Power Calculations

We plan to append our main trial data with these data and improve the power of the first trial. The first trial includes 77 schools. With the addition of 52 schools, we will have total 129 schools.

Below table shows our power calculations based on 129 schools and mean cluster size of 65 (full sample and also separately for primary and post-primary schools). We assume 95% confidence intervals and 80% power.

Variable	Significance Level	Power	Number of Clusters	Sample Size per cluster	Total Sample Size	Mean	SD	Min. Detectable Effect	Intracluster Correlation	Implied Percentage Change in Outcome
Full Sample										
Curiosity-task	0.05	0.8	129	65	8385	5.39	3.21	0.53	0.1	9.80%
Retention	0.05	0.8	129	65	8385	10.95	5.03	0.63	0.05	5.79%
Science	0.05	0.8	129	65	8385	6.23	2.91	0.47	0.09	7.60%
Math	0.05	0.8	129	65	8385	6.82	2.48	0.5	0.16	7.38%
Turkish	0.05	0.8	129	65	8385	5.99	2.45	0.43	0.11	7.20%
Ambiguity	0.05	0.8	129	65	8385	2.02	1.47	0.19	0.05	9.32%
Risk	0.05	0.8	129	65	8385	2.17	1.58	0.18	0.04	8.29%
Middle Schools Only										
Curiosity-task	0.05	0.8	27	82	2214	5.4	3.22	0.99	0.07	18.39%
Retention	0.05	0.8	27	82	2214	11.45	5.18	1.54	0.06	13.48%
Science	0.05	0.8	27	82	2214	5.93	2.84	1.13	0.12	18.99%
Math	0.05	0.8	27	82	2214	7.22	2.45	1.07	0.15	14.83%
Turkish	0.05	0.8	27	82	2214	6.09	2.46	0.98	0.13	16.11%
Ambiguity	0.05	0.8	27	82	2214	1.78	1.35	0.24	0.01	13.45%
Risk	0.05	0.8	27	82	2214	1.94	1.44	0.26	0.01	13.16%
Elementary Schools Only										
Curiosity-task	0.05	0.8	102	60	6120	5.39	3.2	0.65	0.12	12.08%
Retention	0.05	0.8	102	60	6120	10.64	4.91	0.61	0.03	5.76%
Science	0.05	0.8	102	60	6120	6.42	2.94	0.49	0.07	7.56%
Math	0.05	0.8	102	60	6120	6.68	2.48	0.55	0.15	8.30%
Turkish	0.05	0.8	102	60	6120	5.96	2.45	0.48	0.11	8.06%
Ambiguity	0.05	0.8	102	60	6120	2.11	1.5	0.22	0.05	10.24%
Risk	0.05	0.8	102	60	6120	2.25	1.62	0.21	0.04	9.13%