, U_2	.502	29	5,160.67***
Mated slope, U_3	.004	33	201.94***

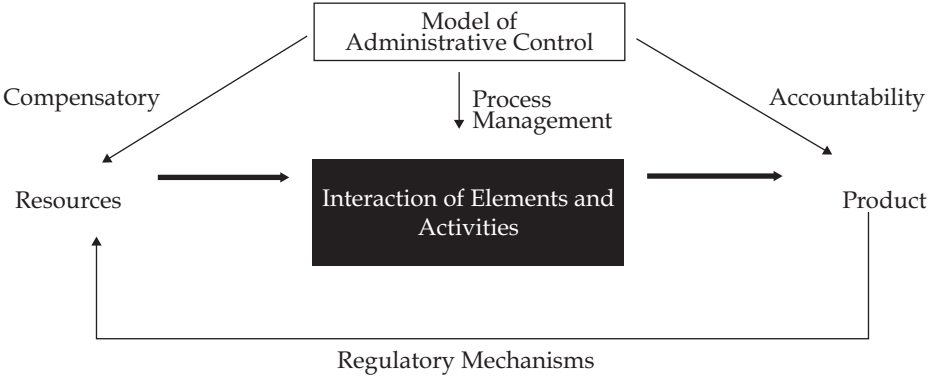
Source: TIMSS, population 2 student data and WISTAT, version 4.
Notes: Student-level data are weighted to account for the multistage sampling design. Table displays selected coefficients from complete model, which also estimated level 2 effects on B_0. Level 2 controls for average attitude score in B_1 model are grand-mean centered.
**p < .05; ***p < .01 (two-tailed tests with robust standard errors)

