

# Evaluating the Efficacy of BetterLesson: Connecting Professional Learning with Teacher and Student Outcomes Study Type: ESSA Evidence Level III

Prepared for: BetterLesson

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## **EXECUTIVE SUMMARY**

BetterLesson contracted with LearnPlatform by Instructure, a third-party edtech research company, to examine the impact of usage of its teacher professional learning program on teachers' motivation and student achievement. LearnPlatform designed the study to satisfy Level III requirements (*Promising Evidence*) according to the Every Student Succeeds Act (ESSA).

#### **Study Sample, Measures, and Methods**

This study occurred during the 2022–23 school year in a small district in the northeastern U.S. The study sample included both teachers and students such that researchers could examine whether teachers' BetterLesson use impacted teacher motivation and student achievement. All analyses were conducted separately by school level (i.e., elementary and secondary). The elementary-level sample included 10 teachers from four schools and 158 students from grades 1–6. In terms of demographics, the elementary teachers were White (100%) and predominantly female (93%). The secondary-level sample included 5 teachers from three schools and 1,110 students from grades 7–12. In terms of demographics, the secondary teachers were White (100%) and female (100%).

Researchers quantified teachers' usage of BetterLesson by using data from the 2022–23 professional learning experiences (i.e., total workshops attended, coaching meetings completed, and coaching goals completed). Researchers used validated survey items to evaluate teachers' motivational beliefs (Lauermann & Karabenick, 2013; Midgley et al., 2000; Pintrich et al., 1991). Teachers also self-reported their demographic, experience, and education level. Students' achievement outcomes were measured using NWEA MAP RIT reading and math scores provided by the school district.

Researchers used a variety of quantitative analytic approaches to answer the research questions. First, researchers used descriptive statistics to examine participant characteristics and use of BetterLesson. Researchers then used regression models to examine whether BetterLesson use was significantly associated with teachers' motivational beliefs and students' reading and math scores in spring 2023, controlling for their baseline scores in fall 2022. The regression analyses also included a student-level covariate (i.e., grade level). In addition, researchers calculated standardized improvement index scores to make the model-predicted changes in student outcomes more interpretable.

#### **Teacher and Student Outcomes**



On average, among elementary school teachers, using more BetterLesson professional learning (PL) experiences were significantly associated with higher teaching self-efficacy and value for PL (i.e., interest for PL and relevance of PL).



On average, among secondary school teachers, using more BetterLesson PL experiences were significantly associated with higher mastery-approach goals and value for PL (i.e., interest for PL and relevance of PL).



On average, having a teacher who used more BetterLesson PL experiences were associated with higher reading scores (i.e., statistically significant finding for number of workshops attended) among elementary students.



On average, elementary students who had a teacher who used BetterLesson coaching had higher end-of-year math and reading scores compared to students whose teacher did not use coaching.

#### Conclusions

This study provides results to satisfy ESSA evidence requirements for Level III (Promising Evidence) given the correlative study design and positive statistically significant findings.

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## Introduction

BetterLesson engaged LearnPlatform by Instructure, a third-party edtech research company, to conduct an evaluation for its program. LearnPlatform designed the study to satisfy Level III requirements (*Promising Evidence*) according to the Every Student Succeeds Act (ESSA).

K–12 districts and schools have adopted new and sophisticated education tools and curricula, but there is low implementation and effective utilization of these resources (Gorard et al., 2020; Levin, 2013). In order to use these resources to improve their teaching and effectively support every student, educators need targeted, timely, and actionable coaching and training (Darling-Hammond et al., 2020). BetterLesson provides a comprehensive approach to educator professional learning by providing the ongoing coaching and professional learning that educators need to sustain impactful shifts in their teaching practice.

#### **Program Implementation Research Question**

- 1. Among teachers, what were the usage patterns of BetterLesson professional learning (PL) experiences during the 2022–2023 school year?
  - a. What was the average number of coaching sessions completed?
  - b. What was the average number of coaching goals completed?
  - c. What was the average number of workshops completed?

