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Model	School ICC Baseline
Effects of Learning Materials	
1. Base: changes over time and between grades	0.091912779
2. Average effect of learning materials	0.091997333
3. Learning materials-by-school interaction	0.095589508
3. Learning materials-by-school interaction, adjusted for Covid-19	0.173495701
3. Learning materials-by-school interaction, adjusted for municipa	0.076300392
Effects of Average Time with Learning Materials (TWLM)	
4. Base: changes over time and between grades	0.090293235
5. Average effect of TWLM (linear)	0.090552248
6. Average effect of TWLM (linear and squared)	0.090554762
7. TWLM-by-school interaction	0.091356006
7. TWLM-by-school interaction, adjusted for Covid-19	0.202093474
7. TWLM-by-school interaction, adjusted for municipality	0.056424117
Gender Differences in Effects of Learning Materials	
8. Base: interaction between gender and time, and gender and grad	0.093214266
9. Interaction between learning materials and gender	0.093364198
10. Interaction between learning materials and gender by school	0.111387208

Model	nobs	nschools	nmunicip	AIC	BIC	logLik	deviance	Df.residual
Effects of Learning Materials								
1. Base: changes over time and between grades	80840	2965	NA	271248.7	271406.8	-135607.3	271214.7	80823
2. Average effect of learning materials	80840	2965	NA	271218.2	271394.9	-135590.1	271180.2	80821
3. Learning materials-by-school interaction	80840	2965	NA	269452.0	269656.6	-134704.0	269408.0	80818
3. Learning materials-by-school interaction, adjusted for Covid-19	80840	2965	NA	267508.5	267750.3	-133728.2	267456.5	80814
3. Learning materials-by-school interaction, adjusted for municipality	79048	2710	357	264512.4	264772.2	-132228.2	264456.4	79020
Effects of Average Time with Learning Materials (TWLM)								
4. Base: changes over time and between grades	138514	3017	NA	442930.4	443156.7	-221442.2	442884.4	138491
5. Average effect of TWLM (linear)	138514	3017	NA	442879.7	443125.6	-221414.8	442829.7	138489
6. Average effect of TWLM (linear and squared)	138514	3017	NA	442876.5	443132.3	-221412.3	442824.5	138488
7. TWLM-by-school interaction	138514	3017	NA	440357.1	440681.8	-220145.6	440291.1	138481
7. TWLM-by-school interaction, adjusted for Covid-19	138514	3017	NA	435341.9	435715.8	-217632.9	435265.9	138476
7. TWLM-by-school interaction, adjusted for municipality	135532	2714	357	433756.0	434179.0	-216835.4	433670.9	135489
Gender Differences in Effects of Learning Materials								
8. Base: interaction between gender and time, and gender and grade	157388	2965	NA	399231.0	399520.0	-199586.5	399173.0	157359
9. Interaction between learning materials and gender	157388	2965	NA	399182.0	399510.9	-199558.0	399116.0	157355
10. Interaction between learning materials and gender by school	157388	2965	NA	394487.4	394935.9	-197198.7	394397.4	157343

S3 Main Results LM Effects

			Model 1		Model 2		Model 3		Model 3 V2 - Adjusting for Covid-19		Model 3 V3 - Adjusting for Municipality	
RANDOM EFFECTS	School ID	Standard deviation of intercepts	0.577		0.577		**0.590**		0.831		0.521	
	School ID	Standard deviation of time quarter slopes	0.352		0.351		**0.338**		0.349		0.203	
	School ID	Standard deviation of learning materials slopes	NA		NA		**0.348**		0.348		0.339	
	School ID	Standard deviation of Covid-19 quarters slopes	NA		NA		NA		0.526		NA	
	School ID	Correlation between intercept and time quarter slopes	-0.544		-0.544		**-0.515**		-0.694		-0.710	
	School ID	Correlation between intercept and learning materials slopes	NA		NA		**-0.280**		-0.157		-0.263	
	School ID	Correlation between intercept and Covid-19 quarters slopes	NA		NA		NA		-0.735		NA	
	School ID	Correlation between time quarter slopes and learning materials slopes	NA		NA		**0.010**		-0.050		-0.133	
	School ID	Correlation between time quarter slopes and Covid-19 quarters slopes	NA		NA		NA		0.631		NA	
	School ID	Correlation between Covid-19 quarters slopes and learning materials slopes	NA		NA		NA		-0.041		NA	
	Municipality ID	Standard deviation of intercepts	NA		NA		NA		NA		0.275	
	Municipality ID	Standard deviation of time quarter slopes	NA		NA		NA		NA		0.302	
	Municipality ID	Standard deviation of learning materials slopes	NA		NA		NA		NA		0.061	
	Municipality ID	Correlation between intercept and time quarter slopes	NA		NA		NA		NA		-0.553	
	Municipality ID	Correlation between intercept and learning materials slopes	NA		NA		NA		NA		-0.001	
	Municipality ID	Correlation between time quarter slopes and learning materials slopes	NA		NA		NA		NA		0.770	

			Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value
FIXED EFFECTS		Baseline mental health service use (intercept)	-3.427 (0.015; 0.03–0.03)***	-226.99862	-3.335 (0.023; 0.03–0.04)***	-148.19431	-3.345 (0.023; 0.03–0.04)***	-146.78663	-3.360 (0.023; 0.03–0.04)***	-148.52392	-3.347 (0.028; 0.03–0.04)***	-120.09164
		learn_materials1			**-0.028 (0.010; 0.95–0.99)****	**-2.77364**	**-0.034 (0.013; 0.94–0.99)****	**-2.61836**	**-0.031 (0.013; 0.95–1.00)***	**-2.3313**	**-0.073 (0.015; 0.90–0.96)*****	**-4.9405**
		subject_guidelines1			**-0.075 (0.013; 0.90–0.95)*****	**-5.84907**	**-0.082 (0.013; 0.90–0.94)*****	**-6.31232**	**-0.063 (0.013; 0.92–0.96)*****	**-4.82934**	**-0.083 (0.013; 0.90–0.94)*****	**-6.46405**
		avg_gender_centered	-0.207 (0.030; 0.77–0.86)***	-6.95194	-0.206 (0.030; 0.77–0.86)***	-6.94622	-0.247 (0.032; 0.73–0.83)***	-7.61978	-0.250 (0.032; 0.73–0.83)***	-7.71205	-0.200 (0.032; 0.77–0.87)***	-6.15974
		grade_level10	0.362 (0.011; 1.41–1.47)***	33.33812	0.303 (0.017; 1.31–1.40)***	17.78234	0.299 (0.017; 1.30–1.39)***	17.42052	0.314 (0.017; 1.32–1.42)***	18.27627	0.317 (0.017; 1.33–1.42)***	19.05163
		grade_level6	0.060 (0.008; 1.04–1.08)***	7.41791	0.049 (0.009; 1.03–1.07)***	5.39914	0.055 (0.009; 1.04–1.08)***	6.00923	0.055 (0.009; 1.04–1.08)***	5.98763	0.053 (0.009; 1.04–1.07)***	5.74201
		grade_level7	0.091 (0.008; 1.08–1.11)***	11.31598	0.062 (0.013; 1.04–1.09)***	4.76552	0.080 (0.014; 1.05–1.11)***	5.76896	0.079 (0.014; 1.05–1.11)***	5.70309	0.074 (0.014; 1.05–1.11)***	5.34401
		grade_level8	0.174 (0.011; 1.17–1.22)***	15.85903	0.173 (0.011; 1.16–1.22)***	15.75234	0.192 (0.012; 1.18–1.24)***	16.1171	0.188 (0.012; 1.18–1.24)***	15.72678	0.202 (0.012; 1.20–1.25)***	17.27962
		grade_level9	0.280 (0.011; 1.30–1.35)***	25.66837	0.268 (0.012; 1.28–1.34)***	22.97444	0.278 (0.012; 1.29–1.35)***	23.25865	0.279 (0.012; 1.29–1.35)***	23.25614	0.287 (0.012; 1.30–1.36)***	24.54301
		year_quarter2020Q4	0.345 (0.011; 1.38–1.44)***	31.58113	0.344 (0.011; 1.38–1.44)***	31.51851	0.344 (0.011; 1.38–1.44)***	31.55117	0.341 (0.011; 1.38–1.44)***	31.05495	0.325 (0.012; 1.35–1.42)***	27.65072
		year_quarter2021Q1	0.502 (0.011; 1.62–1.69)***	44.89176	0.501 (0.011; 1.61–1.69)***	44.7766	0.501 (0.011; 1.61–1.69)***	44.94878	0.493 (0.011; 1.60–1.67)***	43.21071	0.463 (0.011; 1.55–1.63)***	32.79195
		year_quarter2021Q2	0.471 (0.012; 1.56–1.64)***	38.96266	0.469 (0.012; 1.56–1.64)***	38.80677	0.469 (0.012; 1.56–1.64)***	39.09721	0.455 (0.013; 1.54–1.62)***	36.23618	0.413 (0.018; 1.46–1.56)***	23.33258
		year_quarter2021Q3	0.473 (0.013; 1.56–1.65)***	35.97069	0.495 (0.014; 1.60–1.69)***	35.52354	0.498 (0.014; 1.60–1.69)***	36.10434	0.472 (0.015; 1.56–1.65)***	31.92635	0.423 (0.022; 1.46–1.59)***	19.06954
		year_quarter2021Q4	0.883 (0.014; 2.35–2.49)***	63.11719	0.904 (0.015; 2.40–2.54)***	61.55002	0.909 (0.015; 2.41–2.55)***	62.69815	0.879 (0.015; 2.34–2.48)***	60.62084	0.818 (0.026; 2.15–2.39)***	31.30829
		year_quarter2022Q1	1.378 (0.015; 3.85–4.09)***	91.02242	1.398 (0.016; 3.92–4.17)***	88.75928	1.406 (0.016; 3.96–4.21)***	90.66165	1.393 (0.015; 3.91–4.14)***	94.37604	1.296 (0.030; 3.44–3.88)***	42.70074
		year_quarter2022Q2	0.308 (0.018; 1.31–1.41)***	17.51921	0.327 (0.018; 1.34–1.44)***	18.11802	0.335 (0.018; 1.35–1.45)***	18.86793	0.336 (0.017; 1.36–1.45)***	20.32532	0.208 (0.035; 1.15–1.32)***	5.88358

Municipality ID *(cell B27)*

Variance components / random effects

Group	Parameter	Model 4 Baseline TWLM	Model 5 Fixed Linear TWLM	Model 6 Fixed Linear Squared TWLM	Model 7 TWLM-by-school	Model 7 TWLM V2 - Adjusting for Covid-19	Model 7 TWLM V3 - Adjusting for Municipality
School ID	Standard deviation of intercepts	0.571	0.572	0.572	0.575	0.913	0.444
School ID	Standard deviation of time quarter slopes	0.144	0.144	0.144	0.186	0.316	0.169
School ID	Standard deviation of TWLM-linear slopes	NA	NA	NA	0.380	0.362	0.362
School ID	Standard deviation of TWLM-squared slopes	NA	NA	NA	0.113	0.101	0.102
School ID	Standard deviation of Covid-19 quarters slopes	NA	NA	NA	NA	0.571	NA
School ID	Correlation between intercept and time quarter slopes	-0.490	-0.490	-0.490	-0.470	-0.800	-0.500
School ID	Correlation between intercept and TWLM-linear slopes	NA	NA	NA	-0.010	0.030	-0.170
School ID	Correlation between intercept and TWLM-squared slopes	NA	NA	NA	0.080	-0.020	0.390
School ID	Correlation between intercept and Covid-19 quarters slopes	NA	NA	NA	NA	-0.790	NA
School ID	Correlation between time quarter slopes and TWLM-linear slopes	NA	NA	NA	-0.310	-0.240	-0.220
School ID	Correlation between time quarter slopes and TWLM-squared slopes	NA	NA	NA	-0.020	0.080	-0.190
School ID	Correlation between TWLR-linear slopes and TWLM-squared slopes	NA	NA	NA	-0.870	NA	-0.880
School ID	Correlation between time quarter slopes and Covid-19 quarters slopes	NA	NA	NA	NA	0.820	NA
School ID	Correlation between Covid-19 quarters slopes and TWLM-linear slopes	NA	NA	NA	NA	-0.100	NA
School ID	Correlation between Covid-19 quarters slopes and TWLM-squared slopes	NA	NA	NA	NA	0.170	NA
School ID	Correlation between TWLR-linear slopes slopes and TWLM-squared slopes	NA	NA	NA	NA	-0.860	NA
Municipality ID	Standard deviation of intercepts	NA	NA	NA	NA	NA	0.340
Municipality ID	Standard deviation of time quarter slopes	NA	NA	NA	NA	NA	0.059
Municipality ID	Standard deviation of TWLM-linear slopes	NA	NA	NA	NA	NA	0.112
Municipality ID	Standard deviation of TWLM-squared slopes	NA	NA	NA	NA	NA	0.045
Municipality ID	Correlation between intercept and time quarter slopes	NA	NA	NA	NA	NA	-0.700
Municipality ID	Correlation between intercept and TWLM-linear slopes	NA	NA	NA	NA	NA	0.910
Municipality ID	Correlation between intercept and TWLM-squared slopes	NA	NA	NA	NA	NA	-0.890
Municipality ID	Correlation between time quarter slopes and TWLM-linear slopes	NA	NA	NA	NA	NA	-0.940
Municipality ID	Correlation between time quarter slopes and TWLM-squared slopes	NA	NA	NA	NA	NA	0.880
Municipality ID	Correlation between TWLM-linear slopes and TWLM-squared slopes	NA	NA	NA	NA	NA	-0.960