FIGURE 12.1 / Models of Organizational Control

A: Line Production in an Organization

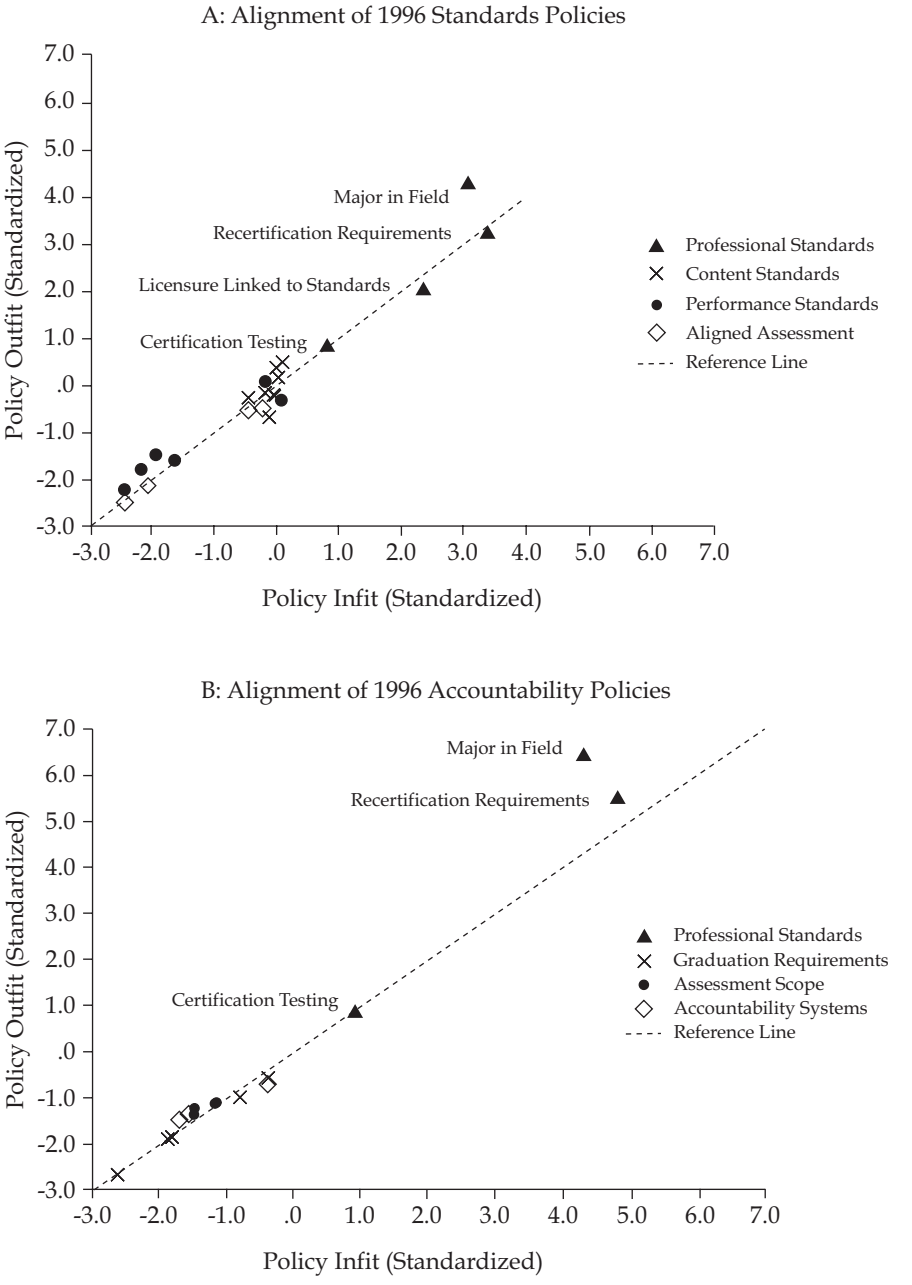


B: Administrative Control over an Organization or System



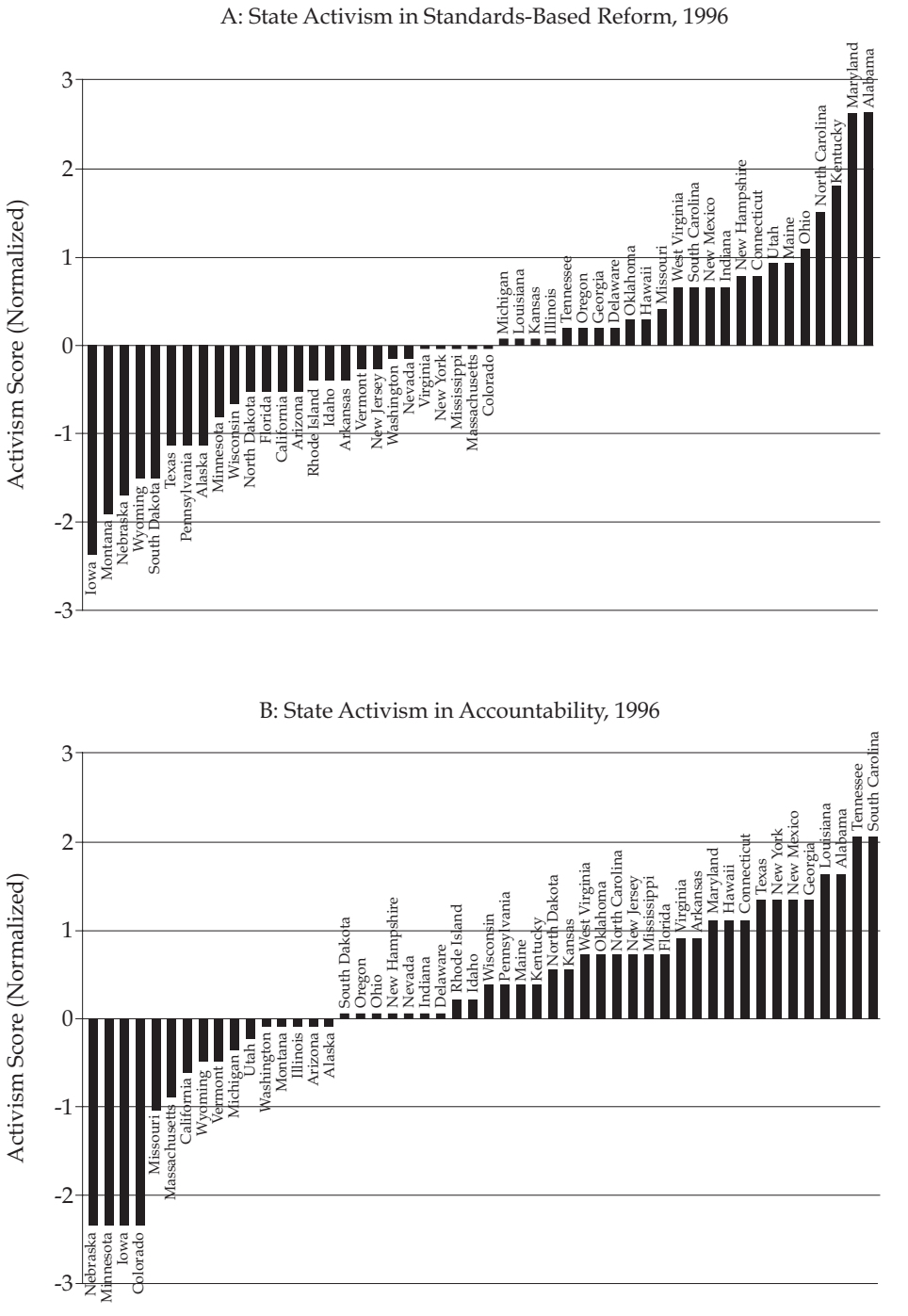
Source: Author's compilation.