#### **Effectiveness Research Questions**

- 2. Are there significant differences in students' end-of-year standardized test scores in reading and math depending on whether their teacher used BetterLesson PL or not?
- 3. After controlling for students' prior achievement, is teachers' use of BetterLesson PL significantly associated with students' standardized math and reading assessment scores?
- 4. After controlling for students' prior achievement, is teachers' use of BetterLesson PL significantly associated with their teaching self-efficacy beliefs and value for PL (i.e., interest for PL and relevance of PL)?

## **Methods**

This section of the report briefly describes the setting, participants, measures, and analysis methods.

#### **Setting & Participants**

This study occurred during the 2022–23 school year in a small district in the northeastern U.S. The study sample included both teachers and students such that researchers could examine whether teachers' BetterLesson use impacted teacher motivation and student achievement. All analyses were conducted separately by school level (i.e., elementary and secondary). The elementary-level sample included 10 teachers from four schools and 158 students from grades 1–6. In terms of demographics, the elementary teachers were White (100%) and predominantly female (93%). A majority of the teachers had a master's degree (87%). The secondary-level sample included 5 teachers from three schools and 1,110 students from grades 7–12. In terms of demographics, the secondary teachers were White (100%). All the teachers had a master's degree (100%). The teachers across both samples represented a range of teaching experience (9% were in their first year of teaching, 36% had taught for 2–4 years, 27% for 5–9 years, 12% for 10–14 years, and 15% for 15 or more years).

#### Measures

This study included the following measures to provide insights into BetterLesson implementation and evidence about the potential impacts of the program on student outcomes.

*BetterLesson Use.* Researchers quantified teachers' usage of BetterLesson by using data from the 2022–23 professional learning experiences provided by BetterLesson (i.e., total workshops attended, coaching meetings completed, and coaching goals completed<sup>1</sup>).

*Teacher Outcomes.* Researchers used validated surveys to evaluate teachers' motivational beliefs and perceptions of PL. Specifically, teachers completed a survey at the end of the 2022–23 school year that included the following measures on a Likert-type scale (1 = strongly disagree to 5 = strongly agree): teacher efficacy for teaching (three items; Lauermann & Karabenick, 2013), teachers' perceived interest value for professional learning (six items; Pintrich et al., 1991), mastery-approach goals (five items; Midgley et al., 2000). All survey measures were adapted from scales found to be reliable and valid in prior research. Teachers also self-reported their demographic, experience, and education level.

*Student Outcomes.* Students' achievement outcomes were measured using NWEA MAP RIT reading and math scores provided by the school district. Students' fall 2022 scores were used as a baseline

<sup>&</sup>lt;sup>1</sup> Coaching goals are defined by teachers with their instructional coach to define what specific outcomes they want to improve as a result of coaching.

measure and their spring 2023 scores were used as the outcome measure. Students' achievement data were provided directly by the school district.

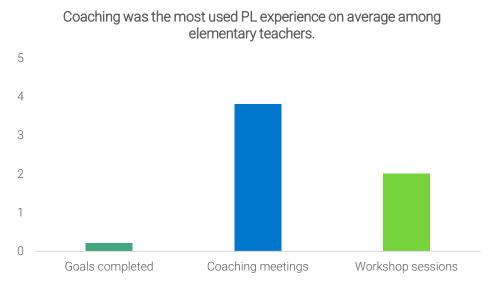
#### **Data Analysis**

Researchers used a variety of quantitative analytic approaches to answer the research questions. First, researchers used descriptive statistics to examine participant characteristics and use of BetterLesson. Researchers then used two sets of analyses to evaluate the effectiveness of BetterLesson: (1) comparative analysis to determine if there were significant mean differences on math and reading scores between students whose teachers were coaching users and those whose teachers did not use coaching, and (2) correlative analysis to examine whether the amount of BetterLesson use was significantly associated with teachers' motivational beliefs and students' reading and math scores in spring 2023, controlling for their baseline scores in fall 2022. All of the analyses were conducted using regression models and every model included baseline achievement and grade level as student-level covariates. In addition, researchers calculated standardized improvement index scores and Hedges' *g* effect sizes to make the model-predicted changes in student outcomes more interpretable for decisionmakers.