Fixed effects

Term	M4 Log-odds (SE, CI)	M4 z-value	M5 Log-odds (SE, CI)	M5 z-value	M6 Log-odds (SE, CI)	M6 z-value	M7 Log-odds (SE, CI)	M7 z-value	V2 Log-odds (SE, CI)	V2 z-value	V3 Log-odds (SE, CI)	V3 z-value
Baseline mental health service use (intercept)	-3.461 (0.015; 0.03–0.03)**	-236.12	-3.391 (0.017; 0.03–0.03)**	-194.659	-3.398 (0.018; 0.03–0.03)**	-192.098	-3.398 (0.018; 0.03–0.03)**	-190.34	-3.433 (0.018; 0.03–0.03)**	-191.612	-3.488 (0.026; 0.03–0.03)**	-133.413
avg_time_with_learn_materials (TWLM)			0.000 (0.003; 0.99–1.01)	-0.0085			0.013 (0.013; 0.99–1.04)	2.13964	0.031 (0.012; 1.01–1.06)*	2.51611	-0.050 (0.016; 0.92–0.98)**	-3.23408
avg_time_with_learn_materials_squared (TWLM^2)					-0.007 (0.003; 0.99–1.00)*	-2.26737	-0.004 (0.004; 0.99–1.00)	-0.952	-0.011 (0.004; 0.98–1.00)*	-2.78461	0.018 (0.005; 1.01–1.03)**	3.44568
subject_guidelines1	-0.079 (0.011; 0.90–0.94)**	-7.42745	-0.076 (0.011; 0.91–0.95)**	-7.03832	-0.075 (0.011; 0.91–0.95)**	-6.911	-0.039 (0.011; 0.91–0.95)**	-3.53282	-0.071 (0.011; 0.94–0.98)**	-6.55849		
avg_gender_centered	-0.192 (0.023; 0.79–0.86)**	-8.263	-0.193 (0.023; 0.79–0.86)**	-8.27535	-0.193 (0.023; 0.79–0.86)**	-8.26677	-0.243 (0.025; 0.75–0.82)**	-9.627	-0.250 (0.025; 0.74–0.82)**	-9.86652	-0.211 (0.025; 0.77–0.85)**	-8.30315
grade_level10	0.349 (0.009; 1.39–1.44)***	38.94	0.327 (0.009; 1.36–1.41)***	34.51096	0.336 (0.010; 1.37–1.43)***	32.76581	0.337 (0.010; 1.37–1.43)***	32.434	0.359 (0.010; 1.40–1.46)***	34.2307	0.364 (0.010; 1.41–1.47)***	35.45734
grade_level6	0.060 (0.006; 1.05–1.08)***	9.326	0.060 (0.007; 1.05–1.08)***	9.05751	0.060 (0.007; 1.04–1.07)***	8.453	0.057 (0.007; 1.04–1.07)***	8.453	0.058 (0.007; 1.05–1.07)***	8.52783	0.060 (0.007; 1.05–1.08)***	8.86296
grade_level7	0.098 (0.006; 1.09–1.12)***	15.413	0.098 (0.006; 1.09–1.12)***	15.27004	0.106 (0.007; 1.10–1.13)***	14.65736	0.110 (0.008; 1.10–1.13)***	13.977	0.115 (0.008; 1.10–1.14)***	14.70309	0.115 (0.008; 1.11–1.14)***	14.94173
grade_level8	0.170 (0.009; 1.16–1.21)***	19.086	0.170 (0.009; 1.16–1.21)***	18.96733	0.172 (0.009; 1.17–1.21)***	19.1028	0.172 (0.009; 1.17–1.21)***	18.777	0.176 (0.009; 1.17–1.21)***	19.24176	0.189 (0.009; 1.19–1.23)***	21.16096
grade_level9	0.278 (0.009; 1.30–1.34)***	31.513	0.278 (0.009; 1.30–1.34)***	31.04241	0.277 (0.009; 1.30–1.34)***	30.98512	0.280 (0.009; 1.30–1.35)***	30.482	0.280 (0.009; 1.30–1.35)***	30.65095	0.296 (0.009; 1.32–1.37)***	33.05271
year_quarter2020Q4	0.350 (0.011; 1.39–1.45)***	32.416	0.349 (0.011; 1.39–1.45)***	32.38128	0.348 (0.011; 1.39–1.45)***	32.24684	0.347 (0.011; 1.39–1.45)***	32.091	0.352 (0.011; 1.39–1.45)***	32.31899	0.353 (0.011; 1.39–1.45)***	32.3878
year_quarter2021Q1	0.517 (0.011; 1.64–1.71)***	48.764	0.516 (0.011; 1.64–1.71)***	48.67369	0.515 (0.011; 1.64–1.71)***	48.34672	0.511 (0.011; 1.63–1.70)***	47.66	0.518 (0.011; 1.64–1.72)***	46.76287	0.524 (0.011; 1.65–1.73)***	47.55989
year_quarter2021Q2	0.500 (0.011; 1.61–1.68)***	46.241	0.499 (0.011; 1.61–1.68)***	45.64771	0.497 (0.011; 1.61–1.68)***	45.64771	0.490 (0.011; 1.60–1.67)***	41.94185	0.497 (0.012; 1.61–1.68)***	43.75149		
year_quarter2021Q3	0.522 (0.011; 1.65–1.72)***	47.471	0.537 (0.011; 1.67–1.75)***	47.79841	0.532 (0.011; 1.66–1.74)***	46.52091	0.524 (0.012; 1.65–1.73)***	44.542	0.519 (0.013; 1.64–1.72)***	39.63105	0.550 (0.013; 1.69–1.78)***	43.07065
year_quarter2021Q4	0.957 (0.011; 2.55–2.66)***	89.205	0.971 (0.011; 2.58–2.70)***	88.25232	0.965 (0.011; 2.57–2.68)***	85.37189	0.955 (0.012; 2.54–2.66)***	80.907	0.885 (0.013; 2.36–2.48)***	67.91545	0.990 (0.013; 2.62–2.76)***	74.36959
year_quarter2022Q1	1.476 (0.011; 4.28–4.47)***	138.62	1.490 (0.011; 4.34–4.53)***	135.6283	1.484 (0.011; 4.31–4.51)***	130.8262	1.473 (0.012; 4.26–4.47)***	122.23	1.424 (0.013; 4.05–4.26)***	112.3474	1.515 (0.016; 4.43–4.68)***	107.2402
year_quarter2022Q2	0.448 (0.012; 1.53–1.60)***	36.853	0.462 (0.013; 1.55–1.63)***	36.89132	0.456 (0.013; 1.54–1.62)***	35.50934	0.441 (0.014; 1.51–1.60)***	32.199	0.403 (0.014; 1.46–1.54)***	29.04877	0.491 (0.016; 1.58–1.69)***	30.35753
year_quarter2022Q3	0.145 (0.013; 1.13–1.19)***	11.027	0.159 (0.014; 1.14–1.20)***	11.63858	0.151 (0.014; 1.13–1.20)***	10.77226	0.137 (0.015; 1.11–1.18)***	9.106	0.111 (0.015; 1.09–1.15)***	7.41046	0.197 (0.018; 1.18–1.26)***	10.93384
year_quarter2022Q4	0.387 (0.013; 1.43–1.51)***	29.374	0.400 (0.014; 1.45–1.53)***	28.97353	0.393 (0.014; 1.44–1.52)***	27.67271	0.379 (0.015; 1.41–1.51)***	25.995	0.363 (0.015; 1.40–1.48)***	23.66692	0.446 (0.019; 1.51–1.62)***	23.48594
year_quarter2023Q1	0.516 (0.013; 1.63–1.72)***	38.313	0.529 (0.014; 1.65–1.75)***	37.04323	0.522 (0.015; 1.64–1.74)***	35.87715	0.509 (0.016; 1.61–1.72)***	31.67	0.500 (0.016; 1.60–1.70)***	31.19477	0.585 (0.020; 1.73–1.87)***	28.90019
year_quarter2023Q2	0.447 (0.014; 1.52–1.61)***	31.762	0.460 (0.015; 1.54–1.63)***	30.53881	0.456 (0.015; 1.53–1.62)***	29.93483	0.442 (0.017; 1.50–1.61)***	25.995	0.436 (0.017; 1.50–1.60)***	25.52659	0.526 (0.022; 1.62–1.77)***	24.219
year_quarter2023Q3	0.196 (0.015; 1.18–1.25)***	12.665	0.205 (0.016; 1.19–1.27)***	12.7798	0.202 (0.016; 1.19–1.26)***	12.49602	0.184 (0.018; 1.16–1.25)***	10.166	0.185 (0.018; 1.16–1.25)***	10.08045	0.274 (0.023; 1.26–1.38)***	11.75885
year_quarter2023Q4	0.445 (0.016; 1.51–1.61)***	28.624	0.454 (0.016; 1.53–1.63)***	27.8505	0.452 (0.016; 1.52–1.62)***	27.67256	0.433 (0.019; 1.49–1.60)***	23.317	0.435 (0.019; 1.49–1.60)***	22.62163	0.532 (0.024; 1.62–1.79)***	21.75461

		Model 8 Gender Base		Model 9 Gender LM Interaction		Model 10 Gender LM Interaction Random Slope	
RANDOM EFFECTS	School ID	Standard deviation of intercepts	0.582		0.582		0.642	
	School ID	Standard deviation of time quarter slopes	0.353		0.352		0.338	
	School ID	Standard deviation of learning materials slopes	NA		NA		0.468	
	School ID	Standard deviation of gender slopes	NA		NA		0.485	
	School ID	Standard deviation of gender:learning materials slopes	NA		NA		0.601	
	School ID	Correlation between intercept and time quarter slopes	-0.540		-0.540		-0.460	
	School ID	Correlation between intercept and learning materials slopes	NA		NA		-0.370	
	School ID	Correlation between intercept and gender slopes	NA		NA		-0.390	
	School ID	Correlation between intercept and gender:learning materials slopes	NA		NA		0.260	
	School ID	Correlation between time quarter and learning materials slopes	NA		NA		-0.010	
	School ID	Correlation between time quarter and gender slopes	NA		NA		-0.010	
	School ID	Correlation between time quarter and gender:learning materials slopes	NA		NA		0.050	
	School ID	Correlation between learning materials and gender slopes	NA		NA		0.470	
	School ID	Correlation between learning materials and gender:learning materials	NA		NA		-0.690	
	School ID	Correlation between gender and gender:learning materials slopes	NA		NA		-0.710	

		Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value	Log-odds (SE, CI)	z-value
FIXED EFFECTS		Baseline mental health service use (intercept)	-3.192 (0.017; 0.04–0.04)***	-183.76	-3.171 (0.029; 0.04–0.04)***	-110.3	-3.189 (0.030; 0.04–0.04)***	-107.4637
		learn_materials			-0.005 (0.014; 0.97–1.02)	-0.356	-0.016 (0.018; 0.95–1.02)	-0.88619
		subject_guidelines1			-0.016 (0.018; 0.95–1.02)	-0.884	-0.025 (0.018; 0.94–1.01)	-1.33905
		gender1	-0.525 (0.020; 0.57–0.61)***	-26.648	-0.386 (0.037; 0.63–0.73)***	-10.5	-0.422 (0.039; 0.61–0.71)***	-10.75089
		gender1:learn_materials			-0.050 (0.020; 0.91–0.99)*	-2.468	-0.029 (0.025)	-1.13465
		subject_guidelines1:gender1			-0.115 (0.024; 0.85–0.94)***	-4.701	-0.112 (0.025; 0.85–0.94)***	-4.55237
		grade_level10	0.042 (0.013; 1.02–1.07)**	3.191	0.030 (0.022; 0.99–1.08)	1.342	0.031 (0.023; 0.99–1.08)	1.37227
		grade_level6	0.027 (0.011; 1.01–1.05)*	2.525	0.025 (0.012; 1.00–1.05)*	2.064	0.027 (0.012; 1.00–1.05)*	2.19135
		grade_level7	0.004 (0.011; 0.98–1.03)	0.416	-0.001 (0.013; 0.97–1.03)	-0.031	0.002 (0.019; 0.97–1.04)	0.09888
		grade_level8	-0.012 (0.013; 0.96–1.01)	-0.931	-0.013 (0.013; 0.96–1.01)	-0.995	0.003 (0.015; 0.97–1.03)	0.16755
		grade_level9	-0.001 (0.013; 0.97–1.03)	-0.074	-0.004 (0.014; 0.97–1.02)	-0.263	0.009 (0.016; 0.98–1.04)	0.56562
		year_quarter2020Q4	0.309 (0.015; 1.32–1.40)***	21.01	0.308 (0.015; 1.32–1.40)***	20.967	0.309 (0.015; 1.32–1.40)***	21.07374
		year_quarter2021Q1	0.424 (0.015; 1.48–1.57)***	28.615	0.423 (0.015; 1.48–1.57)***	28.541	0.424 (0.015; 1.48–1.57)***	28.73742
		year_quarter2021Q2	0.354 (0.016; 1.38–1.47)***	22.671	0.352 (0.016; 1.38–1.47)***	22.576	0.354 (0.016; 1.38–1.47)***	22.79302
		year_quarter2021Q3	0.407 (0.016; 1.45–1.55)***	24.952	0.409 (0.017; 1.46–1.56)***	23.47	0.414 (0.017; 1.46–1.57)***	23.88525
		year_quarter2021Q4	0.793 (0.017; 2.14–2.28)***	47.571	0.795 (0.018; 2.14–2.29)***	44.77	0.803 (0.018; 2.16–2.31)***	45.61251
		year_quarter2022Q1	1.296 (0.017; 3.53–3.78)***	74.637	1.298 (0.018; 3.53–3.80)***	70.562	1.311 (0.018; 3.58–3.85)***	72.08462
		year_quarter2022Q2	0.232 (0.020; 1.21–1.31)***	11.543	0.233 (0.021; 1.21–1.32)***	11.128	0.243 (0.021; 1.22–1.33)***	11.73734
		grade_level10:gender1	0.669 (0.015; 1.89–2.01)***	43.273	0.573 (0.030; 1.67–1.88)***	19.278	0.567 (0.032; 1.66–1.88)***	17.78252
		grade_level6:gender1	0.079 (0.016; 1.05–1.12)***	4.859	0.060 (0.018; 1.02–1.10)***	3.312	0.071 (0.018; 1.03–1.11)***	3.81891
		grade_level7:gender1	0.200 (0.016; 1.18–1.26)***	12.37	0.149 (0.026; 1.10–1.22)***	5.723	0.185 (0.028; 1.14–1.27)***	6.67056
		grade_level8:gender1	0.413 (0.016; 1.47–1.56)***	26.004	0.413 (0.016; 1.47–1.56)***	25.979	0.419 (0.021; 1.46–1.58)***	20.10139
		grade_level9:gender1	0.596 (0.016; 1.76–1.87)***	38.084	0.577 (0.018; 1.72–1.84)***	32.758	0.575 (0.021; 1.70–1.85)***	26.96472
		gender1:year_quarter2020Q4	0.080 (0.022; 1.04–1.13)***	3.723	0.080 (0.022; 1.04–1.13)***	3.715	0.080 (0.022; 1.04–1.13)***	3.69759
		gender1:year_quarter2021Q1	0.170 (0.021; 1.14–1.23)***	8.099	0.169 (0.021; 1.14–1.23)***	8.078	0.169 (0.021; 1.14–1.23)***	8.05439
		gender1:year_quarter2021Q2	0.247 (0.021; 1.23–1.33)***	11.753	0.247 (0.021; 1.23–1.33)***	11.715	0.246 (0.021; 1.23–1.33)***	11.68047
		gender1:year_quarter2021Q3	0.145 (0.021; 1.11–1.20)***	6.906	0.187 (0.023; 1.15–1.26)***	8.104	0.186 (0.023; 1.15–1.26)***	8.00704
		gender1:year_quarter2021Q4	0.195 (0.020; 1.17–1.26)***	9.892	0.237 (0.022; 1.21–1.32)***	10.783	0.234 (0.022; 1.21–1.32)***	10.59079
		gender1:year_quarter2022Q1	0.179 (0.019; 1.15–1.24)***	9.547	0.221 (0.021; 1.20–1.30)***	10.442	0.216 (0.021; 1.19–1.29)***	10.14332
		gender1:year_quarter2022Q2	0.164 (0.021; 1.13–1.23)***	7.664	0.205 (0.023; 1.17–1.29)***	8.743	0.201 (0.024; 1.17–1.28)***	8.49385

Results from models converted to Odds Ratios with corresponding Confidence Intervals, given as OR (CI)