FIGURE 12.2 / Alignment of Policies to Standards-Based and Accountability Reforms



Source: Author's compilation.

FIGURE 12.3 / State Activism in Standards-Based and Accountability Reforms



Source: Author's compilation.

TABLE 12.1 / Standards and Accountability Policy Indicators

Reform Elements and Policies	Description of Policy (Coding Categories)
Standards-based reform	
Content standards	
Curriculum frameworks (math, science, language arts, social studies)	Statements of content areas and curriculum topics are included in instruction for specific academic areas (not pursued; in development; adopted)
Content guides (math, science)	Published documents present a state's vision of desired content knowledge for academic subject areas (not pursued; in development; adopted)
Curriculum innovativeness (math, science)	Timing of state's introduction of academic content standards (no standards; 1990 to 1996 to 1989 or earlier)
Performance standards	
Performance benchmarks (math, science)	Guidelines establish formal performance expectations for mastery over academic content knowledge (not pursued; in development; adopted)
Performance levels (math, science)	Specific performance benchmarks are incorporated into state assessments (none; pass-fail; multiple levels)
Benchmark innovativeness (math, science)	Timing of state's introduction of academic performance standards (no standards; 1995 to 1996; 1994 or earlier)
Assessment standards	
Aligned assessments (math, science)	Statewide assessment program aligns content knowledge domains of tests with state content standards (no linkage or assessment; in development; completed)
Innovative assessments (items, tests)	Performance-based tasks or tests are incorporated into the state assessment program (none; combination of traditional and performance-based elements; all performance-based elements)
Accountability reform	
High school graduation requirements	
Subject-specific course-taking (math, science, English, social studies)	Minimum number of course credits (Carnegie units) in each of four academic subject areas are required by state for high school diploma (English: two and a half units or less; three; four or more) (Other: one and a half units or less; two; three or more)
Academic intensity of course-taking	Proportion of total course credits required for high school graduation that must be in taken core academic subjects (English, social studies, math, and science) (less than half; 50 to 59 percent; 60 percent or more)

TABLE 12.1 / *Continued*

Reform Elements and Policies	Description of Policy (Coding Categories)
Assessment program scope	
Population coverage	Extent to which state assessment program components test students on a census basis at targeted grade levels (no components; some; all)
Subject coverage	Number of major academic subject areas (reading, writing, math, science, history/social studies) tested by statewide assessment program (two or fewer subjects; three to four; all five)
Grade coverage	Number of elementary and secondary grade levels tested by statewide assessment program (three or fewer grades; four to six; seven to twelve)
Accountability systems	
Instructional improvement	Statewide assessment results used for instructional purposes: diagnosis or placement of students, instructional improvement, and program evaluation (not used; used in one area; used in multiple areas)
School accountability	Statewide assessment results used for school accountability purposes: evaluating school performance, enforcing accreditation requirements, and issuing awards to schools (not used; used in one area; used in multiple areas)
Student accountability	Statewide assessment results used for student accountability purposes: grade promotion, high school graduation, issuing student awards (not used; used in one area; used in multiple areas)
Professional standards	
Major in field	State requirements for undergraduate major in an academic field for new teacher licensure (none; secondary-level teachers only; all levels)
Licensure testing	State requirements for testing applicants for new teacher license in the following skill areas: basic skills, professional skills, subject knowledge, and in-class observation (none; some areas tested; all areas)
Recertification requirements	State requirements for recertification or renewal of teacher license (none; one-time renewal; periodic renewal)
Licensure-standards linkage	State requirements for teacher licensure are linked to state academic standards; used in standards-based reform analyses only (not pursued; in development; adopted)

Source: Author's compilation.