Prior to running the comparative analysis between coaching users and non-users, researchers evaluated whether students met the What Works Clearinghouse (WWC, 2022) criteria for baseline equivalence for math and reading achievement (i.e., that statistically significant baseline differences with an effect size between 0.05 and 0.25 are acceptable with statistical adjustment). See Appendix B for more information on baseline equivalence.

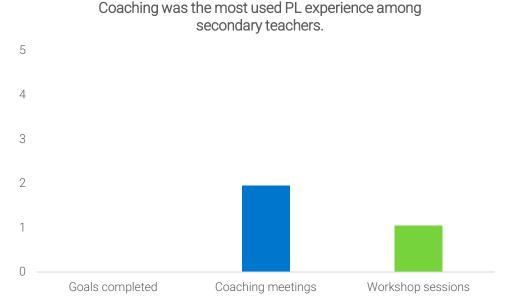
## **Program Implementation Findings**

Among teachers who used BetterLesson PL experiences, there was some variability in the extent of use depending on the type of experience (see Figures 1 and 2). The majority of elementary teachers (90%) attended at least one workshop session, but had greater usage of coaching meetings on average.



*Figure 1.* Among the teachers in the sample, 20% completed at least one goal (range: 0-1), 40% attended at least one coaching meeting (range: 0-13), and 90% attended at least one workshop (range: 0-4).

The majority of secondary teachers (60%) attended at least one workshop session, but had greater usage of coaching meetings on average. Secondary teachers used BetterLesson PL resources less than elementary teachers and did not complete any coaching goals.



*Figure 2.* Among the teachers in the sample, 40% attended at least one coaching meeting (range: 0-9), and 60% attended at least one workshop (range: 0-2).

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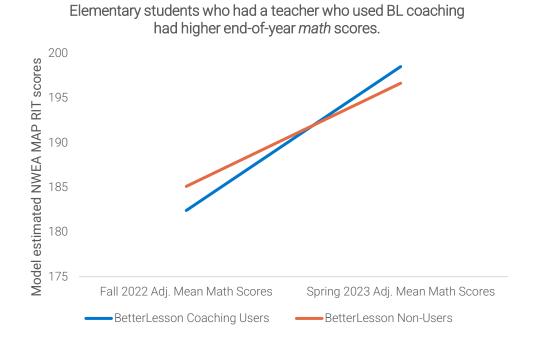
## **Program Effectiveness Findings**

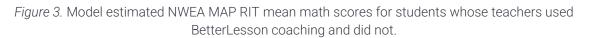
To answer the remaining study research questions, researchers used two sets of regression analyses. The first set was to examine comparative effects between BetterLesson coaching users and nonusers, and the second set was to evaluate whether more use of BetterLesson was associated with teacher and student outcomes. The key study findings are included below, and the full set of results can be found in Appendix B.

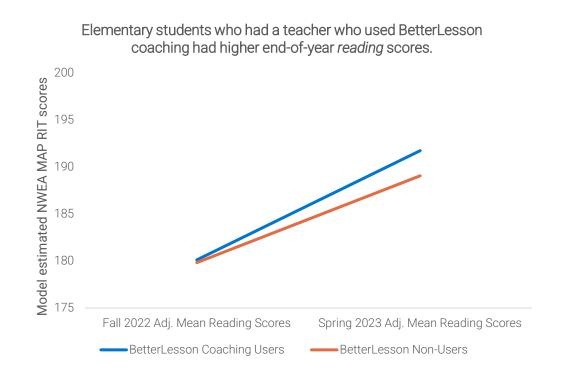
#### Differences in Reading and Math Outcomes Among Elementary Students Whose Teacher Used BetterLesson Coaching Compared Those Whose Teacher Did Not

To understand whether teachers' use of BetterLesson coaching positively impacted students' math and reading outcomes, researchers conducted a series of regression analyses by domain (i.e., math and reading). Secondary students did not meet the baseline equivalence criteria (the students of coaching users performed better on Fall 2022 assessments compared to non-users), so they were not included in the outcomes analysis. Therefore, the focus of the comparative analysis was on elementary teachers and students (Figures 3 and 4). See Appendix B baseline equivalence information and detailed results.

