Predictive Risk Factors for School Failure/Success

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Data available from the meta-analysis

- 416 studies reporting 20,768 longitudinal correlations between a risk variable and a school success/failure variable measured later

- Sample characteristics
  - 53% primarily white, 17% primarily minority
  - 28% primarily low/working class, 22% primarily middle class
  - Mean proportion male = .51
  - Mean age at first wave = 7.17
  - Mean interval between waves = 28 mos.
- Major sources for the risk and outcome measures
  - Child reports: 47% of the risk measures and 42% of the outcome measures
  - School-administered instruments: 22% of the risk measures and 39% of the outcome measures

Identifying the construct categories for school performance outcomes

- School performance measures inductively sorted into categories based on conceptual similarity.

- MR models used to standardize cross-sectional correlations between different performance measures for a consistent profile of sample and measurement characteristics:
  - Age, gender, SES, ethnicity, risk
  - Informant (child, parent, etc.), scaling (binary, continuous)

- Mean cross-sectional correlations across constructs examined to ensure that inclusion in the same construct category was empirically justified.

School performance outcome constructs

Constructs & construct categories	Mean cross-construct correlation	Constructs & construct categories	Mean cross-construct correlation
Achievement Tests		**School Readiness**	
Total achievement	.81	Readiness: Oral communication	.64
Reading achievement	.71	Readiness: Draw-a-Person	.70
Math achievement	.66	Individual readiness tasks	.73
Other subject achievement	.65	Visual, perceptual skills	.65
Vocabulary	.68	Readiness Test: Total	.73
Comprehension	.56	Readiness: Early Literacy	.70
Language mechanics	.62	Readiness: Math, spatial	.61
Writing achievement	.66		
General knowledge	.53		

School performance outcome constructs

Constructs & construct categories	Mean cross-construct correlation	Constructs & construct categories	Mean cross-construct correlation
Decoding Skill		*GPA/Grades*	
Phonemic awareness	.76	Math grades	.71
Phonics	.79	English grades	.73
Fluency achievement	.77	Other grades	.74
Spelling achievement	.78	GPA, grades	.80
Print concepts, print awareness	.77		

Method for Longitudinal Correlations

- As with the cross-sectional correlations, we performed a series of multi-level regression models to adjust the longitudinal correlations for differences associated with measurement characteristics.

  - Informant (child, parent, etc.), scaling (binary, continuous), and form of data collection (standardized test, survey).

- We then examined the influence of age, time interval, age^2, and age*interval on the risk-outcome correlations.

- Risk-outcome correlations for given Time 1 and Time 2 ages estimated from the second stage models.

Achievement Test Outcomes: Mean Longitudinal Correlations with Prior Performance

Predictor	4-7	5-8	9-13	Nes (Nss)
Prior Academic Performance				
School readiness tests	.42	.43	.42	2738 (263)
Decoding skills	.42	.43	.42	1030 (130)
Grades, GPA	.30	.31	.30	83 (25)
Achievement test scores	.43	.44	.43	2580 (318)
Grade retention	.55	.55	.55	17 (6)
Cognitive Abilities, IQ	.45	.43	.37	1556 (76)

What are the strongest predictors of Achievement Test Scores?

Predictor	4-7	5-8	Nes (Nss)
Self-efficacy, Goal Setting	.50	.47	52 (19)
Achievement Motivation	.48	.44	227 (51)
Academic Goal Setting	.56	.53	27 (10)
Social Competence	.46	.43	131 (41)
Peer Acceptance, Rejection	.47	.43	34 (14)
Parenting Skills	.45	.43	58 (17)
Family Educational Supports	.44	.42	493 (67)
Harsh Parenting	.44	.42	19 (14)
Family Socioeconomic Status	.50	.49	364 (67)

What are the weakest predictors of Achievement Test Scores?

Predictor	4-7	5-8	Nes (Nss)
Teacher Instructional Quality	.36	.36	123 (20)
Motor Skills, Coordination	.37	.37	161 (38)
Self-esteem*	.37	.37	176 (33)
Problem Behavior, School Conduct	.38	.39	264 (70)
Internalizing Problems*	.37	.37	147 (37)

* Also the weakest predictors with sufficient N for Grades/GPA

Grades, GPA Outcomes: Mean Longitudinal Correlations with Prior Performance

Predictor	4-7	5-8	9-13	Nes (Nss)
Prior Academic Performance				
School readiness tests	.49	.49	.39	50 (13)
Decoding skills	.47	.48	.37	16 (3)
Grades, GPA	.51	.52	.42	232 (78)
Achievement test scores	.48	.48	.38	321 (47)
Cognitive Abilities, IQ	.51	.48	.38	136 (32)

What are the strongest predictors of Grades and GPA?

Predictor	4-7	5-8	9-13	Nes (Nss)
Achievement Motivation	.63	.60	.52	126 (23)
School Self-concept	.69	.67	.60	197 (18)
Self-efficacy, Goal Setting	.68	.65	.58	22 (12)
Social Competence	.55	.43	.46	53 (14)
Peer Acceptance, Rejection	.54	.52	.45	53 (19)
Family Educational Supports	.54	.52	.42	210 (25)
Harsh Parenting	.56	.54	.45	23 (11)
Parenting Skills	.54	.52	.42	43 (16)
Family Socioeconomic Status	.57	.57	.52	95 (33)

School Readiness and Decoding Skills: Mean Longitudinal Correlations with Prior Performance

Predictor at Age 4	Readiness at 6	Nes (Nss)	Decoding at 6	Nes (Nss)
Prior Academic Performance				
School readiness tests	.53	404 (65)	.41	671 (84)
Decoding skills	.54	56 (18)	.44	1225 (91)
Cognitive Abilities, IQ	.45	72 (22)	.40	289 (59)

What are the strongest predictors of School Readiness & Decoding Skill other than prior performance?

Predictor at Age 4	Readiness at 7	Nes (Nss)	Decoding at 7	Nes (Nss)
Family Socioeconomic Status	.47	57 (12)	.47	86 (19)
Attention, Hyperactivity Problems	.47	23 (7)	.47	74 (18)
Problem Behavior	.40	48 (20)	.44	68 (12)
Family Educational Supports	.38	68 (10)	.42	96 (19)

Does ASB Predict School Performance?

	Outcomes at Age 13			
Predictors at Age 9	Achieve-ment	Nes (Nss)	Grades	Nes (Nss)
Delinquent behavior	-	-	.38	30 (7)
Problem behavior/school conduct	.38	264 (70)	.39	142 (32)
Violent behavior	.34	11 (5)	-	-

Do Attention Problems Predict School Performance?

	Age 4-7	Age 5-8	Age 9-13	Nes (Nss)
Attention/hyperactivity → School Readiness Tests	.47	.45	-	23 (7)
Attention/hyperactivity → Decoding Skills	.47	.42	-	74 (18)
Attention/hyperactivity → Achievement Tests	.41	.42	.42	369 (71)
Attention/hyperactivity → Grades, GPA	.52	.49	.38	74 (15)

School Performance: Conclusions

- Many predictors had moderate to strong correlations with later school performance.

  - Grades were generally better predicted than achievement tests, decoding, and readiness.

- Prior performance and socioeconomic status were consistently strong predictors of all school performance outcomes.

- Attitudes and motivations appeared to play an important role in predicting later achievement test scores and grades.

- Antisocial behavior was among the weaker predictors.

- Attention difficulties and related problems were moderately predictive of later school outcomes.