	MODEL 1	MODEL 2	MODEL 3	MODEL 3 - Covid	MODEL 3 - Municipality	Model 4	Model 5	Model 6	Model 7	Model 7 - Covid	Model 7 - Municipality	Model 8	Model 9	Model 10
Baseline mental health service use (intercept)	0.03 (0.03–0.03)***	0.04 (0.03–0.04)***	0.04 (0.03–0.04)***	0.03 (0.03–0.04)***	0.04 (0.03–0.04)***	0.03 (0.03–0.03)***	0.03 (0.03–0.03)***	0.03 (0.03–0.03)***	0.03 (0.03–0.03)***	0.03 (0.03–0.03)***	0.03 (0.03–0.03)***	0.04 (0.04–0.04)***	0.04 (0.04–0.04)***	0.04 (0.04–0.04)***
learn_materials1	NA	**0.97 (0.95–0.99)****	**0.97 (0.94–0.99)****	**0.97 (0.95–1.00)***	**0.93 (0.90–0.96)*****	NA	NA	NA	NA	NA	NA	NA	**1.00 (0.97–1.02)**	**0.98 (0.95–1.02)**
subject_guidelines1	NA	**0.93 (0.90–0.95)*****	**0.92 (0.90–0.94)*****	**0.94 (0.92–0.96)*****	**0.92 (0.90–0.94)*****	NA	**0.92 (0.90–0.94)*****	**0.93 (0.91–0.95)*****	**0.93 (0.91–0.95)*****	**0.96 (0.94–0.98)*****	**0.93 (0.91–0.95)*****	NA	**0.98 (0.95–1.02)**	**0.98 (0.94–1.01)**
avg_time_with_learn_materials	NA	NA	NA	NA	NA	NA	**1.00 (0.99–1.01)**	**1.02 (1.00–1.03)***	**1.01 (0.99–1.04)**	**1.03 (1.01–1.06)***	**0.95 (0.92–0.98)****	NA	NA	NA
avg_time_with_learn_materials_squared	NA	NA	NA	NA	NA	NA	**0.99 (0.99–1.00)***	**1.00 (0.99–1.00)**	**0.99 (0.98–1.00)**	**1.00 (0.99–1.00)**	**1.02 (1.01–1.03)*****	NA	NA	NA
gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.59 (0.57–0.61)*****	**0.68 (0.63–0.73)*****	**0.66 (0.61–0.71)*****
gender1:learn_materials	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.95 (0.91–0.99)***	**0.97 (0.92–1.02)**
subject_guidelines1:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.89 (0.85–0.94)*****	**0.89 (0.85–0.94)*****
avg_gender_centered	0.81 (0.77–0.86)***	0.81 (0.77–0.86)***	0.78 (0.73–0.83)***	0.78 (0.73–0.83)***	0.82 (0.77–0.87)***	0.82 (0.79–0.86)***	0.82 (0.79–0.86)***	0.82 (0.79–0.86)***	0.78 (0.75–0.82)***	0.78 (0.74–0.82)***	0.81 (0.77–0.85)***	NA	NA	NA
grade_level10	1.44 (1.41–1.47)***	1.35 (1.31–1.40)***	1.35 (1.30–1.39)***	1.37 (1.32–1.42)***	1.37 (1.33–1.42)***	1.42 (1.39–1.44)***	1.39 (1.36–1.41)***	1.40 (1.37–1.43)***	1.40 (1.37–1.43)***	1.43 (1.40–1.46)***	1.44 (1.41–1.47)***	1.04 (1.02–1.07)**	1.03 (0.99–1.08)	1.03 (0.99–1.08)
grade_level6	1.06 (1.04–1.08)***	1.05 (1.03–1.07)***	1.06 (1.04–1.08)***	1.06 (1.04–1.08)***	1.05 (1.04–1.07)***	1.06 (1.05–1.08)***	1.06 (1.05–1.08)***	1.06 (1.05–1.08)***	1.06 (1.04–1.07)***	1.06 (1.05–1.07)***	1.06 (1.05–1.08)***	1.03 (1.01–1.05)*	1.03 (1.00–1.05)*	1.03 (1.00–1.05)*
grade_level7	1.09 (1.06–1.11)***	1.06 (1.04–1.09)***	1.08 (1.05–1.11)***	1.08 (1.05–1.11)***	1.08 (1.05–1.11)***	1.10 (1.09–1.12)***	1.11 (1.10–1.13)***	1.12 (1.10–1.13)***	1.12 (1.10–1.13)***	1.12 (1.10–1.14)***	1.12 (1.10–1.14)***	1.00 (0.98–1.03)	1.00 (0.97–1.03)	1.00 (0.97–1.03)
grade_level8	1.19 (1.17–1.22)***	1.19 (1.16–1.22)***	1.21 (1.18–1.24)***	1.21 (1.18–1.24)***	1.22 (1.20–1.25)***	1.19 (1.16–1.21)***	1.18 (1.16–1.21)***	1.19 (1.17–1.21)***	1.19 (1.17–1.21)***	1.19 (1.17–1.21)***	1.21 (1.19–1.23)***	0.99 (0.96–1.01)	0.99 (0.96–1.01)	1.00 (0.97–1.03)
grade_level9	1.32 (1.30–1.35)***	1.31 (1.28–1.34)***	1.32 (1.29–1.35)***	1.32 (1.29–1.35)***	1.33 (1.30–1.36)***	1.32 (1.30–1.34)***	1.32 (1.30–1.34)***	1.32 (1.30–1.34)***	1.32 (1.30–1.35)***	1.32 (1.30–1.35)***	1.34 (1.32–1.37)***	1.00 (0.97–1.03)	1.00 (0.97–1.02)	1.01 (0.98–1.04)
year_quarter2020Q4	1.41 (1.38–1.44)***	1.41 (1.38–1.44)***	1.41 (1.38–1.44)***	1.41 (1.38–1.44)***	1.38 (1.35–1.42)***	1.42 (1.39–1.45)***	1.42 (1.39–1.45)***	1.42 (1.39–1.45)***	1.41 (1.39–1.45)***	1.42 (1.39–1.45)***	1.42 (1.39–1.45)***	1.36 (1.32–1.40)***	1.36 (1.32–1.40)***	1.36 (1.32–1.40)***
year_quarter2021Q1	1.65 (1.62–1.69)***	1.65 (1.61–1.69)***	1.65 (1.61–1.69)***	1.64 (1.60–1.67)***	1.59 (1.55–1.63)***	1.68 (1.64–1.71)***	1.68 (1.64–1.71)***	1.67 (1.64–1.71)***	1.67 (1.63–1.70)***	1.68 (1.64–1.72)***	1.69 (1.65–1.73)***	1.53 (1.48–1.57)***	1.53 (1.48–1.57)***	1.53 (1.48–1.57)***
year_quarter2021Q2	1.60 (1.56–1.64)***	1.60 (1.56–1.64)***	1.60 (1.56–1.64)***	1.58 (1.54–1.62)***	1.51 (1.46–1.56)***	1.65 (1.61–1.68)***	1.65 (1.61–1.68)***	1.64 (1.61–1.68)***	1.63 (1.60–1.67)***	1.64 (1.61–1.68)***	1.67 (1.63–1.71)***	1.42 (1.38–1.47)***	1.42 (1.38–1.47)***	1.42 (1.38–1.47)***
year_quarter2021Q3	1.60 (1.56–1.65)***	1.64 (1.60–1.69)***	1.65 (1.60–1.69)***	1.60 (1.56–1.65)***	1.53 (1.46–1.59)***	1.69 (1.65–1.72)***	1.71 (1.67–1.75)***	1.70 (1.66–1.74)***	1.69 (1.65–1.73)***	1.68 (1.64–1.72)***	1.73 (1.69–1.78)***	1.50 (1.45–1.55)***	1.51 (1.46–1.56)***	1.51 (1.46–1.57)***
year_quarter2021Q4	2.42 (2.35–2.49)***	2.47 (2.40–2.54)***	2.48 (2.41–2.55)***	2.41 (2.34–2.48)***	2.27 (2.15–2.39)***	2.60 (2.55–2.66)***	2.64 (2.58–2.70)***	2.62 (2.57–2.68)***	2.60 (2.54–2.66)***	2.62 (2.56–2.68)***	2.69 (2.62–2.76)***	2.21 (2.14–2.29)***	2.21 (2.14–2.29)***	2.23 (2.16–2.31)***
year_quarter2022Q1	3.97 (3.85–4.09)***	0.00 (3.92–4.17)***	4.08 (3.96–4.21)***	4.03 (3.91–4.14)***	3.65 (3.44–3.88)***	4.38 (4.28–4.47)***	4.44 (4.34–4.53)***	4.41 (4.31–4.51)***	4.36 (4.26–4.47)***	4.15 (4.05–4.26)***	4.55 (4.43–4.68)***	3.66 (3.53–3.78)***	3.66 (3.53–3.80)***	3.71 (3.58–3.85)***
year_quarter2022Q2	1.36 (1.31–1.41)***	0.00 (1.34–1.44)***	1.40 (1.35–1.45)***	1.40 (1.36–1.45)***	1.23 (1.15–1.32)***	1.57 (1.53–1.60)***	1.59 (1.55–1.63)***	1.58 (1.54–1.62)***	1.55 (1.51–1.60)***	1.50 (1.46–1.54)***	1.63 (1.58–1.69)***	1.26 (1.21–1.31)***	1.26 (1.21–1.32)***	1.28 (1.22–1.33)***
year_quarter2022Q3	NA	NA	NA	NA	NA	1.16 (1.13–1.19)***	1.17 (1.14–1.20)***	1.16 (1.13–1.20)***	1.15 (1.11–1.18)***	1.12 (1.09–1.15)***	1.22 (1.18–1.26)***	NA	NA	NA
year_quarter2022Q4	NA	NA	NA	NA	NA	1.47 (1.43–1.51)***	1.49 (1.45–1.53)***	1.48 (1.44–1.52)***	1.46 (1.42–1.51)***	1.44 (1.40–1.48)***	1.56 (1.51–1.62)***	NA	NA	NA
year_quarter2023Q1	NA	NA	NA	NA	NA	1.67 (1.63–1.72)***	1.70 (1.65–1.75)***	1.69 (1.64–1.74)***	1.66 (1.61–1.72)***	1.65 (1.60–1.70)***	1.80 (1.73–1.87)***	NA	NA	NA
year_quarter2023Q2	NA	NA	NA	NA	NA	1.56 (1.52–1.61)***	1.58 (1.54–1.63)***	1.58 (1.53–1.62)***	1.56 (1.50–1.60)***	1.55 (1.50–1.60)***	1.69 (1.62–1.77)***	NA	NA	NA
year_quarter2023Q3	NA	NA	NA	NA	NA	1.22 (1.18–1.25)***	1.23 (1.19–1.27)***	1.22 (1.19–1.26)***	1.20 (1.16–1.25)***	1.20 (1.16–1.25)***	1.32 (1.26–1.38)***	NA	NA	NA
year_quarter2023Q4	NA	NA	NA	NA	NA	1.56 (1.51–1.61)***	1.58 (1.53–1.63)***	1.57 (1.52–1.62)***	1.54 (1.49–1.60)***	1.54 (1.49–1.60)***	1.70 (1.62–1.79)***	NA	NA	NA
grade_level10:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.95 (1.89–2.01)***	1.77 (1.67–1.88)***	1.76 (1.66–1.88)***
grade_level6:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.08 (1.05–1.12)***	1.06 (1.02–1.10)***	1.07 (1.03–1.11)***
grade_level7:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.22 (1.18–1.26)***	1.16 (1.10–1.22)***	1.20 (1.14–1.27)***
grade_level8:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.51 (1.47–1.56)***	1.51 (1.47–1.56)***	1.52 (1.46–1.58)***
grade_level9:gender1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.82 (1.76–1.87)***	1.78 (1.72–1.84)***	1.78 (1.70–1.85)***
gender1:year_quarter2020Q4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.08 (1.04–1.13)***	1.08 (1.04–1.13)***	1.08 (1.04–1.13)***
gender1:year_quarter2021Q1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.18 (1.14–1.23)***	1.18 (1.14–1.23)***	1.18 (1.14–1.23)***
gender1:year_quarter2021Q2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.28 (1.23–1.33)***	1.28 (1.23–1.33)***	1.28 (1.23–1.33)***
gender1:year_quarter2021Q3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.16 (1.11–1.20)***	1.20 (1.15–1.26)***	1.20 (1.15–1.26)***
gender1:year_quarter2021Q4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.22 (1.17–1.26)***	1.27 (1.21–1.32)***	1.26 (1.21–1.32)***
gender1:year_quarter2022Q1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.20 (1.15–1.24)***	1.25 (1.20–1.30)***	1.24 (1.19–1.29)***
gender1:year_quarter2022Q2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.18 (1.13–1.23)***	1.23 (1.17–1.29)***	1.22 (1.17–1.28)***

S7 Variance Decomposition

Model		Variance	Std. Dev	Correlations				Covariances				Between-cluster Variances (at 2 Years)	Total Latent Variation	ICC 2 Years	Reform's Share of Total Cluster Variance	Reform's Share of Total	Pearson's R (Intercept-LM/TWLM)
Effects of Learning Materials																	
1. Base: changes over time and between grades	τ_{00} school_ID	0.333	0.577														
	τ_{11} school_ID.time_quarter	0.124	0.352	-0.544													
2. Average effect of learning materials	τ_{00} school_ID	0.333	0.577														
	τ_{11} school_ID.time_quarter	0.123	0.351	-0.544				-0.110				0.386	3.676	0.105			
3. Learning materials-by-school interaction	τ_{00} school_ID	0.348	0.590														
	τ_{11} school_ID.time_quarter	0.114	0.338	-0.515				-0.103									
	τ_{11} school_ID.learn_materials (2020Q3)	0.121	0.348	-0.280	0.010			-0.057	0.001			0.405	3.695	0.109530632	0.300	0.033	-0.279573417
3.V2 Learning materials-by-school interaction, adjusted for Covid-19	τ_{00} school_ID	0.691	0.831														
	τ_{11} school_ID.time_quarter	0.122	0.349	-0.694				-0.202									
	τ_{11} school_ID.covid19	0.276	0.526	-0.735	0.631			-0.321	0.116								
	τ_{11} school_ID.learn_materials	0.121	0.348	-0.157	-0.050	-0.041		-0.045	-0.006	-0.008							-0.374007467
	τ_{11} school_ID.learn_materials Covid-Adjusted											0.378	3.290	0.115037997	0.320	0.037	
3.V3 Learning materials-by-school interaction, adjusted for municipality	τ_{00} school_ID	0.272	0.521														
	τ_{11} school_ID.time_quarter	0.041	0.203	-0.710				-0.075									
	τ_{11} school_ID.learn_materials	0.115	0.339	-0.263	-0.133			-0.046	-0.009			0.122	3.411	0.035621317	0.947	0.034	-0.262736953
	τ_{00} municipality_ID	0.076	0.275														
	τ_{11} municipality_ID.time_quarter	0.091	0.302	-0.553				-0.046									
	τ_{11} municipality_ID.learn_materials	0.004	0.061	-0.001	0.770			0.000	0.014			0.318	3.608	0.088072351	0.012	0.001	-0.001306164
Effects of Average Time with Learning Materials (TWLM)																	
4. Base: changes over time and between grades	τ_{00} school_ID	0.327	0.571														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
5. Average effect of TWLM (linear)	τ_{00} school_ID	0.328	0.572														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
6. Average effect of TWLM (linear and squared)	τ_{00} school_ID	0.328	0.572														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
7. TWLM-by-school interaction	τ_{00} school_ID	0.331	0.575														
	τ_{11} school_ID.time_quarter	0.035	0.186	-0.470				-0.050									
	τ_{11} school_ID.TWLM-linear	0.144	0.380	-0.010	-0.310			-0.002	-0.022								-0.01
	τ_{11} school_ID.TWLM-squared	0.013	0.113	0.080	-0.020	-0.870		0.005	0.000	-0.037							0.08
	TWLM linear + squared											0.184	3.473	0.052847894	0.449	0.024	
7.V2 TWLM-by-school interaction, adjusted for Covid-19	τ_{00} school_ID	0.833	0.913														
	τ_{11} school_ID.time_quarter	0.100	0.316	-0.800				-0.231									
	τ_{11} school_ID.Covid19	0.326	0.571	-0.790	0.820			-0.412	0.148								
	τ_{11} school_ID.TWLM-linear	0.131	0.362	0.030	-0.240	-0.100		0.010	-0.027	-0.021							0.030
	τ_{11} school_ID.TWLM-squared	0.010	0.101	-0.020	0.080	0.170	-0.860	-0.002	0.003	0.010	-0.032						-0.020
	School TWLM linear + squared Covid-Adjusted											0.241	3.531	0.068	0.325	0.022	
7. V3 TWLM-by-school interaction, adjusted for municipality	τ_{00} school_ID	0.197	0.444														
	τ_{11} school_ID.time_quarter	0.028	0.169	-0.500				-0.037									
	τ_{11} school_ID.TWLM-linear	0.131	0.362	-0.170	-0.220			-0.027	-0.013								-0.170
	τ_{11} school_ID.TWLM-squared	0.010	0.102	0.390	-0.190	-0.880		0.018	-0.003	-0.033							0.390
	School TWLM linear + squared											0.111	3.401	0.033	0.690	0.022	
	τ_{00} municipality_ID	0.115	0.340														
	τ_{11} municipality_ID.time_quarter	0.004	0.059	-0.700				-0.014									
	τ_{11} municipality_ID.TWLM-linear	0.013	0.112	0.910	-0.940			0.035	-0.006								0.910
	τ_{11} municipality_ID.TWLM-squared	0.002	0.045	-0.890	0.880	-0.960		-0.014	0.002	-0.005							-0.890
	Mun. TWLM linear + squared											0.101	3.391	0.030	0.048	0.001	
Gender Differences in Effects of Learning Materials																	
8. Base: interaction between gender and time, and gender and grade	τ_{00} school_ID	0.338	0.582														
	τ_{11} school_ID.time_quarter	0.125	0.353	-0.540													
9. Interaction between learning materials and gender	τ_{00} school_ID	0.339	0.582														
	τ_{11} school_ID.time_quarter	0.124	0.352	-0.540													
10. Interaction between learning materials and gender by school	τ_{00} school_ID	0.412	0.642														
	τ_{11} school_ID.time_quarter	0.115	0.338	-0.460				-0.100									