*Key Finding 1*. Elementary students who had a teacher who used BetterLesson coaching had higher NWEA math and reading RIT scores (Hedges' g = 0.10 and 0.14, respectively), but this finding was not statistically significant.





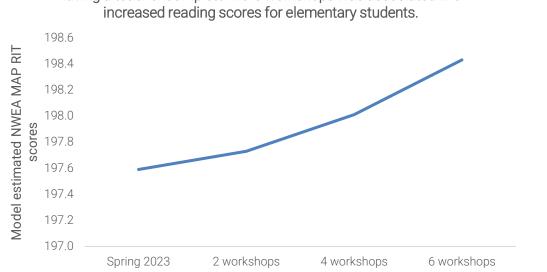


*Figure 4.* Model estimated NWEA MAP RIT mean reading scores for students whose teachers used BetterLesson coaching and did not.

#### Differences in Reading and Math Outcomes Among Elementary Students Whose Teacher Used BetterLesson Coaching Compared Those Whose Teacher Did Not

To understand whether the level of teachers' use of BetterLesson PL resources was significantly associated with students' math and reading outcomes, researchers used regression analyses by domain (i.e., math and reading) and school level (i.e., elementary and secondary). All of the regression models included students' baseline achievement and grade level as control variables.

Key Finding 2. On average, having a teacher who used BetterLesson professional learning more was associated with higher reading scores (i.e., statistically significant finding for number of workshops attended). For elementary students at the 50<sup>th</sup> percentile, having their teacher attend one additional workshop is expected to result in an improvement of 2.5 percentile points on their reading scores.



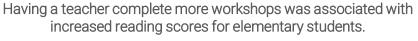


Figure 5. Model estimated NWEA MAP RIT reading scores predicted by number of BetterLesson workshops attended ( $\beta$  = 0.085, p = .028).

#### Association of BetterLesson Professional Learning Experiences with Teachers' Beliefs

To understand whether the level of teachers' use of BetterLesson PL resources was significantly associated with value for PL, researchers used regression analyses by level (i.e., elementary and secondary). All of the regression models included students' baseline achievement and grade level as control variables. Value for PL was operationalized as having interest in PL and the perception that PL is relevant to their teaching practice.

*Key Finding 3.* On average, using BetterLesson professional learning more was significantly associated with higher value for PL (i.e., interest for PL and relevance of PL) for elementary and secondary teachers.

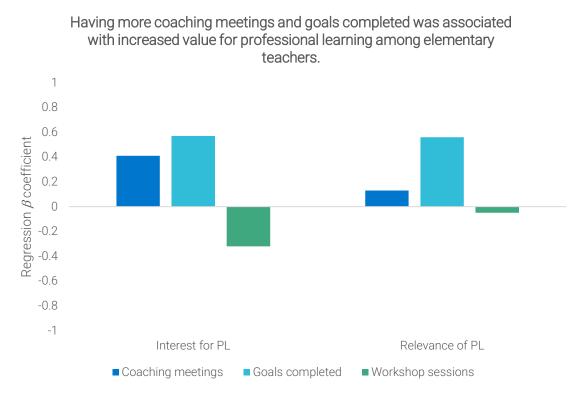


Figure 6. Results for regression models predicting elementary teachers' value beliefs for professional learning; coaching meetings were significantly associated with increased interest for PL ( $\beta$  = .41, p < .001), coaching goals completed were significantly associated with increased interest for PL ( $\beta$  = .57, p < .001) and relevance of PL ( $\beta$  = .56, p < .001), and workshop sessions were significantly associated with decreased interest for PL ( $\beta$  = .32, p < .001).



Having more coaching meetings and workshop sessions was associated with increased value for professional learning among secondary teachers.