TABLE 12.2 / Policy Difficulty Scores from IRT Measurement Models: Standards and Accountability

Reform	Policy Difficulty
Standards-based	
Content standards	
Math guide	–2.745
Science guide	–1.965
Language arts framework	–1.580
Social studies framework	–1.460
Math framework	–1.026
Science framework	–.895
Math curriculum innovation	–.428
Science curriculum innovation	–.191
Performance standards	
Math benchmarks	.211
Math performance levels	.383
Science benchmarks	.512
Science performance levels	.945
Math benchmark innovation	1.239
Science benchmark innovation	1.357
Assessment standards	
Aligned math assessment	.288
Aligned science assessment	.734
Innovative items	1.579
Innovative tests	3.041
Model reliability	.95
Accountability	
High school graduation requirements	
English credits	–1.536
Social studies credits	–1.050
Mathematics credits	–.532
Science credits	.376
Percentage of credits in core subjects	.390
Assessment program	
Population coverage	–1.228
Subject coverage	.688
Grade level coverage	1.244
Accountability systems	
Instructional improvement	–.953
School accountability	.490
Student accountability	2.110
Model reliability	.92

Source: Author's compilation.

TABLE 13.1 / Effects of State Policies on Number of Advanced Mathematics Credits Earned

	Average Effect	Extensiveness of Testing	Consequences for Schools	Consequences for Students
Student-level variables				
Intercept	1.631***	.003	.047**	−.026
Socioeconomic status	.323***	.014*	.009	−.008
Race-ethnicity				
Latino and Latina	−.103*	.035	.030	−.016
African American	.039	−.008	.021	−.037
Freshman math level	.448***	−.007	.027**	−.018*
Student-level controls	Coefficient			
Male	−.039			
Living with both parents	.103**			
Middle school math grades	.249***			
Eighth-grade math class				
Remedial	−.107			
Algebra or advanced	.482***			
Urbanicity				
Urban	−.005			
Rural	−.027			

Source: National Education Longitudinal Study of 1988 to 1992 and National Longitudinal Study of Schools.

*p < .05; **p < .01; ***p < .001

TABLE 13A.1 / Source, Coding, and Descriptive Statistics for Student-Level Variables

High School Mathematics Course	Mean	Standard Deviation	Source and Coding
Level of freshman mathematics course	3.53	1.27	Obtained from high school transcripts
Advanced mathematics credits	1.68	1.29	Obtained from high school transcripts, number of Carnegie units in algebra 2, geometry, trigonometry, pre-calculus, and calculus
Socioeconomic status	.01	.73	NCES-constructed variable in the second follow-up student file
Race-ethnicity			
African American	.11	.32	Constructed from an NCES variable based on student reports, with European Americans and Asian Americans as the base category and Native Americans excluded from analysis
Latino and Latina	.08	.28	
Male	.49	.50	NCES variable based on student report; coded 1 = male and 0 = female
Living with both parents	.68	.47	Composite based on parents' and students' reports of adults in the household; coded 1 = both parents and 0 = other
Middle school mathematics grades	4.04	.97	Eighth-graders' report of mathematics grades "from the sixth grade until now"
Eighth-grade mathematics courses			
Remedial mathematics	.06	.24	Eighth-graders' report of which mathematics courses they attended that year
Algebra	.37	.48	
Urbanicity			
Urban	.20	.40	Constructed from an NCES variable with the suburban as the base category
Rural	.36	.48	

Source: All information is obtained from the National Educational Longitudinal Study of 1988 to 1994.