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S7 Variance Decomposition

Model		Variance	Std. Dev	Correlations				Covariances				Between-cluster Variances (at 2 Years)	Total Latent Variation	ICC 2 Years	Reform's Share of Total Cluster Variance	Reform's Share of Total	Pearson's R (Intercept-LM/TWLM)
	τ_{11} school_ID.learn_materials	0.121	0.348	-0.157	-0.050	-0.041		-0.045	-0.006	-0.008							-0.374007467
	τ_{11} school_ID.learn_materials Covid-Adjusted											0.378	3.290	0.115037997	0.320	0.037	
3. V3 Learning materials-by-school interaction, adjusted for municipality	τ_{00} school_ID	0.272	0.521														
	τ_{11} school_ID.time_quarter	0.041	0.203	-0.710				-0.075									
	τ_{11} school_ID.learn_materials	0.115	0.339	-0.263	-0.133			-0.046	-0.009			0.122	3.411	0.035621317	0.947	0.034	-0.262736953
	τ_{00} municipality_ID	0.076	0.275														
	τ_{11} municipality_ID.time_quarter	0.091	0.302	-0.553				-0.046									
	τ_{11} municipality_ID.learn_materials	0.004	0.061	-0.001	0.770			0.000	0.014			0.318	3.608	0.088072351	0.012	0.001	-0.001306164
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4. Base: changes over time and between grades	τ_{00} school_ID	0.327	0.571														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
5. Average effect of TWLM (linear)	τ_{00} school_ID	0.328	0.572														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
6. Average effect of TWLM (linear and squared)	τ_{00} school_ID	0.328	0.572														
	τ_{11} school_ID.time_quarter	0.021	0.144	-0.490													
7. TWLM-by-school interaction	τ_{00} school_ID	0.331	0.575														
	τ_{11} school_ID.time_quarter	0.035	0.186	-0.470				-0.050									
	τ_{11} school_ID.TWLM-linear	0.144	0.380	-0.010	-0.310	-0.870		-0.002	-0.022								-0.01
	τ_{11} school_ID.TWLM-squared	0.013	0.113	0.080	-0.020	-0.870		0.005	0.000	-0.037							0.08
	TWLM linear + squared											0.184	3.473	0.052847894	0.449	0.024	
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	τ_{11} school_ID.Covid19	0.326	0.571	-0.790	0.820			-0.412	0.148								
	τ_{11} school_ID.TWLM-linear	0.131	0.362	0.030	-0.240	-0.100		0.010	-0.027	-0.021							0.030
	τ_{11} school_ID.TWLM-squared	0.010	0.101	-0.020	0.080	0.170	-0.860	-0.002	0.003	0.010	-0.032						-0.020
	School TWLM linear + squared Covid-Adjusted											0.241	3.531	0.068	0.325	0.022	
7. V3 TWLM-by-school interaction, adjusted for municipality	τ_{00} school_ID	0.197	0.444														
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	τ_{11} school_ID.TWLM-linear	0.131	0.362	-0.170	-0.220			-0.027	-0.013								-0.170
	τ_{11} school_ID.TWLM-squared	0.010	0.102	0.390	-0.190	-0.880		0.018	-0.003	-0.033							0.390
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8. Base: interaction between gender and time, and gender and grade	τ_{00} school_ID	0.338	0.582														
	τ_{11} school_ID.time_quarter	0.125	0.353	-0.540													
9. Interaction between learning materials and gender	τ_{00} school_ID	0.339	0.582														
	τ_{11} school_ID.time_quarter	0.124	0.352	-0.540													
10. Interaction between learning materials and gender by school	τ_{00} school_ID	0.412	0.642														
	τ_{11} school_ID.time_quarter	0.115	0.338	-0.460				-0.100									
	τ_{11} school_ID.learn_materials	0.219	0.468	-0.370	-0.010			-0.111	-0.002								
	τ_{11} school_ID.gender	0.235	0.485	-0.390	-0.010	0.470		-0.121	-0.002								
	τ_{11} school_ID.learn_materials:gender	0.361	0.601	0.260	0.050	-0.690		0.100	0.010	-0.201							0.26
	τ_{11} school_ID.learn_materials:gender male											0.464	3.754	0.123653458	0.778	0.096	
	τ_{11} school_ID.learn_materials:gender female											0.647045558	3.936913692	0.164353503	0.558	0.092	

Model	nobs	nschools	AIC	BIC	logLik	deviance	Df.residual
Model 3_0 Empty	70424	2443	243469.7	243790.4	-121699.9	243399.7	70389
Model 3A School Type	70424	2443	244123.5	244361.7	-122035.7	244071.5	70398
Model 3B Teachers per Student	70424	2443	244000.8	244220.7	-121976.4	243952.8	70400
Model 3C School Size (Deciles)	70424	2443	244118.6	244338.5	-122035.3	244070.6	70400
Model 3D Average Teacher Education	70424	2443	244140.1	244360.0	-122046.1	244092.1	70400
Model 3E Average Teacher Age	70424	2443	244105.1	244325.0	-122028.6	244057.1	70400
Model 3F Assistants to Non-Assistants Ratio	70424	2443	244028.1	244247.9	-121990.0	243980.1	70400
Model 3G Special Education to Non-Special Education Ratio	70424	2443	243650.0	243869.9	-121801.0	243602.0	70400
Model 3H Females to Male Teachers Ratio	70424	2443	244139.0	244358.9	-122045.5	244091.0	70400
Model 3I Any Asylum Seekers	70424	2443	244147.1	244367.0	-122049.5	244099.1	70400
Model 3J Any New Norwegian Education	70424	2443	244145.3	244365.2	-122048.7	244097.3	70400
Model 3K Any Mother Tongue or Bilingual Education	70424	2443	244146.3	244366.2	-122049.1	244098.3	70400
Model 3L Any Tailored Education	70424	2443	244146.7	244366.6	-122049.4	244098.7	70400
Model 3M Multivariate Model with all variables from Model 3A to 3L	70424	2443	243456.7	243896.5	-121680.4	243360.7	70376

	Pairwise Associations		Multivariate Associations		Pairwise Associations		Multivariate Associations	
	Main Effects (School Structure) β (CI)	Interaction with Learning Materials β (CI)	Main Effects (School Structure) β (CI)	Interaction with Learning Materials β (CI)	Main Effects (School Structure) OR (CI)	Interaction with Learning Materials OR (CI)	Main Effects (School Structure) OR (CI)	Interaction with Learning Materials OR (CI)
School type combined (ref category: primary school)	-0.004 (-0.054 – 0.046)	-0.062** (-0.109 – -0.016)	-0.088*** (-0.138 – -0.03)	-0.089*** (-0.140 – -0.038)	0.996 (0.947 – 1.047)	0.940** (0.897 – 0.985)	0.916*** (0.871 – 0.962)	0.915*** (0.869 – 0.963)
School type secondary (ref category: primary school)	0.112*** (0.057 – 0.167)	-0.078** (-0.128 – -0.029)	0.043 (-0.030 – 0.115)	-0.134*** (-0.208 – -0.060)	1.118*** (1.059 – 1.181)	0.925** (0.880 – 0.971)	1.044 (0.970 – 1.122)	0.875*** (0.812 – 0.942)
Teacher per student ratio	1.355*** (1.121 – 1.589)	0.015 (-0.244 – 0.274)	0.912*** (0.599 – 1.225)	0.264 (-0.102 – 0.629)	3.875*** (3.067 – 4.897)	1.015 (0.784 – 1.316)	2.489*** (1.820 – 3.404)	1.302 (0.903 – 1.875)
School size decile	0.015*** (0.007 – 0.022)	0.007 (0.000 – 0.014)	0.029*** (0.019 – 0.039)	0.019*** (0.009 – 0.030)	1.015*** (1.007 – 1.023)	1.007 (1.000 – 1.015)	1.030*** (1.020 – 1.040)	1.019*** (1.009 – 1.030)
Teacher education	-0.039 (-0.109 – 0.032)	-0.062 (-0.127 – 0.004)	-0.032 (-0.116 – 0.052)	-0.076 (-0.164 – 0.012)	0.962 (0.897 – 1.032)	0.940 (0.881 – 1.004)	0.969 (0.890 – 1.054)	0.927 (0.849 – 1.012)
Teacher age	-0.015*** (-0.021 – -0.00)	-0.008** (-0.014 – -0.002)	-0.011*** (-0.017 – -0.00)	-0.003 (-0.010 – 0.003)	0.986*** (0.979 – 0.992)	0.992** (0.986 – 0.998)	0.989*** (0.983 – 0.995)	0.997 (0.990 – 1.003)
Assistants to non assistants ratio	0.553*** (0.449 – 0.656)	-0.031 (-0.129 – 0.068)	0.228*** (0.116 – 0.341)	-0.122* (-0.239 – -0.005)	1.738*** (1.567 – 1.927)	0.970 (0.879 – 1.070)	1.257*** (1.123 – 1.406)	0.885* (0.787 – 0.995)
Special education to non-special education ratio	2.078*** (1.890 – 2.266)	-0.028 (-0.231 – 0.175)	1.700*** (1.468 – 1.933)	0.070 (-0.182 – 0.321)	7.989*** (6.619 – 9.642)	0.972 (0.794 – 1.191)	5.476*** (4.339 – 6.911)	1.072 (0.834 – 1.379)
Teacher gender (female to male ratio)	-0.265** (-0.454 – -0.076)	0.030 (-0.149 – 0.210)	-0.089 (-0.296 – 0.117)	-0.156 (-0.373 – 0.060)	0.767** (0.635 – 0.927)	1.031 (0.862 – 1.233)	0.914 (0.744 – 1.124)	0.855 (0.689 – 1.062)
Any asylum seekers	0.007 (-0.048 – 0.063)	-0.003 (-0.052 – 0.046)	-0.022 (-0.072 – 0.027)	-0.005 (-0.054 – 0.044)	1.007 (0.953 – 1.065)	0.997 (0.949 – 1.047)	0.978 (0.930 – 1.028)	0.995 (0.947 – 1.045)
Any New Norwegian	-0.011 (-0.081 – 0.059)	-0.063 (-0.167 – 0.041)	0.000 (-0.102 – 0.103)	-0.077 (-0.181 – 0.026)	0.989 (0.922 – 1.061)	0.939 (0.846 – 1.042)	1.000 (0.903 – 1.109)	0.925 (0.835 – 1.026)
Any mother tongue or bilingual education	0.013 (-0.026 – 0.053)	0.007 (-0.028 – 0.043)	0.010 (-0.030 – 0.049)	-0.019 (-0.058 – 0.020)	1.013 (0.974 – 1.054)	1.007 (0.972 – 1.044)	1.010 (0.971 – 1.050)	0.981 (0.944 – 1.021)
Any tailored education	-0.007 (-0.063 – 0.050)	0.017 (-0.033 – 0.067)	-0.023 (-0.075 – 0.030)	0.020 (-0.032 – 0.072)	0.993 (0.939 – 1.051)	1.017 (0.967 – 1.069)	0.978 (0.928 – 1.030)	1.020 (0.969 – 1.075)

	Model	School structure variables included in addition to all other variables from Mod...	Note						
		Model 3_0	Empty model, all school structure variables included, no interaction with l...						
		Model 3A	School type (Primary vs. Combined and Primary vs. Secondary School)						
		Model 3B	Number of teachers per students						
		Model 3C	School size (in deciles)						
		Model 3D	Average level of teacher education						
		Model 3E	Average teacher age	In models 3A-3L the given school structure variable is interacted with the learning materials variable to examine if school structural factors can explain some of the school-level variability in the effect of learning materials. In model 3M all school structure variables are interacted with the learning materials variable to see both how much of the variability between schools that they account for in total, as well as each variable's contribution when other school level variables have been accounted for.					
		Model 3F	Ratio of assistants to non-assistants						
MODELS		Model 3G	Ratio of special education hours to non-special education hours						
		Model 3H	Ratio of female to male teachers						
		Model 3I	Any asylumseekers						
		Model 3J	Any New Norwegian education						
		Model 3K	Any mother tongue or bilingual education						
		Model 3L	Any tailored education						
		Model 3M	All 12 school structure variables included, including interaction with learn...						
				Model 3_0	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E	Model 3F
	School ID	Standard deviation of intercepts		0.4745	0.5271	0.4995	0.5333	0.5247	0.5318
	School ID	Standard deviation of time quarter slopes		0.3317	0.3324	0.3313	0.3326	0.3323	0.3327
RANDOM EFFECTS	School ID	Standard deviation of learning materials slopes		0.3302	0.33	0.3291	0.332	0.3303	0.3306
	School ID	Correlation between intercept and time quarter slopes		-0.61	-0.56	-0.56	-0.57	-0.56	-0.58
	School ID	Correlation between intercept and learning materials slopes		-0.3	-0.25	-0.27	-0.24	-0.26	-0.25
	School ID	Correlation between time quarter slopes and learning materials slopes		0.04	0.03	0.04	0.03	0.05	0.02
		Baseline mental health service use (intercept)		-3.297*** (-3.345 – -3.249)	-3.350*** (-3.399 – -3.301)	-3.304*** (-3.349 – -3.259)	-3.329*** (-3.375 – -3.284)	-3.325*** (-3.370 – -3.280)	-3.328*** (-3.373 – -3.283)	-3.323*** (-3.3...
		learn_materials1		-0.045*** (-0.071 – -0.020)	-0.011 (-0.045 – 0.023)	-0.049*** (-0.076 – -0.022)	-0.056*** (-0.084 – -0.029)	-0.045*** (-0.072 – -0.019)	-0.052*** (-0.078 – -0.026)	-0.049*** (-0.07...
		subject_guidelines1		-0.079*** (-0.106 – -0.053)	-0.084*** (-0.110 – -0.058)	-0.083*** (-0.109 – -0.057)	-0.079*** (-0.105 – -0.053)	-0.083*** (-0.109 – -0.056)	-0.082*** (-0.108 – -0.055)	-0.082*** (-0.1...
		avg_gender_centered		-0.192*** (-0.262 – -0.121)	-0.225*** (-0.296 – -0.155)	-0.212*** (-0.282 – -0.143)	-0.231*** (-0.302 – -0.161)	-0.225*** (-0.295 – -0.155)	-0.227*** (-0.297 – -0.156)	-0.222*** (-0.2...
		grade_level10		0.296*** (0.260 – 0.331)	0.293*** (0.257 – 0.328)	0.317*** (0.282 – 0.351)	0.296*** (0.261 – 0.331)	0.307*** (0.272 – 0.342)	0.305*** (0.271 – 0.340)	0.314*** (0.279...
		grade_level6		0.052*** (0.034 – 0.071)	0.058*** (0.039 – 0.076)	0.052*** (0.033 – 0.070)	0.051*** (0.032 – 0.069)	0.053*** (0.035 – 0.072)	0.052*** (0.034 – 0.071)	0.051*** (0.033...
		grade_level7		0.079*** (0.051 – 0.106)	0.092*** (0.063 – 0.121)	0.077*** (0.049 – 0.105)	0.074*** (0.045 – 0.102)	0.081*** (0.053 – 0.109)	0.078*** (0.050 – 0.105)	0.076*** (0.048...
FIXED EFFECTS		grade_level8		0.182*** (0.156 – 0.207)	0.194*** (0.167 – 0.221)	0.203*** (0.179 – 0.228)	0.176*** (0.151 – 0.201)	0.197*** (0.172 – 0.222)	0.192*** (0.167 – 0.216)	0.199*** (0.174...
		grade_level9		0.262*** (0.236 – 0.288)	0.269*** (0.242 – 0.295)	0.284*** (0.259 – 0.308)	0.258*** (0.233 – 0.283)	0.276*** (0.251 – 0.301)	0.272*** (0.248 – 0.297)	0.280*** (0.255...
		year_quarter2020Q4		0.346*** (0.324 – 0.368)	0.345*** (0.323 – 0.367)	0.344*** (0.322 – 0.366)	0.347*** (0.325 – 0.369)	0.345*** (0.323 – 0.367)	0.346*** (0.324 – 0.368)	0.345*** (0.323...
		year_quarter2021Q1		0.502*** (0.480 – 0.525)	0.501*** (0.479 – 0.524)	0.498*** (0.476 – 0.521)	0.504*** (0.482 – 0.527)	0.501*** (0.478 – 0.523)	0.503*** (0.481 – 0.525)	0.500*** (0.478...
		year_quarter2021Q2		0.473*** (0.449 – 0.497)	0.472*** (0.448 – 0.496)	0.467*** (0.443 – 0.491)	0.476*** (0.452 – 0.500)	0.471*** (0.447 – 0.495)	0.474*** (0.450 – 0.498)	0.470*** (0.446...
		year_quarter2021Q3		0.496*** (0.468 – 0.523)	0.496*** (0.468 – 0.524)	0.489*** (0.461 – 0.517)	0.500*** (0.472 – 0.528)	0.494*** (0.467 – 0.522)	0.498*** (0.471 – 0.526)	0.493*** (0.465...
		year_quarter2021Q4		0.914*** (0.885 – 0.943)	0.913*** (0.884 – 0.942)	0.905*** (0.876 – 0.934)	0.918*** (0.889 – 0.947)	0.911*** (0.882 – 0.941)	0.916*** (0.887 – 0.945)	0.910*** (0.88...
		year_quarter2022Q1		1.415*** (1.384 – 1.446)	1.414*** (1.383 – 1.445)	1.404*** (1.373 – 1.436)	1.420*** (1.389 – 1.452)	1.412*** (1.381 – 1.443)	1.418*** (1.387 – 1.449)	1.410*** (1.379...
		year_quarter2022Q2		0.338*** (0.303 – 0.374)	0.337*** (0.301 – 0.373)	0.326*** (0.290 – 0.362)	0.345*** (0.309 – 0.381)	0.335*** (0.299 – 0.371)	0.342*** (0.306 – 0.378)	0.333*** (0.297...