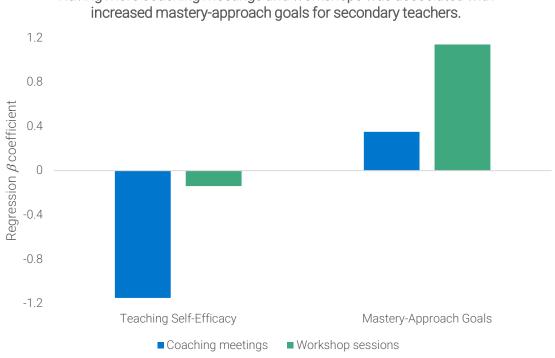
*Figure 7.* Results for regression models predicting secondary teachers' value beliefs for professional learning; coaching meetings were significantly associated with increased interest for PL ( $\beta$  = .17, p < .001) and relevance for PL ( $\beta$  = .16, p = .003) and workshop sessions were significantly associated with increased interest for PL ( $\beta$  = 1.14, p < .001) and relevance for PL ( $\beta$  = 1.15, p < .001). Coaching goals were not evaluated for secondary teachers because there was no variability on this indicator.

To understand whether the level of teachers' use of BetterLesson PL resources was significantly associated with teaching motivation, researchers used regression analyses by level (i.e., elementary and secondary). All of the regression models included students' baseline achievement and grade level as control variables. Teaching motivation was operationalized as having self-efficacy for teaching (i.e., the belief a teacher has about their ability to effectively help students learn) and mastery-approach goals (the belief that a teacher has about their ability to incrementally learn and develop over time). Teaching self-efficacy and mastery-approach goals are associated with increased persistence and performance (Linnenbrink-Garcia et al., 2018; Zimmerman, 2000).

*Key Finding 4*. On average, using BetterLesson professional learning more was significantly associated with higher teaching motivation for teachers (i.e., teaching self-efficacy for elementary teachers and mastery-approach goals for secondary teachers).



Figure 8. Results for regression models predicting elementary teachers' motivational beliefs; coaching meetings were significantly associated with increased teaching self-efficacy ( $\beta$  = .48, p = .001), coaching goals completed were significantly associated with increased teaching self-efficacy ( $\beta$  = .76, p < .001), and workshop sessions were significantly associated with increased teaching self-efficacy ( $\beta$  = .20, p = .010), but also with decreased mastery-approach goals ( $\beta$  = -.49, p < .001). Coaching meetings and goals completed were not significantly associated with mastery-approach goals.



Having more coaching meetings and workshops was associated with

Figure 9. Results for regression models predicting secondary teachers' motivational beliefs; coaching meetings were significantly associated with increased mastery-approach goals ( $\beta$  = .35, p < .001), but also with decreased teaching self-efficacy ( $\beta$  = -1.15, p < .001), and workshop sessions were significantly associated with increased mastery-approach goals ( $\beta$  = 1.14, p < .001).

## **Conclusions and Recommendations**

In sum, the results of this study suggest that there is a positive effect of BetterLesson professional learning on student achievement and teachers' motivational beliefs. Specifically, the data indicated that, for elementary students, having a teacher who used BetterLesson professional learning resulted in higher math and reading scores at the end-of-the year. Having a teacher who used BetterLesson more was also significantly associated with increased reading scores among elementary students. Additionally, greater use of BetterLesson was significantly associated with teachers' motivational beliefs, albeit there were differential effects depending on the school level (i.e., teaching self-efficacy for elementary teachers and mastery-approach goals for secondary teachers).

Given the positive outcome findings of the impact analysis among the sample, this study provides results to satisfy ESSA evidence requirements for Level III (*Promising Evidence*). Specifically, this study met the following criteria:

Correlative design<sup>2</sup>

- Proper design and implementation
- ✓ Statistical controls through covariates
- ✓ Multiple statistically significant, positive findings
- Fewer statistically significant, negative findings than positive findings

Researchers recommend the following next steps for the BetterLesson team:

 recruit another study site with a bigger sample to increase statistical power and examine whether there are significant differences in reading and math outcomes between students whose teacher used BetterLesson and those who did not.

#### Acknowledgements

The authors of this report would like to thank Avery Wall and Ben Chalmers for helping prepare the data sets for analysis.