TABLE 13A.2 / Sources, Coding, and Descriptive Statistics for State-Level Variables

State Testing Policies	Mean	Standard Deviation	Source and Coding
High school graduation requirements	9.960	3.203	"Please indicate your state's high school graduation requirements for the class of 1992"—The variable is the sum of the number of Carnegie units required for a "regular diploma" in English, mathematics, science, and social studies.
Extensiveness of testing ($\alpha = .8949$)	4.020	3.461	"At what high school grades, and in which content areas, does current state policy require that student performance be assessed?"—Summed across mathematics, reading, science, and history/social studies for ninth through twelfth grades.
Consequences for students ($\alpha = .5976$)	2.066	2.189	"Does your state currently require or set guidelines for high school student testing for any of the following purposes?"—Coded 2 = "state has mandatory policy"; 1 = "state has guidelines"; and 0 = "neither." Summed across high school graduation, placement in remedial (compensatory education) programs, diploma eligibility, and promotion.
Consequences for schools ($\alpha = .8485$)	1.137	1.929	"Does state policy set standards for high school's performance based on student test results?"—Coded 0 if "describes neither acceptable nor unacceptable results." Otherwise, number of rewards for meeting standards (financial incentives, official recognition or publicity, accreditation, waivers from testing or reporting requirements, waivers from other regulations or deregulation) and sanctions for failing to meet standards (negative publicity, loss of accreditation, loss of control to higher educational authority).

Source: National Longitudinal Study of Schools.

TABLE 14.1 / Programs to Facilitate Students' Transition to High School

Type of Program	Students in a High School with a Given Program	High Schools with a Given Program
Recruitment programs		
HSSTV: "High school students present information to middle-grade students."	54.4%	56.5%
MSTAS: "Middle-grade students visit the high school for an assembly."	59.1	57.2
MSSTV: "Middle-grade students attend regular classes at high school."	12.7	13.9
MSPV: "Parents visit high school while children are still in middle grades."	52.3	53.5
Coordination programs		
Teachers: "Middle-grade and high school teachers meet together on courses and requirements."	47.0	45.7
Principals: "Middle-grade and high school administrators meet together on articulation and programs."	63.6	61.9
Counselors: "Middle-grade counselors meet with high school counselors or staff."	71.3	66.9
Integration programs		
PfallO: "Parents visit high school for orientation in the fall after children have entered."	51.9	54.7
Smeet: "Summer meetings are held at the high school."	30.7	30.3
Buddy: "Buddy or Big Brother/Sister program (pairs new student with older upon entry) is in place."	16.2	21.0

Source: Author's compilation from NELS:88 first follow-up school questionnaire.

TABLE 14.2 / Average Number of Transition Programs Used by Type and Location of High School

	Weighted by Number of Students	Averaged Across Schools
Type of high school		
Assigned public	4.60	4.67
Choice public	4.73	4.99
Magnet	5.29	5.42
Vocational or technical	4.44	4.64
Catholic	4.52	4.23
Other private	3.13	3.62
Location of high school		
Urban	4.96	4.88
Suburban	4.82	4.76
Rural	4.00	4.04

Source: Author's compilation from NELS:88 first follow-up school questionnaire.

TABLE 14.3 / Relative Usage of a Particular High School Transition Program by Organizational Characteristics

	Recruitment Programs				Coordination Programs			Integration Programs		
	HSSTV	MSTAS	MSSTV	MSPV	Teachers	Principals	Counselors	PFallO	SMeet	Buddy
School type										
Assigned	8.1	13.4	–37.0	6.0	3.3	21.0	29.7	4.7	–14.6	–34.6
Choice	13.2	13.9	–39.2	10.5	–0.9	17.2	26.6	7.1	–18.4	–30.4
Magnet	8.7	11.9	–38.1	10.3	–23.6	5.5	23.2	20.0	3.9	–21.9
Vocational-technical	2 6.9	11.4	–44.2	–4.2	–17.5	2.5	35.8	20.3	–13.1	–17.5
Catholic	20.9	1.1	–7.4	20.0	–12.1	–5.5	–28.1	26.6	–21.5	5.8
Independent	2.8	1.8	–10.2	0.8	10.8	14.8	–0.2	2.8	–27.2	3.8
Location										
Urban	16.7	6.5	–31.5	9.2	–9.8	9.5	12.7	18.0	–13.5	–18.1
Suburban	8.1	10.1	–37.7	8.1	5.1	19.0	26.2	7.4	–17.6	–28.3
Rural	4.8	19.4	–25.5	3.4	4.8	19.7	24.4	–3.7	–16.6	–31.1

Source: Author's compilation from NELS:88 first follow-up school questionnaire.