Sheet tabs: S5 Main Results Gender | S6 Odds Ratios Fixed | S7 Variance Decomposition | S8 School Structure Model Fit | S9 School Structure Interaction | **S10 School Structure Base Vars** | S11 Model Fitting

	Model	School structure variables included in addition to all other variables from Mod	K	L	M	N	O	P	Q
	Model 3_0	Empty model, all school structure variables included, no interaction with l							
	Model 3A	School type (Primary vs. Combined and Primary vs. Secondary School)							
	Model 3B	Number of teachers per students							
	Model 3C	School size (in deciles)							
	Model 3D	Average level of teacher education							
MODELS	Model 3E	Average teacher age							
	Model 3F	Ratio of assistants to non-assistants							
	Model 3G	Ratio of special education hours to non-special education hours							
	Model 3H	Ratio of female to male teachers							
	Model 3I	Any asylumseekers							
	Model 3J	Any New Norwegian education							
	Model 3K	Any mother tongue or bilingual education							
	Model 3L	Any tailored education							
	Model 3M	All 12 school structure variables included, including interaction with learn							
			Model 3G	Model 3H	Model 3I	Model 3J	Model 3K	Model 3L	Model 3M
	School ID	Standard deviation of intercepts	0.4625	0.5257	0.5259	0.5259	0.5258	0.5258	
	School ID	Standard deviation of time quarter slopes	0.3316	0.3324	0.3323	0.3324	0.3323	0.3323	
RANDOM EFFECTS	School ID	Standard deviation of learning materials slopes	0.3288	0.3311	0.331	0.3308	0.3311	0.331	
	School ID	Correlation between intercept and time quarter slopes	-0.55	-0.56	-0.56	-0.56	-0.56	-0.56	
	School ID	Correlation between intercept and learning materials slopes	-0.28	-0.26	-0.26	-0.26	-0.26	-0.26	
	School ID	Correlation between time quarter slopes and learning materials slopes	0.04	0.04	0.04	0.04	0.04	0.04	
		Baseline mental health service use (intercept)	-3.313*** (-3.357 – -3.269)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.316*** (-3.3
		learn_materials1	-0.047*** (-0.073 – -0.021)	-0.048*** (-0.074 – -0.022)	-0.049*** (-0.075 – -0.023)	-0.048*** (-0.074 – -0.022)	-0.049*** (-0.075 – -0.023)	-0.049*** (-0.075 – -0.023)	-0.003 (-0.038 –
		subject_guidelines1	-0.079*** (-0.105 – -0.052)	-0.080*** (-0.107 – -0.054)	-0.081*** (-0.107 – -0.055)	-0.081*** (-0.107 – -0.054)	-0.081*** (-0.107 – -0.055)	-0.081*** (-0.107 – -0.055)	-0.084*** (-0.1
		avg_gender_centered	-0.190*** (-0.260 – -0.120)	-0.225*** (-0.295 – -0.155)	-0.226*** (-0.296 – -0.156)	-0.227*** (-0.297 – -0.156)	-0.227*** (-0.297 – -0.156)	-0.226*** (-0.297 – -0.156)	-0.190*** (-0.2
		grade_level10	0.293*** (0.258 – 0.328)	0.298*** (0.263 – 0.333)	0.304*** (0.269 – 0.339)	0.304*** (0.269 – 0.339)	0.304*** (0.270 – 0.339)	0.304*** (0.269 – 0.339)	0.293*** (0.25
		grade_level6	0.052*** (0.034 – 0.071)	0.052*** (0.034 – 0.071)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.058*** (0.03
		grade_level7	0.079*** (0.051 – 0.106)	0.078*** (0.050 – 0.106)	0.077*** (0.049 – 0.105)	0.077*** (0.049 – 0.104)	0.077*** (0.049 – 0.105)	0.077*** (0.049 – 0.105)	0.092*** (0.06
FIXED EFFECTS		grade_level8	0.179*** (0.154 – 0.203)	0.184*** (0.159 – 0.209)	0.189*** (0.165 – 0.214)	0.189*** (0.164 – 0.213)	0.189*** (0.165 – 0.214)	0.189*** (0.165 – 0.214)	0.195*** (0.16
		grade_level9	0.259*** (0.235 – 0.283)	0.264*** (0.239 – 0.289)	0.270*** (0.245 – 0.294)	0.270*** (0.245 – 0.294)	0.270*** (0.245 – 0.295)	0.270*** (0.245 – 0.294)	0.270*** (0.24
		year_quarter2020Q4	0.344*** (0.322 – 0.366)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.346*** (0.32	
		year_quarter2021Q1	0.498*** (0.476 – 0.520)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.48	
		year_quarter2021Q2	0.467*** (0.443 – 0.491)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.473*** (0.44	
		year_quarter2021Q3	0.488*** (0.460 – 0.515)	0.496*** (0.468 – 0.523)	0.495*** (0.468 – 0.523)	0.495*** (0.468 – 0.523)	0.496*** (0.468 – 0.523)	0.497*** (0.46	
		year_quarter2021Q4	0.903*** (0.874 – 0.932)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.915*** (0.88	
		year_quarter2022Q1	1.403*** (1.372 – 1.434)	1.414*** (1.383 – 1.445)	1.414*** (1.382 – 1.445)	1.414*** (1.382 – 1.445)	1.414*** (1.383 – 1.445)	1.416*** (1.38	
		year_quarter2022Q2	0.324*** (0.289 – 0.360)	0.337*** (0.302 – 0.373)	0.337*** (0.301 – 0.372)	0.337*** (0.301 – 0.372)	0.337*** (0.301 – 0.373)	0.339*** (0.30	

Sheet tabs: S5 Main Results Gender | S6 Odds Ratios Fixed | S7 Variance Decomposition | S8 School Structure Model Fit | S9 School Structure Interaction | **S10 School Structure Base Vars** | S11 Model Fitting

	Model	ool structure variables included in addition to all other variables from Mod		Model 3I	Model 3J	Model 3K	Model 3L	Model 3M
MODELS	Model 3_0	Empty model, all school structure variables included, no interaction with l						
	Model 3A	School type (Primary vs. Combined and Primary vs. Secondary School)						
	Model 3B	Number of teachers per students						
	Model 3C	School size (in deciles)						
	Model 3D	Average level of teacher education						
	Model 3E	Average teacher age						
	Model 3F	Ratio of assistants to non-assistants						
	Model 3G	Ratio of special education hours to non-special education hours						
	Model 3H	Ratio of female to male teachers						
	Model 3I	Any asylum seekers						
	Model 3J	Any New Norwegian education						
	Model 3K	Any mother tongue or bilingual education						
	Model 3L	Any tailored education						
	Model 3M	All 12 school structure variables included, including interaction with learn						
				Model 3I	Model 3J	Model 3K	Model 3L	Model 3M
RANDOM EFFECTS	School ID	Standard deviation of intercepts	0.5257	0.5259	0.5259	0.5258	0.5258	0.4687
	School ID	Standard deviation of time quarter slopes	0.3324	0.3324	0.3324	0.3323	0.3323	0.3316
	School ID	Standard deviation of learning materials slopes	0.3311	0.331	0.3308	0.3311	0.331	0.326
	School ID	Correlation between intercept and time quarter slopes	-0.56	-0.56	-0.56	-0.56	-0.56	-0.6
	School ID	Correlation between intercept and learning materials slopes	-0.26	-0.26	-0.26	-0.26	-0.26	-0.26
	School ID	Correlation between time quarter slopes and learning materials slopes	0.04	0.04	0.04	0.04	0.04	-0.01
FIXED EFFECTS		Baseline mental health service use (intercept)	.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.324*** (-3.369 – -3.279)	-3.316*** (-3.365 – -3.267)
		learn_materials1	.074 – -0.022)	-0.049*** (-0.075 – -0.023)	-0.048*** (-0.074 – -0.022)	-0.049*** (-0.075 – -0.023)	-0.049*** (-0.075 – -0.023)	-0.003 (-0.038 – 0.033)
		subject_guidelines1	.107 – -0.054)	-0.081*** (-0.107 – -0.055)	-0.081*** (-0.107 – -0.054)	-0.081*** (-0.107 – -0.055)	-0.081*** (-0.107 – -0.055)	-0.084*** (-0.111 – -0.058)
		avg_gender_centered	.295 – -0.155)	-0.226*** (-0.296 – -0.156)	-0.227*** (-0.297 – -0.156)	-0.227*** (-0.297 – -0.156)	-0.226*** (-0.297 – -0.156)	-0.190*** (-0.260 – -0.119)
		grade_level10	63 – 0.333)	0.304*** (0.269 – 0.339)	0.304*** (0.269 – 0.339)	0.304*** (0.270 – 0.339)	0.304*** (0.269 – 0.339)	0.293*** (0.257 – 0.328)
		grade_level6	34 – 0.071)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.052*** (0.033 – 0.070)	0.058*** (0.039 – 0.077)
		grade_level7	50 – 0.106)	0.077*** (0.049 – 0.105)	0.077*** (0.049 – 0.104)	0.077*** (0.049 – 0.105)	0.077*** (0.049 – 0.105)	0.092*** (0.063 – 0.121)
		grade_level8	59 – 0.209)	0.189*** (0.165 – 0.214)	0.189*** (0.164 – 0.213)	0.189*** (0.165 – 0.214)	0.189*** (0.165 – 0.214)	0.195*** (0.168 – 0.222)
		grade_level9	39 – 0.289)	0.270*** (0.245 – 0.294)	0.270*** (0.245 – 0.294)	0.270*** (0.245 – 0.295)	0.270*** (0.245 – 0.294)	0.270*** (0.244 – 0.296)
		year_quarter2020Q4	23 – 0.367)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.345*** (0.323 – 0.367)	0.346*** (0.324 – 0.368)
		year_quarter2021Q1	79 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.479 – 0.524)	0.502*** (0.480 – 0.524)
		year_quarter2021Q2	48 – 0.496)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.472*** (0.448 – 0.496)	0.473*** (0.449 – 0.497)
		year_quarter2021Q3	68 – 0.523)	0.495*** (0.468 – 0.523)	0.495*** (0.468 – 0.523)	0.496*** (0.468 – 0.523)	0.495*** (0.468 – 0.523)	0.497*** (0.469 – 0.524)
		year_quarter2021Q4	84 – 0.942)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.913*** (0.884 – 0.942)	0.915*** (0.886 – 0.944)
		year_quarter2022Q1	83 – 1.445)	1.414*** (1.382 – 1.445)	1.414*** (1.382 – 1.445)	1.414*** (1.383 – 1.445)	1.414*** (1.382 – 1.445)	1.416*** (1.385 – 1.447)
		year_quarter2022Q2	02 – 0.373)	0.337*** (0.301 – 0.372)	0.337*** (0.301 – 0.372)	0.337*** (0.301 – 0.373)	0.337*** (0.301 – 0.373)	0.339*** (0.304 – 0.375)

Sheet tabs: S5 Main Results Gender | S6 Odds Ratios Fixed | S7 Variance Decomposition | S8 School Structure Model Fit | S9 School Structure Interaction | **S10 School Structure Base Vars** | S11 Model Fitting

	Model Fitting Approach Expanded		
Model	**Fixed effects**	**Random effects**	
Effects of Learning Materials			
1. Base	Grade, avg. gender, year quarter	Time quarter | school	
2. Average effect of learning materials	Grade, avg. gender, year quarter, subject guidelines, learning materials	Time quarter | school	
3. **Learning materials-by-school interaction**	Grade, avg. gender, year quarter, subject guidelines, learning materials	Time quarter, learning materials | school	
3 V2. Learning materials-by-school interaction, adjusted for Covid-19	Grade, avg. gender, year quarter, subject guidelines, learning materials	Time quarter, learning materials, covid-19 | school	
3 V3. Learning materials-by-school interaction, adjusted for municipality	Grade, avg. gender, year quarter, subject guidelines, learning materials	Time quarter, learning materials| school	
		Time quarter, learning materials| municipality	
Effects of Average Time with Learning Materials (TWLM)			
4. Base	Grade, avg. gender, year quarter	Time quarter | school	
5. Average effect of TWLM (linear)	Grade, avg. gender, year quarter, TWLM linear	Time quarter | school	
6. Average effect of TWLM (linear and squared)	Grade, avg. gender, year quarter, TWLM linear, TWLM squared	Time quarter | school	
7. **TWLM-by-school interaction**	Grade, avg. gender, year quarter, TWLM linear, TWLM squared	Time quarter, TWLM linear, TWLM squared | school	
7 V2. TWLM-by-school interaction, adjusted for Covid-19	Grade, avg. gender, year quarter, TWLM linear, TWLM squared	Time quarter, TWLM linear, TWLM squared, Covid-19 | school	
7 V3. TWLM-by-school interaction, adjusted for municipality	Grade, avg. gender, year quarter, TWLM linear, TWLM squared	Time quarter, TWLM linear, TWLM squared | school	
		Time quarter, TWLM linear, TWLM squared | municipality	
Gender Differences in Effects of Learning Materials			
8. Base	Gender*grade, gender*year quarter	Time quarter | school	
9. Interaction between learning materials and gender	Gender*grade, gender*year quarter, gender*subject guidelines, gender*learning materials	Time quarter | school	
10. **Interaction between learning materials and gender by school**	Gender*grade, gender*year quarter, gender*subject guidelines, gender*learning materials	time quarter, gender*learning materials | school	

Note. Year quarter is a factor indicating each quarter of each year in the observed period. For Models 1-8, the observed period is 2020Q3-2022Q2, i.e., all quarters with stepwise implementation. For models 9-14, the observed period is 2020Q3-2023Q4, i.e., all quarters with stepwise or full implementation. Time quarter is a time variable centered on 2020Q2 (quarter before reform) with the value of +.25 for every quarter after intervention, and -.25 for every quarter before the intervention.