<sup>&</sup>lt;sup>2</sup> The study also included a comparative design, but the findings were not statistically significant.

## References

Darling-Hammond, L., Schachner, A., & Edgerton, A. K. (2020). *Restarting and Reinventing School: Learning in the Time of COVID and Beyond.* Learning Policy Institute.

Gorard, S., See, B. H., & Siddiqui, N. (2020). What is the evidence on the best way to get evidence into use in education? *Review of Education*, *8*, 570–610.

Lauermann, F., & Karabenick, S. A. (2013). The meaning and measure of teachers' sense of responsibility for educational outcomes. *Teaching and Teacher Education, 30,* 13-26.

Lee, A., & Shah, M. (2023). *BetterLesson logic model: ESSA level IV study*. LearnPlatform by Instructure.

Levin, B. (2013). To know is not enough: Research knowledge and its use. *Review of Education, 1,* 2–31.

Linnenbrink-Garcia, L., Wormington, S. V., Snyder, K. E., Riggsbee, J., Perez, T., Ben-Eliyahu, A., & Hill, N. E. (2018). Multiple pathways to success: An examination of integrative motivational profiles among upper elementary and college students. *Journal of Educational Psychology*, *110*, 1026.

Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Freeman, K. E., & Urdan, T. (2000). *Manual for the patterns of adaptive learning scales.* Ann Arbor: University of Michigan.

Pintrich, P. R. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). Ann Arbor: University of Michigan.

What Works Clearinghouse. (2022). *What Works Clearinghouse procedures and standards handbook, version 5.0*. U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance (NCEE). This report is available on the What Works Clearinghouse website at <u>https://ies.ed.gov/ncee/wwc/Handbooks</u>

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, *25*, 82-91.

## Appendix A. BetterLesson Logic Model

Problem Statement: K-12 districts and schools have adopted new and sophisticated education tools and curricula, but there is low

BL BetterL	esson impleme resource	ntation and effective utiliz s to improve their teachin	ation of these resources g and effectively support	d schools have adopted new and sophisticated education tools and curricula, but there is low . Educators need targeted, timely, and actionable coaching and training on how to use these t every student. BetterLesson provides a systemic approach to teacher professional learning by that educators and school leaders need to sustain impactful shifts in their practice.
Inputs	Participants	Activities	Outputs	Outcomes What changes or benefits result
What we invest:	Who we reach:	What we do:	Products of activities:	Short-term Intermediate Long-term
BetterLesson (BL) provides connected and responsive professional learning (PL) that includes: individualized PL planning personalized 1:1 coaching for educators and leaders	Educators	Educators meet 1:1 with coaches Educators use taxonomy to identify PL priorities and define their learning pathway Educators attend workshops related to specific problems of practice and develop action plans based on new learning Educators access on-demand asynchronous PL courses Educators use instructional resources	Number, duration, and timing of coaching sessions Number of workshops (virtual and in-person) completed Number, nature, and type of PL activities completed Time spent on PL-related activities (hours) Number of self-assessments completed Number of instructional resources accessed	Educators are able to effectively use student data to identify successes and growth areas Educators use a individualized professional learning plans to reach their instructional goals Educators gain and use newly learned student-centered instructional strategies Educators enhance student engagement Educators have Educators have increase dualue for data-driven PL Educators have increase dualue for data-driven PL Educators have increase dualue for data-driven PL Educators have increase dualue for Educators set etaching self-efficacy Educators have student engagement Educators have student engagement
targeted in-person and virtual collaborative workshops self-directed asynchronous courses structured taxonomy that guides PL pathways <sup>1</sup> instructional resources dashboard for tracking teacher professional learning and outcomes	BL Team	BL team develop targeted PL plan BL team meet 1:1 with educators and leaders BL team facilitate workshops in-person and online BL team facilitate informational classroom observations by school Leaders provide time, structure, and	Number of PL plans developed Number of coaching meetings with teachers and leaders Number of workshops conducted Number of classroom observations facilitated	BL team is able to better refine targeted PL plan in response to emerging areas of growth and needs
actionable classroom observations <sup>2</sup> Schools provide: time, structure, and accountability mechanisms for professional learning	District and School Leaders	accountability mechanisms for educator PL Leaders review BL summary statistics Leaders view educators' coaching notes and PL participation Leaders conduct informational classroom observations and collaborative reflection with educators using BL framework Leaders meet 1:1 with BL executive coaches	Number of views of BL summary statistics (via email) Number of views of coaching notes and PL progress dashboard Number of classroom observations using BL framework Number of executive coaching sessions	Leaders gain access to coaching and training resources Leaders get actionable insights into educator progress in professional learning

