Need for Cognition and Ability Self-Concepts as Predictors of Changes in School Grades Supplementary Tables

Anja Strobel[1*], Alexander Strobel[2*], Franzis Preckel[3], & Ricarda Steinmayer[4]

[1] Department of Psychology, Chemnitz University of Technology, Chemnitz, Germany

[2] Faculty of Psychology, Technische Universität Dresden, Dresden, Germany

[3] Department of Psychology, University of Trier, Trier, Germany

[4] Department of Psychology, TU Dortmund University, Dortmund, Germany

Author Note

[adjust according to APA style] * These authors contributed equally to this work. [add acknowledgements and funding if applicable]

Correspondence concerning this article should be addressed to Anja Strobel, Department of Psychology, Chemnitz University of Technology, 09120 Chemnitz, Germany. E-mail: anja.strobel@psychologie.tu-chemnitz.de

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Supplementary Tables

Tables 1-4 provide the descriptives and intercorrelations of the variables involved in the correlation analyses for the subjects German, math, physics, and chemistry. Table 5 gives the results of the multiple regression of grades at the second measurement occasion (T2) on predictors measures at the first measurement occasion (T1). For details, see main text.

Table 1

Spearman correlations and descriptive statistics of the variables in the analyses on German grades

	GRD1	ASC1	INT1	HFS1	FOF1	NFC1	GRD2	ASC2	INT2	HFS2	FOF2	NFC2
GRD1	—	.53	.45	.26	-.17	.33	***.67***	.51	.40	.25	-.18	.35
ASC1		*.93*	.66	.16	-.13	.18	.58	***.76***	.60	.08	-.05	.16
INT1			*.92*	.16	-.11	.23	.44	.54	***.63***	.17	-.14	.20
HFS1				*.86*	-.30	.62	.21	.16	.11	***.57***	-.17	.50
FOF1					*.88*	-.42	-.20	-.22	-.13	-.29	***.59***	-.43
NFC1						*.89*	.35	.21	.16	.62	-.32	***.71***
GRD2							—	.58	.46	.24	-.21	.41
ASC2								*.92*	.68	.10	-.13	.25
INT2									*.91*	.11	-.06	.19
HFS2										*.87*	-.28	.66
FOF2											*.90*	-.39
NFC2												*.89*
Mean	3.24	3.68	3.49	2.92	1.86	4.46	3.36	3.65	3.42	2.72	1.71	4.69
SD	0.79	0.82	0.99	0.57	0.61	0.84	0.80	0.76	0.94	0.56	0.61	0.87
Min	1.00	1.00	1.00	1.14	1.00	2.19	1.00	1.00	1.00	1.00	1.00	2.50
Max	5.00	5.00	5.00	4.00	4.00	6.94	5.00	5.00	5.00	4.00	3.71	6.88
Skew	-0.01	-0.38	-0.33	-0.23	0.45	0.16	-0.13	-0.26	-0.26	-0.02	0.89	0.07
Kurtosis	-0.24	-0.12	-0.37	-0.07	-0.34	0.14	-0.38	0.08	-0.51	0.17	0.47	-0.45

Note. N = 221-259 due to missings; $p < .05$ for $|r_s| > .21$; coefficients in the diagonal are Cronbach's α, bold-faced coefficients give the 53-59 week retest reliability; GRD = Grade German, ASC = Ability Self-Concept German, INT = Interest in German, HFS = Hope for Success, FOF = Fear of Failure, NFC = Need for Cognition at measurement occasion 1, and 2, respectively

Table 2

Spearman correlations and descriptive statistics of the variables in the analyses on math grades