Random Effects

		MODEL 1	MODEL 2	MODEL 3	MODEL 4 - TWLM Linear Fixed	MODEL 5 - TWLM Linear + Squared Fixed
School ID	Standard deviation of intercepts	0.31	0.31	0.56	0.56	0.56
School ID	Correlation between intercept and time quarter slopes	-0.41	-0.41	-0.31	-0.41	-0.41
School ID	Correlation between intercept and Covid-19 slopes	-0.28	-0.28	-0.26	-0.28	-0.28
School ID	Correlation between intercept and learning materials slopes	NA	NA	-0.17	NA	NA
School ID	Correlation between intercept and TWLM linear slopes	NA	NA	NA	NA	NA
School ID	Correlation between intercept and TWLM squared slopes	NA	NA	NA	NA	NA
School ID	Correlation between time quarter slopes and Covid-19 slopes	0.51	0.51	0.54	0.51	0.51
School ID	Correlation between time quarter slopes and learning materials slopes	NA	NA	-0.32	NA	NA
School ID	Correlation between time quarter slopes and TWLM linear slopes	NA	NA	NA	NA	NA
School ID	Correlation between time quarter slopes and TWLM squared slopes	NA	NA	NA	NA	NA
School ID	Correlation between Covid-19 slopes and learning materials slopes	NA	NA	-0.07	NA	NA
School ID	Correlation between Covid-19 slopes and TWLM linear slopes	NA	NA	NA	NA	NA
School ID	Correlation between Covid-19 slopes and TWLM squared slopes	NA	NA	NA	NA	NA
School ID	Correlation between TWLM linear slopes and TWLM squared slopes	NA	NA	NA	NA	NA
School ID	Standard deviation of time quarter slopes	0.02	0.02	0.14	0.15	0.15
School ID	Standard deviation of Covid-19 slopes	0.07	0.07	0.27	0.27	0.27
RANDOM EFFECTS · School ID	Standard deviation of learning materials slopes	NA	NA	0.35	NA	NA
School ID	Standard deviation of TWLM linear slopes	NA	NA	NA	NA	NA
School ID	Standard deviation of TWLM squared slopes	NA	NA	NA	NA	NA

Fixed Effects

	MODEL 1			MODEL 2			MODEL 3			MODEL 4 - TWLM Linear Fixed			MODEL 5 - TWLM Linear + Squared Fixed		
	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value
Baseline mental health service use (intercept)	-3.072 (0.013)***	0.05 (0.05-0.05)	-234.998	-3.074 (0.013)***	0.05 (0.05-0.05)	-235	-3.074 (0.013)***	0.05 (0.05-0.05)	-234.528	-3.071 (0.013)***	0.05 (0.05-0.05)	-234.743	-3.074 (0.013)***	0.05 (0.05-0.05)	-234.3
learn materials [1]	NA	NA	NA	0.014 (0.005)**	1.01 (1.00-1.02)	2.701	-0.007 (0.010)	0.99 (0.97-1.01)	-0.724	NA	NA	NA	NA	NA	NA
avg time with learn materials	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.003 (0.003)	1.00 (1.00-1.01)	1.132	0.034 (0.007)***	1.03 (1.02-1.05)	4.98
avg time with learn materials squared	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.012 (0.002)***	0.99 (0.98-0.99)	-4.92
subject guidelines [1]	NA	NA	NA	0.003 (0.010)	1.00 (0.98-1.02)	0.35	-0.001 (0.010)	1.00 (0.98-1.02)	-0.07	0.006 (0.010)	1.01 (0.99-1.03)	0.62	0.005 (0.010)	1.01 (0.99-1.02)	0.48
avg gender centered	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.557	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.6	-0.275 (0.015)***	0.76 (0.74-0.78)	-18.06	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.558	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.52
grade level [10]	0.386 (0.006)***	1.47 (1.45-1.49)	64.606	0.391 (0.006)***	1.48 (1.46-1.50)	62.5	0.390 (0.006)***	1.48 (1.46-1.49)	62.336	0.387 (0.006)***	1.47 (1.46-1.49)	63.401	0.393 (0.006)***	1.48 (1.46-1.50)	63.1
grade level [6]	0.040 (0.004)***	1.04 (1.03-1.05)	9.148	0.041 (0.004)***	1.04 (1.03-1.05)	9.43	0.041 (0.004)***	1.04 (1.03-1.05)	9.432	0.039 (0.004)***	1.04 (1.03-1.05)	8.85	0.039 (0.004)***	1.04 (1.03-1.05)	8.81
grade level [7]	0.066 (0.004)***	1.07 (1.06-1.08)	15.23	0.070 (0.005)***	1.07 (1.06-1.08)	15.24	0.069 (0.005)***	1.07 (1.06-1.08)	14.644	0.065 (0.004)***	1.07 (1.06-1.08)	15.08	0.072 (0.005)***	1.07 (1.06-1.09)	15.85
grade level [8]	0.151 (0.006)***	1.16 (1.15-1.18)	25.077	0.151 (0.006)***	1.16 (1.15-1.18)	25.07	0.150 (0.006)***	1.16 (1.15-1.18)	24.558	0.151 (0.006)***	1.16 (1.15-1.18)	24.952	0.153 (0.006)***	1.17 (1.15-1.18)	25.20
grade level [9]	0.277 (0.006)***	1.32 (1.30-1.33)	46.342	0.278 (0.006)***	1.32 (1.31-1.34)	46.38	0.278 (0.006)***	1.32 (1.31-1.34)	46.104	0.276 (0.006)***	1.32 (1.30-1.33)	45.931	0.276 (0.006)***	1.32 (1.30-1.33)	45.87
year quarter [2015Q2]	0.001 (0.010)	1.00 (0.98-1.02)	0.109	0.001 (0.010)	1.00 (0.98-1.02)	0.108	0.001 (0.010)	1.00 (0.98-1.02)	0.111	0.001 (0.010)	1.00 (0.98-1.02)	0.109	0.001 (0.010)	1.00 (0.98-1.02)	0.11
year quarter [2015Q3]	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.244	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.3	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.245	-0.256 (0.010)***	0.77 (0.76-0.79)	-23.241	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.20
year quarter [2015Q4]	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.116	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.12	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.115	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.113	-0.054 (0.011)***	0.95 (0.93-0.97)	-5.10
year quarter [2016Q1]	0.042 (0.010)***	1.04 (1.02-1.06)	4.076	0.042 (0.010)***	1.04 (1.02-1.06)	4.076	0.042 (0.010)***	1.04 (1.02-1.06)	4.077	0.042 (0.010)***	1.04 (1.02-1.06)	4.074	0.042 (0.010)***	1.04 (1.02-1.06)	4.06
year quarter [2016Q2]	0.071 (0.010)***	1.07 (1.05-1.09)	6.935	0.071 (0.010)***	1.07 (1.05-1.09)	6.937	0.071 (0.010)***	1.07 (1.05-1.09)	6.935	0.071 (0.010)***	1.07 (1.05-1.09)	6.93	0.071 (0.010)***	1.07 (1.05-1.09)	6.91
year quarter [2016Q3]	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.894	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.9	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.886	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.884	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.85
year quarter [2016Q4]	0.030 (0.010)**	1.03 (1.01-1.05)	2.902	0.030 (0.010)**	1.03 (1.01-1.05)	2.903	0.030 (0.010)**	1.03 (1.01-1.05)	2.908	0.030 (0.010)**	1.03 (1.01-1.05)	2.901	0.030 (0.010)**	1.03 (1.01-1.05)	2.89
year quarter [2017Q1]	0.270 (0.010)***	1.31 (1.28-1.34)	27.468	0.270 (0.010)***	1.31 (1.28-1.34)	27.49	0.270 (0.010)***	1.31 (1.28-1.34)	27.471	0.270 (0.010)***	1.31 (1.28-1.34)	27.456	0.270 (0.010)***	1.31 (1.28-1.34)	27.4
year quarter [2017Q2]	0.141 (0.010)***	1.15 (1.13-1.17)	13.984	0.141 (0.010)***	1.15 (1.13-1.17)	14	0.141 (0.010)***	1.15 (1.13-1.17)	13.99	0.141 (0.010)***	1.15 (1.13-1.17)	13.979	0.141 (0.010)***	1.15 (1.13-1.17)	13.95
year quarter [2017Q3]	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.327	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.33	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.322	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.325	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.30
year quarter [2017Q4]	0.108 (0.010)***	1.11 (1.09-1.14)	10.655	0.108 (0.010)***	1.11 (1.09-1.14)	10.66	0.108 (0.010)***	1.11 (1.09-1.14)	10.66	0.108 (0.010)***	1.11 (1.09-1.14)	10.65	0.108 (0.010)***	1.11 (1.09-1.14)	10.63
year quarter [2018Q1]	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.316	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.32	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.311	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.312	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.29
year quarter [2018Q2]	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.681	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.7	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.675	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.67	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.65
year quarter [2018Q3]	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.789	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.8	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.783	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.782	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.72
year quarter [2018Q4]	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.927	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.9	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.923	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.917	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.89
year quarter [2019Q1]	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.72	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.7	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.719	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.716	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.70