LOGIC MODEL

<sup>1</sup> The BetterLesson taxonomy provides a structured framework for educators to define student-centered professional learning priorities using elements, focus areas, topics, outcomes, and indicators.
<sup>2</sup> Actionable observations are identified as Learning Walks by BetterLesson. BetterLesson coaches facilitate learning walks by supporting leaders on site. These observations are not evaluative.

## **Appendix B. Additional Information on Outcome Findings**

#### **Baseline Equivalence**

Researchers conducted baseline equivalence analyses to determine whether there were baseline differences in achievement between students whose teacher used BetterLesson coaching and students whose teacher did not use BetterLesson coaching. Specifically, researchers used regressions for NWEA MAP fall 2022 RIT math and reading scores to evaluate the magnitude and significance of baseline achievement differences.

As presented in Table B1, results from the regression analysis reveal that baseline differences fell within the range that was acceptable to use statistical controls for in the final outcomes analysis according to the WWC (2022) guidelines (i.e., Hedge's *g* effect size < 0.25) for elementary students, but not for secondary students.

Level & Subject	Effect Size	<i>p</i> -value
Elementary: Math	-0.14	.551
Elementary: Reading	0.01	.953
Secondary: Math	0.79	.017
Secondary: Reading	0.35	.368

Table B1. Baseline Equivalence Analysis Students

#### Examining Differences between BetterLesson Coaching Users on Math and Reading Outcomes for Elementary Students

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Subject		Unstandardized Beta Coefficient	Standard Error	t-statistic	p-value	Hedges' g
	Users vs. Non-Users	1.85	2.21	0.84	.404	0.10
Math	Spring 2022 FSA ELA score	0.84	0.04	21.39	<.001	
	Grade	-0.50	0.76	-0.65	.517	
	Users vs. Non-Users	2.67	2.29	1.17	.245	0.14
Reading	Spring 2022 FSA ELA score	0.84	0.39	21.75	<.001	
	Grade	-0.63	0.80	-0.79	.430	

*Table B2.* Differences between elementary non-users and users on spring 2023 NWEA MAP RIT scores controlling for baseline achievement and grade

#### Examining the Associations between BetterLesson Usage and Achievement Outcomes for *Elementary* Students

Subject	Predictor	Unstandardized	Standardized	Standard	t-statistic	p-value
		Beta	beta	Error		
		Coefficient	coefficient of Y			
	Number of goals completed	-3.19	-0.17	1.94	-1.64	.103
	BOY math score	0.84	0.04	0.04	21.33	<.001
	Grade level	-1.31	-0.07	0.58	-2.23	.027
	Number of coaching meetings	0.02	0.00	0.19	0.12	.903
Math	BOY math score	0.84	0.04	0.04	21.32	<.001
	Grade level	-0.90	-0.05	0.67	-1.34	.182
	Number of workshop sessions	-0.64	-0.04	0.57	-1.13	.261
	BOY math score	0.84	0.94	0.04	21.44	<.001
	Grade level	-0.78	-0.06	0.56	-1.38	.170
	Number of goals completed	3.22	0.08	2.01	1.61	.110
	BOY math score	0.85	0.95	0.04	21.85	<.001
	Grade level	-0.96	-0.05	0.60	-1.61	.109
	Number of coaching meetings	0.33	0.08	0.19	1.69	.092
Reading	BOY math score	0.85	0.95	0.04	21.91	<.001
	Grade level	-0.65	-0.05	0.68	0.95	.342
	Number of workshop sessions	1.33	0.08	0.60	2.21	.028
	BOY math score	0.85	0.95	0.04	22.09	<.001
	Grade level	-1.72	-0.13	0.59	-2.93	.004

