

Electronic Supplementary Material (ESM)

Table ESM 1

Correlations Between the Performance Measures and Instructional Support at the Classroom Level

#	Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16
1	Concept development (Topic 1)	—														
2	Quality of feedback (Topic 1)	.37	—													
3	Language modeling (Topic 1)	.65**	.47	—												
4	Concept development (Topic 2)	-.09	.07	-.14	—											
5	Quality of feedback (Topic 2)	.34	.29	.12	.53*	—										
6	Language modeling (Topic 2)	-.11	.44	.19	.59*	.41	—									
7	Floating and sinking (T1)	.26	.00	.20	.30	.37	.26	—								
8	Floating and sinking (T2)	.01	-.08	.02	.17	.15	.13	.34	—							
9	Evaporation and condensation (T2)	.21	.05	.32	-.17	.01	-.07	.15	-.16	—						
10	Evaporation and condensation (T3)	.12	.25	.25	.09	.14	.12	.09	.15	.42*	—					
11	Science vocabulary (T1)	.03	.06	-.03	.19	.12	.34	.20	.31	-.30	-.05	—				
12	Science vocabulary (T4)	-.06	-.11	-.06	.02	.03	.12	.21	.55*	.08	.19	.62**	—			
13	General academic vocabulary (T1)	.07	.02	.03	.27	.34	.12	.35	.14	-.10	.16	.59**	.56**	—		
14	General academic vocabulary (T4)	.01	-.15	.01	.25	.30	.17	.49*	.42*	-.01	.28	.41	.63**	.67**	—	
15	Comprehension of connectives (T1)	-.02	-.16	-.09	.29	.27	-.31	.54**	.43*	-.24	-.12	.75**	.61**	.64**	.59**	—
16	Comprehension of connectives (T4)	-.01	-.25	-.19	.15	.20	-.01	.38	.49*	-.05	.19	.56**	.75**	.59**	.71**	.64**

Note. $N = 27$. All variables were aggregated at the classroom level before the analyses.

* $p < .05$. ** $p < .01$.

Table ESM 2

Correlations Between the Performance Measures and Control Variables at the Student Level

#	Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Content knowledge “floating and sinking” (T1)	—												
2	Content knowledge “floating and sinking” (T2)	.37**	—											
3	Content knowledge “evaporation and condensation” (T2)	.21**	.20**	—										
4	Content knowledge “evaporation and condensation” (T3)	.16**	.18**	.23**	—									
5	Science vocabulary (T1)	.17**	.31**	.10*	.15*	—								
6	Science vocabulary (T2)	.21**	.33**	.13**	.13**	.41**	—							
7	General academic vocabulary (T1)	.25**	.30**	.17**	.18*	.44**	.41*	—						
8	General academic vocabulary (T4)	.22**	.28**	.08	.17**	.35**	.44**	.48**	—					
9	Comprehension of connectives (T1)	.25**	.34**	.10*	.17**	.50**	.44**	.55*	.45**	—				
10	Comprehension of connectives (T4)	.18**	.45**	.08	.16**	.37**	.50**	.36**	.50**	.51**	—			
11	DLL	-.03	-.13**	-.11*	-.10*	-.18**	-.16**	-.25**	-.23**	-.19**	-.18**	—		
12	SES	.20**	.25**	.11*	.12*	.16**	.21**	.21**	.24**	.21**	.28**	-.10	—	
13	Parental education	.12*	.21**	.07	.10	.20**	.18**	.23**	.25**	.20**	.22**	-.13*	.43**	—
14	Girl	-.08	-.06	-.01	-.09	.07	.11*	.03	-.03	.08	.10	-.04	-.03	-.04

Note. $N = 459$. Analyses are based on 30 imputed datasets and were combined based on Rubin’s (1987) formulas. SES = socioeconomic status (as measured by the HISEI). ^a Parental education as indicated by the highest number of education years of both parents (OECD, 2009).

* $p < .05$. ** $p < .01$.

Table ESM 3

Prediction of Students' Science Content Knowledge and Academic Language Proficiency by Instructional Support During the Lesson Unit on "Evaporation and Condensation" (Topic 2)

	Science Content Knowledge ("Evaporation and Condensation")		Science Vocabulary		General Academic Vocabulary		Comprehension of Connectives	
	Model 5		Model 6		Model 7		Model 8	
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>
Level 1 (individual students)								
Prior knowledge	.19**	.05	.34**	.04	.37**	.06	.44**	.06
DLL	-.06	.06	-.04	.05	-.13*	.05	-.05	.05
SES	.08	.05	.07	.05	.04	.05	.11*	.06
Parental education ^a	.05	.05	.04	.05	.07	.06	.05	.06
Girl	-.09	.07	.09 [†]	.05	-.04	.04	.07 [†]	.04
Level 2 (classrooms)								
Prior knowledge (Mean)	.43	.35	.37 [†]	.20	.45*	.19	.53 [†]	.24
DLLs (%)	-.22	.40	-.50**	.17	-.09	.19	-.25	.20
SES (Mean)	.43	.58	.77*	.33	.38	.24	.32	.29
Parental education (Mean)	-.45	.62	-.28	.35	.19	.23	.07	.26
Girls (%)	-.05	.29	-.15	.18	-.11	.16	-.27	.20
Concept development	.10	.34	-.13	.25	-.06	.20	.07	.26
Quality of feedback	.15	.30	-.09	.22	.02	.20	-.01	.22
Language modeling	.27	.35	.28	.25	.20	.21	-.15	.22
R ² Level 1	.07**	.03	.15**	.03	.20**	.05	.26**	.05
R ² Level 2	.52	.32	.91**	.20	.82**	.16	.83**	.18
ICC	.04		.13		.15		.17	

