

Supplemental Material A

Item statistics

Citation: Großschedl, J., Mahler, D., & Harms, U. (2018). Construction and evaluation of an instrument to measure content knowledge in biology: The CK-IBI [Supplemental material]. *Education Sciences*.

Supplemental Material A. Item statistics for Evaluation 1 and 2

STUDY 1			STUDY 2						
Item	Difficulty	Discrimination	Difficulty logit	SE logit	Discrimination	OUTFIT	INFIT	DIF for 'track'	DIF for 'second teaching subject'
EC1	0.55	0.34	-0.42	0.07	0.30	1.02	1.01	A	C
EC2	0.28	0.44	0.29	0.06	0.51	0.97	0.97	A	A
EC3	0.71	0.22	-0.83	0.08	0.27	1.07	1.07	A	A
EC4	0.35	0.15	0.42	0.09	0.33	1.00	1.00	A	A
EC5	0.48	0.21	-0.09	0.07	0.37	0.98	0.98	A	A
EC6	0.80	0.33	-1.32	0.09	0.29	0.90	0.96	A	A
EC7	0.10	0.27	--	--	--	--	--	--	--
EC8	0.19	0.24	--	--	--	--	--	--	--
EV1	0.22	0.86	-1.29	0.09	0.34	0.86	0.93	A	A
EV2	0.19	0.38	-0.89	0.08	0.38	0.95	0.96	A	A
EV3	0.37	0.24	1.46	0.08	0.34	1.04	1.06	A	A
EV4	0.31	0.58	-0.56	0.06	0.49	0.89	0.92	A	A
EV5	0.19	0.66	-0.29	0.07	0.45	1.06	1.04	A	B
EV6	0.19	0.65	-0.38	0.05	0.43	1.07	1.05	C	A
EV7	--	--	-0.14	0.07	0.25	1.08	1.08	A	A
EV8	--	--	-0.39	0.09	0.40	0.92	0.93	A	A
GM1	0.31	0.32	0.91	0.08	0.37	1.04	1.04	A	A
GM2	0.44	0.51	-0.25	0.07	0.45	0.96	0.97	A	A
GM3	0.45	0.65	-1.01	0.09	0.30	1.01	1.01	A	A
GM4	0.42	0.61	-0.78	0.09	0.37	0.95	0.96	A	A
GM5	0.37	0.41	0.22	0.09	0.29	1.01	1.01	A	A
GM6	0.46	0.22	1.12	0.08	0.20	1.11	1.06	A	A
GM7	--	--	0.56	0.07	0.49	0.89	0.90	A	A
GM8	0.31	0.72	--	--	--	--	--	--	--
M1	0.25	0.34	-0.65	0.09	0.29	0.98	1.00	A	A
M2	0.17	0.23	1.28	0.09	0.31	0.97	0.97	A	A
M3	0.21	0.31	0.38	0.09	0.21	1.08	1.07	A	A
M4	0.29	0.28	0.66	0.07	0.44	0.92	0.94	A	B+
M5	0.17	0.26	0.40	0.07	0.33	1.01	1.01	A	A
M6	--	--	-0.09	0.07	0.49	0.98	0.99	A	B
M7	--	--	0.18	0.09	0.46	0.88	0.90	A	A
M8	--	--	-0.23	0.06	0.40	1.04	1.06	C	A
P1	0.21	0.37	0.03	0.09	0.26	1.04	1.02	A	A

STUDY 1			STUDY 2						
Item	Difficulty	Discrimination	Difficulty logit	SE logit	Discrimination	OUTFIT	INFIT	DIF for 'track'	DIF for 'second teaching subject'
P2	0.23	0.55	0.13	0.09	0.43	0.92	0.93	A	C+
P3	0.36	0.59	-0.65	0.07	0.37	1.00	1.00	A	A
P4	0.35	0.33	0.25	0.07	0.34	0.99	0.99	A	A
P5	0.41	0.20	1.09	0.06	0.47	0.95	1.03	A	A
P6	0.32	0.57	-0.01	0.09	0.29	1.02	1.01	A	A
P7	0.29	0.21	0.93	0.46	0.39	1.02	1.03	A	A
P8	--	--	-0.04	0.07	0.41	1.02	1.01	A	A

Note. EC = ecology; EV = evolution; GM = genetics and microbiology; M = morphology; P = physiology; A = negligible DIF; B = slight to moderate DIF; C = moderate to large DIF. '+' = Easier for reference group (reference group for 'track' = academic; reference group for 'second teaching subject' = second science subject)