	FIXED EFFECTS		MODEL 1			MODEL 2			MODEL 3			MODEL 4 - TWLM Linear Fixed			MODEL 5 - TWLM Linear + Squared Fixed		
Baseline mental health service use (intercept)			-3.072 (0.013)***	0.05 (0.05–0.05)	-234.998	-3.074 (0.013)***	0.05 (0.05–0.05)	-235	-3.074 (0.013)***	0.05 (0.05–0.05)	-234.528	-3.071 (0.013)***	0.05 (0.05–0.05)	-234.743	-3.074 (0.013)***	0.05 (0.05–0.05)	-234.3
learn materials [1]			NA	NA	NA	0.014 (0.005)**	1.01 (1.00–1.02)	2.701	-0.007 (0.010)	0.99 (0.97–1.01)	-0.724	NA	NA	NA	NA	NA	NA
avg time with learn materials			NA	NA	NA	NA	NA	NA	NA	NA	NA	0.003 (0.003)	1.00 (1.00–1.01)	1.132	0.034 (0.007)***	1.03 (1.02–1.05)	4.98
avg time with learn materials squared			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.012 (0.002)***	0.99 (0.98–0.99)	-4.92
subject guidelines [1]			NA	NA	NA	0.003 (0.010)	1.00 (0.98–1.02)	0.35	-0.001 (0.010)	1.00 (0.98–1.02)	-0.07	0.006 (0.010)	1.01 (0.99–1.03)	0.62	0.005 (0.010)	1.01 (0.99–1.02)	0.48
avg gender centered			-0.261 (0.015)***	0.77 (0.75–0.79)	-17.557	-0.261 (0.015)***	0.77 (0.75–0.79)	-17.6	-0.275 (0.015)***	0.76 (0.74–0.78)	-18.06	-0.261 (0.015)***	0.77 (0.75–0.79)	-17.558	-0.261 (0.015)***	0.77 (0.75–0.79)	-17.52
grade level [10]			0.386 (0.006)***	1.47 (1.45–1.49)	64.606	0.391 (0.006)***	1.48 (1.46–1.50)	62.5	0.390 (0.006)***	1.48 (1.46–1.49)	62.336	0.387 (0.006)***	1.47 (1.46–1.49)	63.401	0.393 (0.006)***	1.48 (1.46–1.50)	63.1
grade level [6]			0.040 (0.004)***	1.04 (1.03–1.05)	9.148	0.041 (0.004)***	1.04 (1.03–1.05)	9.43	0.041 (0.004)***	1.04 (1.03–1.05)	9.432	0.039 (0.004)***	1.04 (1.03–1.05)	8.85	0.039 (0.004)***	1.04 (1.03–1.05)	8.81
grade level [7]			0.066 (0.004)***	1.07 (1.06–1.09)	15.23	0.070 (0.005)***	1.07 (1.06–1.08)	15.24	0.069 (0.005)***	1.07 (1.06–1.08)	14.644	0.065 (0.004)***	1.07 (1.06–1.08)	15.08	0.072 (0.005)***	1.07 (1.06–1.09)	15.85
grade level [8]			0.151 (0.006)***	1.16 (1.15–1.18)	25.077	0.151 (0.006)***	1.16 (1.15–1.18)	25.07	0.150 (0.006)***	1.16 (1.15–1.18)	24.558	0.151 (0.006)***	1.16 (1.15–1.18)	24.952	0.153 (0.006)***	1.17 (1.15–1.18)	25.20
grade level [9]			0.277 (0.006)***	1.32 (1.30–1.33)	46.342	0.278 (0.006)***	1.32 (1.31–1.34)	46.38	0.278 (0.006)***	1.32 (1.31–1.34)	46.104	0.276 (0.006)***	1.32 (1.30–1.33)	45.931	0.276 (0.006)***	1.32 (1.30–1.33)	45.87
year quarter [2015Q2]			0.001 (0.010)	1.00 (0.98–1.02)	0.109	0.001 (0.010)	1.00 (0.98–1.02)	0.108	0.001 (0.010)	1.00 (0.98–1.02)	0.109	0.001 (0.010)	1.00 (0.98–1.02)	0.109	0.001 (0.010)	1.00 (0.98–1.02)	0.11
year quarter [2015Q3]			-0.256 (0.011)***	0.77 (0.76–0.79)	-23.244	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.3	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.245	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.241	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.24
year quarter [2015Q4]			-0.054 (0.010)***	0.95 (0.93–0.97)	-5.116	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.12	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.115	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.113	-0.054 (0.011)***	0.95 (0.93–0.97)	-5.10
year quarter [2016Q1]			0.042 (0.010)***	1.04 (1.02–1.06)	4.076	0.042 (0.010)***	1.04 (1.02–1.06)	4.076	0.042 (0.010)***	1.04 (1.02–1.06)	4.077	0.042 (0.010)***	1.04 (1.02–1.06)	4.074	0.042 (0.010)***	1.04 (1.02–1.06)	4.06
year quarter [2016Q2]			0.071 (0.010)***	1.07 (1.05–1.09)	6.935	0.071 (0.010)***	1.07 (1.05–1.09)	6.937	0.071 (0.010)***	1.07 (1.05–1.09)	6.935	0.071 (0.010)***	1.07 (1.05–1.09)	6.93	0.071 (0.010)***	1.07 (1.05–1.09)	6.91
year quarter [2016Q3]			-0.194 (0.011)***	0.82 (0.81–0.84)	-17.894	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.9	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.886	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.884	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.85
year quarter [2016Q4]			0.030 (0.010)**	1.03 (1.01–1.05)	2.902	0.030 (0.010)**	1.03 (1.01–1.05)	2.903	0.030 (0.010)**	1.03 (1.01–1.05)	2.908	0.030 (0.010)**	1.03 (1.01–1.05)	2.901	0.030 (0.010)**	1.03 (1.01–1.05)	2.89
year quarter [2017Q1]			0.270 (0.010)***	1.31 (1.28–1.34)	27.468	0.270 (0.010)***	1.31 (1.28–1.34)	27.49	0.270 (0.010)***	1.31 (1.28–1.34)	27.471	0.270 (0.010)***	1.31 (1.28–1.34)	27.456	0.270 (0.010)***	1.31 (1.28–1.34)	27.4
year quarter [2017Q2]			0.141 (0.010)***	1.15 (1.13–1.17)	13.984	0.141 (0.010)***	1.15 (1.13–1.17)	14	0.141 (0.010)***	1.15 (1.13–1.17)	13.99	0.141 (0.010)***	1.15 (1.13–1.17)	13.979	0.141 (0.010)***	1.15 (1.13–1.17)	13.95
year quarter [2017Q3]			-0.088 (0.011)***	0.92 (0.90–0.94)	-8.327	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.33	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.322	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.325	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.30
year quarter [2017Q4]			0.108 (0.010)***	1.11 (1.09–1.14)	10.655	0.108 (0.010)***	1.11 (1.09–1.14)	10.66	0.108 (0.010)***	1.11 (1.09–1.14)	10.66	0.108 (0.010)***	1.11 (1.09–1.14)	10.65	0.108 (0.010)***	1.11 (1.09–1.14)	10.63
year quarter [2018Q1]			-0.088 (0.011)***	0.92 (0.90–0.94)	-8.316	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.32	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.311	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.312	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.29
year quarter [2018Q2]			-0.146 (0.011)***	0.86 (0.85–0.88)	-13.681	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.7	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.675	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.677	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.65
year quarter [2018Q3]			-0.485 (0.012)***	0.62 (0.60–0.63)	-41.789	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.8	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.783	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.782	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.72
year quarter [2018Q4]			-0.216 (0.011)***	0.81 (0.79–0.82)	-19.927	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.9	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.923	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.917	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.89
year quarter [2019Q1]			-0.113 (0.011)***	0.89 (0.87–0.91)	-10.72	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.7	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.719	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.716	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.70
year quarter [2019Q2]			-0.153 (0.011)***	0.86 (0.84–0.88)	-14.345	-0.153 (0.011)***	0.86 (0.84–0.88)	-14.4	-0.153 (0.011)***	0.86 (0.84–0.88)	-14.341	-0.153 (0.011)***	0.86 (0.84–0.88)	-14.34	-0.153 (0.011)***	0.86 (0.84–0.88)	-14.31
year quarter [2019Q3]			-0.412 (0.011)***	0.66 (0.65–0.68)	-36.355	-0.412 (0.011)***	0.66 (0.65–0.68)	-36.4	-0.412 (0.011)***	0.66 (0.65–0.68)	-36.35	-0.412 (0.011)***	0.66 (0.65–0.68)	-36.344	-0.412 (0.011)***	0.66 (0.65–0.68)	-36.28
year quarter [2019Q4]			-0.182 (0.011)***	0.83 (0.82–0.85)	-16.999	-0.182 (0.011)***	0.83 (0.82–0.85)	-17	-0.182 (0.011)***	0.83 (0.82–0.85)	-16.991	-0.182 (0.011)***	0.83 (0.82–0.85)	-16.991	-0.182 (0.011)***	0.83 (0.82–0.85)	-16.96
year quarter [2020Q1]			-0.106 (0.011)***	0.90 (0.88–0.92)	-10.052	-0.106 (0.011)***	0.90 (0.88–0.92)	-10.1	-0.106 (0.011)***	0.90 (0.88–0.92)	-10.044	-0.106 (0.011)***	0.90 (0.88–0.92)	-10.047	-0.106 (0.011)***	0.90 (0.88–0.92)	-10.03
year quarter [2020Q2]			-0.255 (0.012)***	0.77 (0.76–0.79)	-20.696	-0.256 (0.012)***	0.77 (0.76–0.79)	-20.7	-0.256 (0.012)***	0.77 (0.76–0.79)	-20.705	-0.256 (0.012)***	0.77 (0.76–0.79)	-20.69	-0.256 (0.012)***	0.77 (0.76–0.79)	-20.65
year quarter [2020Q3]			-0.337 (0.013)***	0.71 (0.70–0.73)	-26.534	-0.344 (0.015)***	0.71 (0.69–0.73)	-22.9	-0.345 (0.015)***	0.71 (0.69–0.73)	-22.78	-0.342 (0.015)***	0.71 (0.69–0.73)	-22.738	-0.343 (0.015)***	0.71 (0.69–0.73)	-22.74
year quarter [2020Q4]			0.000 (0.012)	1.00 (0.98–1.02)	-0.022	-0.008 (0.015)	0.99 (0.96–1.02)	-0.52	-0.007 (0.015)	0.99 (0.96–1.02)	-0.456	-0.006 (0.015)	0.99 (0.97–1.02)	-0.391	-0.009 (0.015)	0.99 (0.96–1.02)	-0.58
year quarter [2021Q1]			0.154 (0.012)***	1.17 (1.14–1.19)	12.55	0.147 (0.015)***	1.16 (1.12–1.19)	9.997	0.149 (0.015)***	1.16 (1.13–1.19)	10.047	0.148 (0.015)***	1.16 (1.13–1.19)	10.095	0.144 (0.015)***	1.15 (1.12–1.19)	9.75
year quarter [2021Q2]			0.125 (0.013)***	1.13 (1.10–1.16)	9.839	0.117 (0.015)***	1.12 (1.09–1.16)	7.816	0.121 (0.015)***	1.13 (1.10–1.16)	7.959	0.119 (0.015)***	1.13 (1.09–1.16)	7.899	0.114 (0.015)***	1.12 (1.09–1.15)	7.51
year quarter [2021Q3]			0.134 (0.013)***	1.14 (1.11–1.17)	10.294	0.121 (0.017)***	1.13 (1.09–1.17)	7.334	0.128 (0.017)***	1.14 (1.10–1.18)	7.654	0.126 (0.016)***	1.13 (1.10–1.17)	7.688	0.118 (0.017)***	1.13 (1.09–1.16)	7.14
year quarter [2021Q4]			0.609 (0.010)***	1.84 (1.80–1.87)	58.981	0.597 (0.014)***	1.82 (1.77–1.87)	41.68	0.604 (0.014)***	1.83 (1.78–1.88)	41.771	0.601 (0.014)***	1.82 (1.77–1.87)	42.279	0.592 (0.014)***	1.81 (1.76–1.86)	41.05
year quarter [2022Q1]			1.119 (0.010)***	3.06 (3.00–3.12)	109.05	1.106 (0.014)***	3.02 (2.94–3.11)	77.57	1.118 (0.014)***	3.06 (2.98–3.14)	77.48	1.111 (0.014)***	3.04 (2.96–3.12)	78.169	1.100 (0.014)***	3.00 (2.92–3.09)	76.27
year quarter [2022Q2]			0.082 (0.012)***	1.09 (1.06–1.11)	6.953	0.070 (0.015)***	1.07 (1.04–1.10)	4.512	0.082 (0.016)***	1.09 (1.05–1.12)	5.237	0.074 (0.015)***	1.08 (1.05–1.11)	4.761	0.063 (0.016)***	1.07 (1.03–1.10)	4.04
year quarter [2022Q3]			-0.230 (0.013)***	0.79 (0.77–0.82)	-17.918	-0.248 (0.017)***	0.78 (0.75–0.81)	-15	-0.231 (0.017)***	0.79 (0.77–0.82)	-13.767	-0.240 (0.016)***	0.79 (0.76–0.81)	-14.695	-0.252 (0.017)***	0.78 (0.75–0.80)	-15.21
year quarter [2022Q4]			0.002 (0.013)	1.00 (0.98–1.03)	0.15	-0.016 (0.017)	0.98 (0.95–1.02)	-0.96	0.006 (0.017)	1.01 (0.97–1.04)	0.335	-0.009 (0.016)	0.99 (0.96–1.02)	-0.52	-0.020 (0.017)	0.98 (0.95–1.01)	-1.2
year quarter [2023Q1]			0.122 (0.013)***	1.13 (1.10–1.16)	9.247	0.104 (0.017)***	1.11 (1.07–1.15)	6.183	0.130 (0.017)***	1.14 (1.10–1.18)	7.603	0.111 (0.017)***	1.12 (1.08–1.16)	6.568	0.101 (0.017)***	1.11 (1.07–1.14)	5.91
year quarter [2023Q2]			0.045 (0.014)**	1.05 (1.02–1.08)	3.22	0.027 (0.017)	1.03 (0.99–1.06)	1.539	0.056 (0.018)**	1.06 (1.02–1.10)	3.18	0.033 (0.018)	1.03 (1.00–1.07)	1.859	0.026 (0.018)	1.03 (0.99–1.06)	1.47
year quarter [2023Q3]			-0.207 (0.015)***	0.81 (0.79–0.84)	-13.553	-0.224 (0.018)***	0.80 (0.77–0.83)	-12.2	-0.191 (0.019)***	0.83 (0.80–0.86)	-10.272	-0.218 (0.018)***	0.80 (0.78–0.83)	-11.86	-0.224 (0.018)***	0.80 (0.77–0.83)	-12.13
year quarter [2023Q4]			0.034 (0.015)*	1.03 (1.00–1.07)	2.195	0.017 (0.018)	1.02 (0.98–1.05)	0.898	0.054 (0.019)**	1.06 (1.02–1.10)	2.899	0.022 (0.019)	1.02 (0.98–1.06)	1.199	0.019 (0.019)	1.02 (0.98–1.06)	0.99

Supplementary_Results_2025-09-12_PDF — S12 Results 2015Q1-2023Q4

RANDOM EFFECTS

	MODEL 3	MODEL 4 - TWLM Linear Fixed	MODEL 5 - TWLM Linear + Squared Fixed	MODEL 6 - TWLM-by-School-Interaction
School ID — Standard deviation of intercepts	0.56	0.56	0.56	0.56
School ID — Correlation between intercept and time quarter slopes	-0.31	-0.41	-0.41	-0.32
School ID — Correlation between intercept and Covid-19 slopes	-0.26	-0.28	-0.28	-0.26
School ID — Correlation between intercept and learning materials slopes	-0.17	NA	NA	NA
School ID — Correlation between intercept and TWLM linear slopes		NA	NA	-0.24
School ID — Correlation between intercept and TWLM squared slopes		NA	NA	0.29
School ID — Correlation between time quarter slopes and Covid-19 slopes	0.54	0.51	0.51	0.36
School ID — Correlation between time quarter slopes and learning materials slopes	-0.32	NA	NA	NA
School ID — Correlation between time quarter slopes and TWLM linear slopes		NA	NA	-0.05
School ID — Correlation between time quarter slopes and TWLM squared slopes		NA	NA	-0.26
School ID — Correlation between Covid-19 slopes and learning materials slopes	-0.07	NA	NA	NA
School ID — Correlation between Covid-19 slopes and TWLM linear slopes		NA	NA	0.06
School ID — Correlation between Covid-19 slopes and TWLM squared slopes		NA	NA	-0.01
School ID — Correlation between TWLM linear slopes and TWLM squared slopes		NA	NA	-0.90
School ID — Standard deviation of time quarter slopes	0.14	0.15	0.15	0.16
School ID — Standard deviation of Covid-19 slopes	0.27	0.27	0.27	0.27
School ID — Standard deviation of learning materials slopes	0.35	NA	NA	NA
School ID — Standard deviation of TWLM linear slopes		NA	NA	0.43
School ID — Standard deviation of TWLM squared slopes		NA	NA	0.14

FIXED EFFECTS

	MODEL 3			MODEL 4 - TWLM Linear Fixed			MODEL 5 - TWLM Linear + Squared Fixed			MODEL 6 - TWLM-by-School-Interaction		
	...ds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value	Log-odds (SE)	OR (CI)	z-value
Baseline mental health service use (intercept)	(0.013)***	0.05 (0.05–0.05)	-234.528	-3.071 (0.013)***	0.05 (0.05–0.05)	-234.743	-3.074 (0.013)***	0.05 (0.05–0.05)	-234.36	-3.072 (0.013)***	0.05 (0.05–0.05)	-233.805
learn materials [1]	(0.010)	0.99 (0.97–1.01)	-0.724	NA	NA	NA	NA	NA	NA	NA	NA	NA
avg time with learn materials		NA	NA	0.003 (0.003)	1.00 (1.00–1.01)	1.132	0.034 (0.007)***	1.03 (1.02–1.05)	4.986	0.006 (0.012)	1.01 (0.98–1.03)	0.517
avg time with learn materials squared		NA	NA	NA	NA	NA	-0.012 (0.002)***	0.99 (0.98–0.99)	-4.926	0.001 (0.004)	1.00 (0.99–1.01)	0.363
subject guidelines [1]	(0.010)	1.00 (0.98–1.02)	-0.07	0.006 (0.010)	1.01 (0.99–1.03)	0.62	0.005 (0.010)	1.01 (0.99–1.02)	0.483	0.005 (0.010)	1.01 (0.99–1.02)	0.512
avg gender centered	(0.015)***	0.76 (0.74–0.78)	-18.06	-0.261 (0.015)***	0.77 (0.75–0.79)	-17.558	-0.261 (0.015)***	0.77 (0.75–0.79)	-17.527	-0.281 (0.015)***	0.76 (0.73–0.78)	-18.337
grade level [10]	(0.006)***	1.48 (1.46–1.49)	62.336	0.387 (0.006)***	1.47 (1.46–1.49)	63.401	0.393 (0.006)***	1.48 (1.46–1.50)	63.13	0.392 (0.006)***	1.48 (1.46–1.50)	62.783
grade level [6]	(0.004)***	1.04 (1.03–1.05)	9.432	0.039 (0.004)***	1.04 (1.03–1.05)	8.85	0.039 (0.004)***	1.04 (1.03–1.05)	8.811	0.037 (0.004)***	1.04 (1.03–1.05)	8.252
grade level [7]	(0.005)***	1.07 (1.06–1.08)	14.644	0.065 (0.004)***	1.07 (1.06–1.08)	15.08	0.072 (0.005)***	1.07 (1.06–1.09)	15.856	0.071 (0.005)***	1.07 (1.06–1.08)	15.158
grade level [8]	(0.006)***	1.16 (1.15–1.18)	24.558	0.151 (0.006)***	1.16 (1.15–1.18)	24.952	0.153 (0.006)***	1.17 (1.15–1.18)	25.203	0.151 (0.006)***	1.16 (1.15–1.18)	24.756
grade level [9]	(0.006)***	1.32 (1.31–1.34)	46.104	0.276 (0.006)***	1.32 (1.30–1.33)	45.931	0.276 (0.006)***	1.32 (1.30–1.33)	45.873	0.274 (0.006)***	1.32 (1.30–1.33)	45.245
year quarter [2015Q2]	(0.010)	1.00 (0.98–1.02)	0.111	0.001 (0.010)	1.00 (0.98–1.02)	0.109	0.001 (0.010)	1.00 (0.98–1.02)	0.113	0.001 (0.010)	1.00 (0.98–1.02)	0.115
year quarter [2015Q3]	(0.011)***	0.77 (0.76–0.79)	-23.245	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.241	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.205	-0.256 (0.011)***	0.77 (0.76–0.79)	-23.183
year quarter [2015Q4]	(0.010)***	0.95 (0.93–0.97)	-5.115	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.113	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.106	-0.054 (0.010)***	0.95 (0.93–0.97)	-5.093
year quarter [2016Q1]	(0.010)***	1.04 (1.02–1.06)	4.077	0.042 (0.010)***	1.04 (1.02–1.06)	4.074	0.042 (0.010)***	1.04 (1.02–1.06)	4.068	0.042 (0.010)***	1.04 (1.02–1.06)	4.07
year quarter [2016Q2]	(0.010)***	1.07 (1.05–1.09)	6.935	0.071 (0.010)***	1.07 (1.05–1.09)	6.93	0.071 (0.010)***	1.07 (1.05–1.09)	6.919	0.071 (0.010)***	1.07 (1.05–1.09)	6.92
year quarter [2016Q3]	(0.011)***	0.82 (0.81–0.84)	-17.886	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.884	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.858	-0.194 (0.011)***	0.82 (0.81–0.84)	-17.835
year quarter [2016Q4]	(0.010)**	1.03 (1.01–1.05)	2.908	0.030 (0.010)**	1.03 (1.01–1.05)	2.901	0.030 (0.010)**	1.03 (1.01–1.05)	2.896	0.030 (0.010)**	1.03 (1.01–1.05)	2.904
year quarter [2017Q1]	(0.010)***	1.31 (1.28–1.34)	27.471	0.270 (0.010)***	1.31 (1.28–1.34)	27.456	0.270 (0.010)***	1.31 (1.28–1.34)	27.41	0.270 (0.010)***	1.31 (1.28–1.34)	27.394
year quarter [2017Q2]	(0.010)***	1.15 (1.13–1.17)	13.99	0.141 (0.010)***	1.15 (1.13–1.17)	13.979	0.141 (0.010)***	1.15 (1.13–1.17)	13.956	0.141 (0.010)***	1.15 (1.13–1.17)	13.953
year quarter [2017Q3]	(0.011)***	0.92 (0.90–0.94)	-8.322	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.325	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.307	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.29
year quarter [2017Q4]	(0.010)***	1.11 (1.09–1.14)	10.66	0.108 (0.010)***	1.11 (1.09–1.14)	10.65	0.108 (0.010)***	1.11 (1.09–1.14)	10.637	0.108 (0.010)***	1.11 (1.09–1.14)	10.636
year quarter [2018Q1]	(0.011)***	0.92 (0.90–0.94)	-8.311	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.312	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.298	-0.088 (0.011)***	0.92 (0.90–0.94)	-8.281
year quarter [2018Q2]	(0.011)***	0.86 (0.85–0.88)	-13.675	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.652	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.677	-0.146 (0.011)***	0.86 (0.85–0.88)	-13.632
year quarter [2018Q3]	(0.012)***	0.62 (0.60–0.63)	-41.783	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.782	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.724	-0.485 (0.012)***	0.62 (0.60–0.63)	-41.69
year quarter [2018Q4]	(0.011)***	0.81 (0.79–0.82)	-19.923	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.917	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.891	-0.216 (0.011)***	0.81 (0.79–0.82)	-19.864
year quarter [2019Q1]	(0.011)***	0.89 (0.87–0.91)	-10.719	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.716	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.701	-0.113 (0.011)***	0.89 (0.87–0.91)	-10.682