	GRD1	ASC1	INT1	HFS1	FOF1	NFC1	GRD2	ASC2	INT2	HFS2	FOF2	NFC2
GRD1	—	.68	.56	.24	-.17	.30	***.54***	.56	.46	.29	-.11	.34
ASC1		*.95*	.79	.26	-.21	.28	.42	***.73***	.58	.38	-.19	.26
INT1			*.93*	.30	-.19	.35	.38	.66	***.68***	.42	-.20	.31
HFS1				*.86*	-.30	.62	.16	.24	.30	***.57***	-.17	.50
FOF1					*.88*	-.42	-.21	-.22	-.18	-.29	***.59***	-.43
NFC1						*.89*	.26	.27	.35	.62	-.32	***.71***
GRD2							—	.64	.58	.30	-.12	.40
ASC2								*.95*	.80	.37	-.21	.31
INT2									*.94*	.45	-.17	.42
HFS2										*.87*	-.28	.66
FOF2											*.90*	-.39
NFC2												*.89*
Mean	3.11	3.20	3.18	2.92	1.86	4.46	3.19	3.37	3.33	2.72	1.71	4.69
SD	1.02	1.01	1.14	0.57	0.61	0.84	1.10	0.98	1.10	0.56	0.61	0.87
Min	1.00	1.00	1.00	1.14	1.00	2.19	0.75	1.00	1.00	1.00	1.00	2.50
Max	5.00	5.00	5.00	4.00	4.00	6.94	5.25	5.00	5.00	4.00	3.71	6.88
Skew	-0.05	-0.12	-0.20	-0.23	0.45	0.16	-0.18	-0.35	-0.39	-0.02	0.89	0.07
Kurtosis	-0.63	-0.65	-0.88	-0.07	-0.34	0.14	-0.61	-0.39	-0.61	0.17	0.47	-0.45

Note. N = 218-259 due to missings; $p < .05$ for $|r_s| > .17$; coefficients in the diagonal are Cronbach's α, bold-faced coefficients give the 53-59 week retest reliability; GRD = Grade Math, ASC = Ability Self-Concept Math, INT = Interest in Math, HFS = Hope for Success, FOF = Fear of Failure, NFC = Need for Cognition at measurement occasion 1, and 2, respectively

Table 3

Spearman correlations and descriptive statistics of the variables in the analyses on physics grades

	GRD1	ASC1	INT1	HFS1	FOF1	NFC1	GRD2	ASC2	INT2	HFS2	FOF2	NFC2
GRD1	—	.59	.46	.22	-.13	.27	***.66***	.45	.41	.28	-.13	.28
ASC1		*.95*	.80	.17	-.09	.25	.45	***.65***	.65	.32	-.11	.26
INT1			*.94*	.17	-.08	.23	.36	.64	***.71***	.31	-.18	.23
HFS1				*.86*	-.30	.62	.27	.20	.25	***.57***	-.17	.50
FOF1					*.88*	-.42	-.10	-.15	-.13	-.29	***.59***	-.43
NFC1						*.89*	.39	.25	.32	.62	-.32	***.71***
GRD2							—	.50	.45	.39	-.15	.41
ASC2								*.96*	.85	.35	-.23	.23
INT2									*.94*	.38	-.19	.29
HFS2										*.87*	-.28	.66
FOF2											*.90*	-.39
NFC2												*.89*
Mean	3.11	2.66	2.61	2.92	1.86	4.46	3.07	2.52	2.45	2.72	1.71	4.69
SD	1.03	0.99	1.16	0.57	0.61	0.84	0.93	1.03	1.19	0.56	0.61	0.87
Min	0.00	1.00	1.00	1.14	1.00	2.19	0.00	1.00	1.00	1.00	1.00	2.50
Max	5.00	5.00	5.00	4.00	4.00	6.94	5.25	5.00	5.00	4.00	3.71	6.88
Skew	-0.12	0.10	0.24	-0.23	0.45	0.16	-0.17	0.35	0.52	-0.02	0.89	0.07
Kurtosis	-0.24	-0.70	-0.90	-0.07	-0.34	0.14	0.14	-0.50	-0.69	0.17	0.47	-0.45

Note. N = 191-259 due to missings; $p < .05$ for $|r_s| > .13$; coefficients in the diagonal are Cronbach's α, bold-faced coefficients give the 53-59 week retest reliability; GRD = Grade Physics, ASC = Ability Self-Concept Physics, INT = Interest in Physics, HFS = Hope for Success, FOF = Fear of Failure, NFC = Need for Cognition at measurement occasion 1, and 2, respectively

Table 4

Spearman correlations and descriptive statistics of the variables in the analyses on physics grades