Note. $N = 459$. Analyses are based on 30 imputed datasets and were combined based on Rubin's (1987) formulas. Additionally including the treatment condition in the analyses (0 = control group, 1 = intervention group) does not change the pattern of results. DLL = dual language learner; SES = socioeconomic status (as measured by the HISEI). ^a Parental education as indicated by the highest number of education years of both parents (OECD, 2009).

[†] $p < .10$. * $p < .05$. ** $p < .01$.

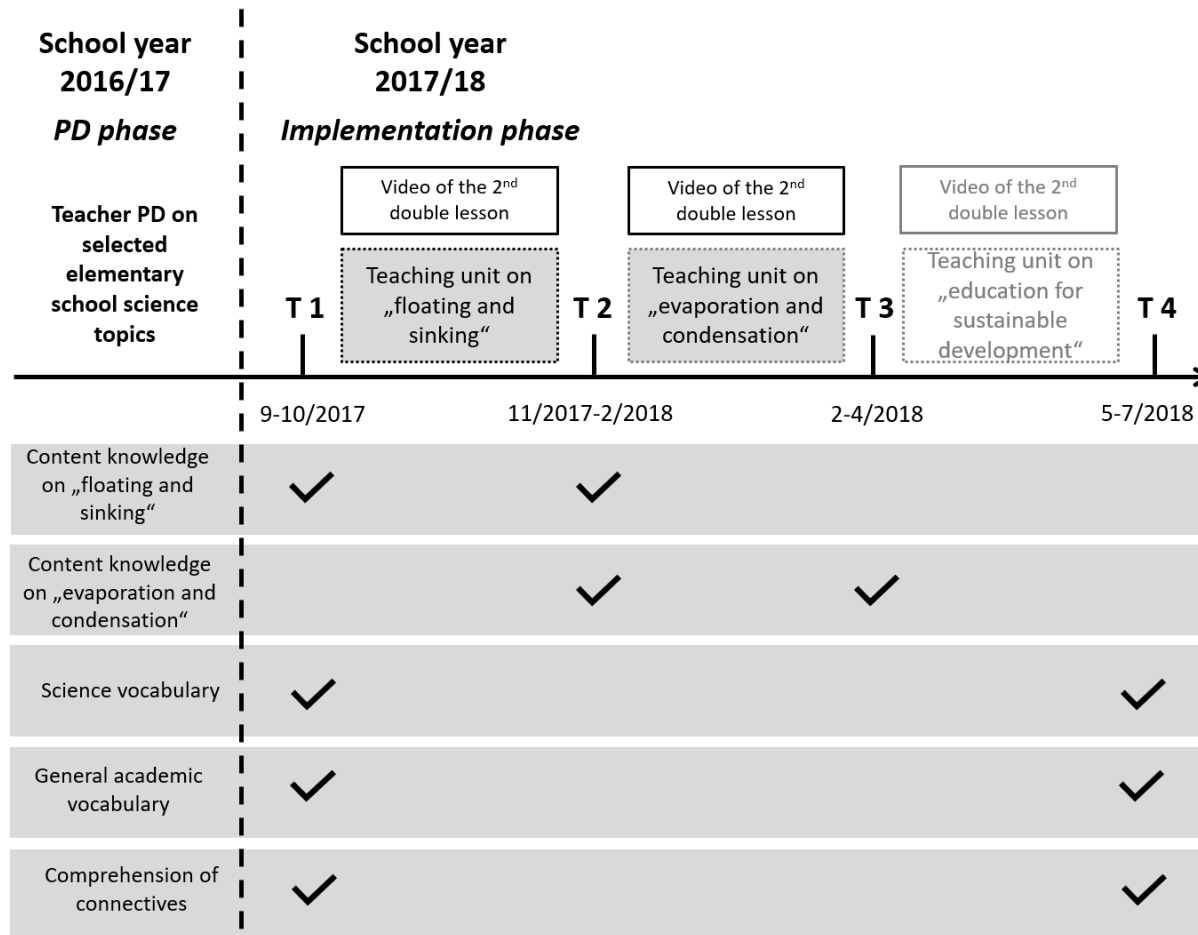


Figure ESM 1. Overview of study design, data collection, and constructs assessed.

Note. The variability in the time points of data collection is mainly due to the different timing of the school holidays in the two participating federal states.

References

- OECD. (2009). Appendices. In OECD (Ed.), *PISA 2006 technical report*. OECD Publishing.
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