Cell D53: -0.255 (0.012)***

Sheet tabs: S7 Variance Decomposition | S8 School Structure Model Fit | S9 School Structure Interaction | S10 School Structure Base Vars | S11 Model Fitting Approach Exp. | S12 Results 2015Q1-2023Q4

	MODEL 3			MODEL 4 - TWLM Linear Fixed			MODEL 5 - TWLM Linear + Squared Fixed			MODEL 6 - TWLM-by-School-Interaction			
	I	J	K	L	M	N	O	P	Q	R	S	T	U
avg time with learn materials squared	NA	NA	NA	NA	NA	NA	NA	-0.012 (0.002)***	0.99 (0.98-0.99)	-4.926	0.001 (0.004)	1.00 (0.99-1.01)	0.363
subject guidelines [1]	0.35	-0.001 (0.010)	1.00 (0.98-1.02)	-0.07	0.006 (0.010)	1.01 (0.99-1.03)	0.62	0.005 (0.010)	1.01 (0.99-1.02)	0.483	0.005 (0.010)	1.01 (0.99-1.02)	0.512
avg gender centered	-17.6	-0.275 (0.015)***	0.76 (0.74-0.78)	-18.06	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.558	-0.261 (0.015)***	0.77 (0.75-0.79)	-17.527	-0.281 (0.015)***	0.76 (0.73-0.78)	-18.337
grade level [10]	62.5	0.390 (0.006)***	1.48 (1.46-1.49)	62.336	0.387 (0.006)***	1.47 (1.46-1.49)	63.401	0.393 (0.006)***	1.48 (1.46-1.50)	63.13	0.392 (0.006)***	1.48 (1.46-1.50)	62.783
grade level [6]	9.43	0.041 (0.004)***	1.04 (1.03-1.05)	9.432	0.039 (0.004)***	1.04 (1.03-1.05)	8.85	0.039 (0.004)***	1.04 (1.03-1.05)	8.811	0.037 (0.004)***	1.04 (1.03-1.05)	8.252
grade level [7]	15.24	0.069 (0.005)***	1.07 (1.06-1.08)	14.644	0.065 (0.004)***	1.07 (1.06-1.08)	15.08	0.072 (0.005)***	1.07 (1.06-1.09)	15.856	0.071 (0.005)***	1.07 (1.06-1.08)	15.158
grade level [8]	25.07	0.150 (0.006)***	1.16 (1.15-1.18)	24.558	0.151 (0.006)***	1.16 (1.15-1.18)	24.952	0.153 (0.006)***	1.17 (1.15-1.18)	25.203	0.151 (0.006)***	1.16 (1.15-1.18)	24.756
grade level [9]	46.38	0.278 (0.006)***	1.32 (1.31-1.34)	46.104	0.276 (0.006)***	1.32 (1.30-1.33)	45.931	0.276 (0.006)***	1.32 (1.30-1.33)	45.873	0.274 (0.006)***	1.32 (1.30-1.33)	45.245
year quarter [2015Q2]	0.108	0.001 (0.010)	1.00 (0.98-1.02)	0.111	0.001 (0.010)	1.00 (0.98-1.02)	0.109	0.001 (0.010)	1.00 (0.98-1.02)	0.113	0.001 (0.010)	1.00 (0.98-1.02)	0.115
year quarter [2015Q3]	-23.3	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.245	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.241	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.205	-0.256 (0.011)***	0.77 (0.76-0.79)	-23.183
year quarter [2015Q4]	-5.12	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.115	-0.054 (0.010)***	0.95 (0.93-0.97)	-5.113	-0.054 (0.011)***	0.95 (0.93-0.97)	-5.106	-0.054 (0.011)***	0.95 (0.93-0.97)	-5.093
year quarter [2016Q1]	4.076	0.042 (0.010)***	1.04 (1.02-1.06)	4.077	0.042 (0.010)***	1.04 (1.02-1.06)	4.074	0.042 (0.010)***	1.04 (1.02-1.06)	4.068	0.042 (0.010)***	1.04 (1.02-1.06)	4.07
year quarter [2016Q2]	6.937	0.071 (0.010)***	1.07 (1.05-1.09)	6.935	0.071 (0.010)***	1.07 (1.05-1.09)	6.93	0.071 (0.010)***	1.07 (1.05-1.09)	6.919	0.071 (0.010)***	1.07 (1.05-1.09)	6.92
year quarter [2016Q3]	-17.9	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.886	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.884	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.858	-0.194 (0.011)***	0.82 (0.81-0.84)	-17.835
year quarter [2016Q4]	2.903	0.030 (0.010)**	1.03 (1.01-1.05)	2.908	0.030 (0.010)**	1.03 (1.01-1.05)	2.901	0.030 (0.010)**	1.03 (1.01-1.05)	2.896	0.030 (0.010)**	1.03 (1.01-1.05)	2.904
year quarter [2017Q1]	27.49	0.270 (0.010)***	1.31 (1.28-1.34)	27.471	0.270 (0.010)***	1.31 (1.28-1.34)	27.456	0.270 (0.010)***	1.31 (1.28-1.34)	27.41	0.270 (0.010)***	1.31 (1.28-1.34)	27.394
year quarter [2017Q2]	14	0.141 (0.010)***	1.15 (1.13-1.17)	13.99	0.141 (0.010)***	1.15 (1.13-1.17)	13.979	0.141 (0.010)***	1.15 (1.13-1.17)	13.956	0.141 (0.010)***	1.15 (1.13-1.17)	13.953
year quarter [2017Q3]	-8.33	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.322	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.325	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.307	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.29
year quarter [2017Q4]	10.66	0.108 (0.010)***	1.11 (1.09-1.14)	10.66	0.108 (0.010)***	1.11 (1.09-1.14)	10.65	0.108 (0.010)***	1.11 (1.09-1.14)	10.637	0.108 (0.010)***	1.11 (1.09-1.14)	10.636
year quarter [2018Q1]	-8.32	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.311	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.312	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.298	-0.088 (0.011)***	0.92 (0.90-0.94)	-8.281
year quarter [2018Q2]	-13.7	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.675	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.677	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.652	-0.146 (0.011)***	0.86 (0.85-0.88)	-13.632
year quarter [2018Q3]	-41.8	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.783	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.782	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.724	-0.485 (0.012)***	0.62 (0.60-0.63)	-41.69
year quarter [2018Q4]	-19.9	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.923	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.917	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.891	-0.216 (0.011)***	0.81 (0.79-0.82)	-19.864
year quarter [2019Q1]	-10.7	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.719	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.716	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.701	-0.113 (0.011)***	0.89 (0.87-0.91)	-10.682
year quarter [2019Q2]	-14.4	-0.153 (0.011)***	0.86 (0.84-0.88)	-14.341	-0.153 (0.011)***	0.86 (0.84-0.88)	-14.34	-0.153 (0.011)***	0.86 (0.84-0.88)	-14.317	-0.153 (0.011)***	0.86 (0.84-0.88)	-14.298
year quarter [2019Q3]	-36.4	-0.412 (0.011)***	0.66 (0.65-0.68)	-36.35	-0.412 (0.011)***	0.66 (0.65-0.68)	-36.344	-0.412 (0.011)***	0.66 (0.65-0.68)	-36.287	-0.412 (0.011)***	0.66 (0.65-0.68)	-36.259
year quarter [2019Q4]	-17	-0.182 (0.011)***	0.83 (0.82-0.85)	-16.991	-0.182 (0.011)***	0.83 (0.82-0.85)	-16.991	-0.182 (0.011)***	0.83 (0.82-0.85)	-16.966	-0.182 (0.011)***	0.83 (0.82-0.85)	-16.937
year quarter [2020Q1]	-10.1	-0.106 (0.011)***	0.90 (0.88-0.92)	-10.044	-0.106 (0.011)***	0.90 (0.88-0.92)	-10.047	-0.106 (0.011)***	0.90 (0.88-0.92)	-10.032	-0.106 (0.011)***	0.90 (0.88-0.92)	-10.008
year quarter [2020Q2]	-20.7	-0.256 (0.012)***	0.77 (0.76-0.79)	-20.705	-0.256 (0.012)***	0.77 (0.76-0.79)	-20.699	-0.256 (0.012)***	0.77 (0.76-0.79)	-20.655	-0.253 (0.012)***	0.78 (0.76-0.79)	-20.369
year quarter [2020Q3]	-22.9	-0.345 (0.015)***	0.71 (0.69-0.73)	-22.78	-0.342 (0.015)***	0.71 (0.69-0.73)	-22.738	-0.343 (0.015)***	0.71 (0.69-0.73)	-22.744	-0.340 (0.015)***	0.71 (0.69-0.73)	-22.461
year quarter [2020Q4]	-0.52	-0.007 (0.015)	0.99 (0.96-1.02)	-0.456	-0.006 (0.015)	0.99 (0.97-1.02)	-0.391	-0.006 (0.015)	0.99 (0.97-1.02)	-0.586	-0.006 (0.015)	0.99 (0.97-1.02)	-0.432
year quarter [2021Q1]	9.997	0.149 (0.015)***	1.16 (1.13-1.20)	10.047	0.148 (0.015)***	1.16 (1.13-1.19)	10.095	0.144 (0.015)***	1.15 (1.12-1.19)	9.755	0.144 (0.015)***	1.15 (1.12-1.19)	9.739
year quarter [2021Q2]	7.816	0.121 (0.015)***	1.13 (1.10-1.16)	7.959	0.119 (0.015)***	1.13 (1.09-1.16)	7.899	0.114 (0.015)***	1.12 (1.09-1.15)	7.512	0.111 (0.015)***	1.12 (1.09-1.15)	7.328
year quarter [2021Q3]	7.334	0.128 (0.017)***	1.14 (1.10-1.18)	7.654	0.126 (0.016)***	1.13 (1.10-1.17)	7.688	0.118 (0.017)***	1.13 (1.09-1.16)	7.143	0.115 (0.017)***	1.12 (1.09-1.16)	6.904
year quarter [2021Q4]	41.68	0.604 (0.014)***	1.83 (1.78-1.88)	41.771	0.601 (0.014)***	1.82 (1.77-1.87)	42.279	0.592 (0.014)***	1.81 (1.76-1.86)	41.055	0.582 (0.015)***	1.79 (1.74-1.84)	39.496
year quarter [2022Q1]	77.57	1.118 (0.014)***	3.06 (2.98-3.14)	77.48	1.111 (0.014)***	3.04 (2.96-3.12)	78.169	1.100 (0.014)***	3.00 (2.92-3.09)	76.279	1.090 (0.015)***	2.97 (2.89-3.06)	73.489
year quarter [2022Q2]	4.512	0.082 (0.016)***	1.09 (1.05-1.12)	5.237	0.074 (0.015)***	1.08 (1.05-1.11)	4.761	0.063 (0.016)***	1.07 (1.03-1.10)	4.045	0.049 (0.016)**	1.05 (1.02-1.08)	3.042
year quarter [2022Q3]	-15	-0.231 (0.017)***	0.79 (0.77-0.82)	-13.767	-0.240 (0.016)***	0.79 (0.76-0.81)	-14.695	-0.252 (0.017)***	0.78 (0.75-0.80)	-15.215	-0.266 (0.017)***	0.77 (0.74-0.79)	-15.516
year quarter [2022Q4]	-0.96	0.006 (0.017)	1.01 (0.97-1.04)	0.335	-0.009 (0.016)	0.99 (0.96-1.02)	-0.52	-0.020 (0.017)	0.98 (0.95-1.01)	-1.22	-0.033 (0.017)	0.97 (0.94-1.00)	-1.894
year quarter [2023Q1]	6.183	0.130 (0.017)***	1.14 (1.10-1.18)	7.603	0.111 (0.017)***	1.12 (1.08-1.16)	6.568	0.101 (0.017)***	1.11 (1.07-1.14)	5.918	0.088 (0.018)***	1.09 (1.05-1.13)	4.977
year quarter [2023Q2]	1.539	0.056 (0.018)**	1.06 (1.02-1.10)	3.18	0.033 (0.018)	1.03 (1.00-1.07)	1.859	0.026 (0.018)	1.03 (0.99-1.06)	1.473	0.012 (0.018)	1.01 (0.98-1.05)	0.674
year quarter [2023Q3]	-12.2	-0.191 (0.019)***	0.83 (0.80-0.86)	-10.272	-0.218 (0.018)***	0.80 (0.78-0.83)	-11.86	-0.224 (0.018)***	0.80 (0.77-0.83)	-12.139	-0.237 (0.019)***	0.79 (0.76-0.82)	-12.258
year quarter [2023Q4]	0.898	0.054 (0.019)**	1.06 (1.02-1.10)	2.899	0.022 (0.019)	1.02 (0.98-1.06)	1.199	0.019 (0.019)	1.02 (0.98-1.06)	0.997	0.005 (0.020)	1.01 (0.97-1.05)	0.262

We extracted health service use with the following registered diagnoses from KUHR:

ICD-10 diagnoses: F10-50, F55, F60-63, F68-81, F84, F90-95, F98.0-98.2, F98.5-98.6, F98.8-98.9, R44-46, R48, U07.1, Z04.0, Z55, Z63.9, Z65.8, Z65.9, Z71.1, Z72-73, Z81, Z86.5, Z91.3-91.6, and Z91.8

ICPC-2 diagnoses: P01-04, P06, P10-13, P15-19, P22-24, P27, P29, P45, P72-82, P85-86, P98-99, R99.2, and Z07