	GRD1	ASC1	INT1	HFS1	FOF1	NFC1	GRD2	ASC2	INT2	HFS2	FOF2	NFC2
GRD1	—	.51	.44	.28	-.25	.32	***.72***	.44	.40	.37	-.23	.35
ASC1		*.96*	.82	.23	-.13	.16	.46	***.70***	.62	.21	-.12	.18
INT1			*.95*	.18	-.03	.18	.39	.67	***.68***	.24	-.10	.19
HFS1				*.86*	-.30	.62	.27	.24	.21	***.57***	-.17	.50
FOF1					*.88*	-.42	-.19	-.15	-.06	-.29	***.59***	-.43
NFC1						*.89*	.36	.20	.20	.62	-.32	***.71***
GRD2							—	.52	.49	.36	-.26	.36
ASC2							*.96*	.86	.26	-.15	.26	
INT2								*.94*	.24	-.08	.26	
HFS2									*.87*	-.28	.66	
FOF2										*.90*	-.39	
NFC2											*.89*	
Mean	3.12	2.52	2.48	2.92	1.86	4.46	3.15	2.44	2.37	2.72	1.71	4.69
SD	0.95	1.06	1.20	0.57	0.61	0.84	0.83	1.06	1.21	0.56	0.61	0.87
Min	1.00	1.00	1.00	1.14	1.00	2.19	1.25	1.00	1.00	1.00	1.00	2.50
Max	5.00	5.00	5.00	4.00	4.00	6.94	5.00	5.00	5.00	4.00	3.71	6.88
Skew	0.06	0.34	0.49	-0.23	0.45	0.16	0.20	0.32	0.56	-0.02	0.89	0.07
Kurtosis	-0.59	-0.65	-0.75	-0.07	-0.34	0.14	-0.53	-0.63	-0.74	0.17	0.47	-0.45

Note. N = 171-259 due to missings; $p < .05$ for $|r_s| > .18$; coefficients in the diagonal are Cronbach's α, bold-faced coefficients give the 53-59 week retest reliability; GRD = Grade Chemistry, ASC = Ability Self-Concept Chemistry, INT = Interest in Chemistry, HFS = Hope for Success, FOF = Fear of Failure, NFC = Need for Cognition at measurement occasion 1, and 2, respectively

Table 5

Multiple regressions of subject grades at T2 on predictors at T1

	B	*SE*	*CI.LB*	*CI.UB*	β	*p*
German						
Intercept	0.374	0.300	-0.214	0.962	.465	.213
Grade German	0.506	0.063	0.382	0.629	.499	< .001
Ability Self-Concept German	0.289	0.072	0.147	0.430	.294	< .001
Interest in German	-0.022	0.052	-0.124	0.079	-.027	.668
Hope for Success	-0.129	0.089	-0.303	0.045	-.091	.145
Fear of Failure	-0.044	0.061	-0.165	0.076	-.033	.470
Need for Cognition	0.183	0.068	0.050	0.316	.192	.007
Math						
Intercept	1.498	0.517	0.484	2.512	1.368	.004
Grade Math	0.493	0.089	0.318	0.667	.461	< .001
Ability Self-Concept Math	0.057	0.122	-0.182	0.295	.052	.643
Interest in Math	0.041	0.084	-0.124	0.207	.043	.625
Hope for Success	-0.083	0.140	-0.357	0.191	-.043	.552
Fear of Failure	-0.184	0.111	-0.401	0.033	-.102	.097
Need for Cognition	0.091	0.107	-0.118	0.300	.070	.392
Physics						
Intercept	-0.234	0.381	-0.979	0.512	-.252	.539
Grade Physics	0.533	0.064	0.407	0.658	.590	< .001
Ability Self-Concept Physics	0.062	0.096	-0.126	0.249	.066	.521
Interest in Physics	-0.035	0.068	-0.169	0.099	-.044	.610
Hope for Success	0.116	0.109	-0.098	0.330	.071	.288
Fear of Failure	0.117	0.092	-0.063	0.298	.076	.204
Need for Cognition	0.217	0.076	0.068	0.366	.197	.004
Chemistry						
Intercept	0.583	0.348	-0.098	1.265	.703	.093
Grade Chemistry	0.554	0.054	0.448	0.661	.633	< .001
Ability Self-Concept Chemistry	0.088	0.069	-0.048	0.223	.112	.205
Interest in Chemistry	-0.011	0.056	-0.120	0.098	-.016	.839
Hope for Success	-0.006	0.089	-0.180	0.168	-.004	.943
Fear of Failure	0.051	0.082	-0.111	0.213	.037	.536
Need for Cognition	0.122	0.062	-0.001	0.244	.124	.051

Note. N = 271-275; coefficients are unstandardized slopes B with their standard errors SE and 95% confidence intervals ($CI.LB$ = lower bound, $CI.UB$ = upper bound), β is the standardized slope and p the respective p-vcalues