*Table B3.* NWEA MAP RIT scores predicted by BetterLesson PL usage indicators

#### Examining the Associations between BetterLesson Usage and Achievement Outcomes for Secondary Students

Subject	Predictor	Unstandardized Beta Coefficient	Standardized beta coefficient of Y	Error	t-statistic	p-value
	Number of coaching meetings	2.48	0.38	1.30	1.90	.060
	BOY math score	0.90	0.87	0.05	16.52	<.001
Math	Grade level	-5.61	-0.42	2.58	-2.17	0.03
Math	Number of workshop sessions	-6.20	39	3.26	-1.90	.060
	BOY math score	0.90	0.87	0.05	16.52	<.001
	Grade level	-5.61	-0.43	2.58	-2.17	.032
	Number of coaching meetings	1.24	0.17	2.07	0.60	.552
	BOY math score	0.71	0.75	0.07	9.81	<.001
Deeding	Grade level	-4.00	-0.26	4.24	-0.94	.348
Reading	Number of workshop sessions	-3.09	-0.17	5.18	-0.60	.552
	BOY math score	0.71	0.75	0.73	9.81	<.001
	Grade level	-4.00	-0.25	4.24	-0.94	.348

*Table B4.* NWEA MAP RIT scores predicted by BetterLesson PL usage indicators

## Examining the Associations between BetterLesson Usage and Value for PL and Motivational Beliefs for *Elementary* Teachers

*Table B5.* Teacher value and motivational beliefs predicted by BetterLesson PL usage indicators

Belief	Predictor	Unstandardized Beta Coefficient	Standardized beta coefficient of Y	Error	t-statistic	<i>p</i> -value
	Number of goals completed	0.49	0.57	0.08	6.31	<.001
	BOY reading score	-0.00	-0.09	0.00	-1.18	.242
	Grade level	-0.03	-0.11	0.02	-1.15	.253
Interest	Number of coaching meetings	0.03	0.41	0.01	4.45	<.001
for PL	BOY reading score	-0.00	-0.18	0.00	-2.19	.031
	Grade level	-0.05	-0.19	0.03	-1.88	.062
	Number of workshop sessions	-0.11	-0.32	0.02	-4.58	<.001
	BOY reading score	-0.00	-0.21	0.00	-2.65	.009
	Grade level	-0.10	-0.42	0.02	-5.13	<.001
Relevance of PL	Number of goals completed	0.51	0.56	0.09	5.91	<.001

Belief	Predictor	Unstandardized		Standard	t-statistic	<i>p</i> -value
		Beta Coefficient	beta coefficient of Y	Error		
	BOY reading score	-0.00	-0.17	0.00	-2.13	.035
	Grade level	-0.01	-0.02	0.03	-0.23	.822
	Number of coaching meetings	0.01	0.13	0.00	1.32	.188
	BOY reading score	-0.00	-0.26	0.00	-2.90	.004
	Grade level	-0.07	-0.28	0.03	-2.48	.014
	Number of workshop sessions	-0.02	-0.05	0.03	-0.64	.521
	BOY reading score	-0.00	-0.26	0.00	-2.95	.004
	Grade level	-0.09	-0.35	0.02	-3.94	<.001
	Number of goals completed	0.89	0.76	0.10	8.90	<.001
	BOY reading score	-0.00	-0.05	0.00	-0.71	.481
	Grade level	0.03	0.08	0.03	0.86	.393
Self-	Number of coaching meetings	0.05	0.48	0.01	5.09	<.001
Efficacy Beliefs	BOY reading score	-0.00	-0.17	0.00	-2.00	.048
Delleis	Grade level	-0.02	-0.07	0.04	-0.71	.478
	Number of workshop sessions	0.09	0.20	0.04	2.60	.010
	BOY reading score	-0.00	-0.01	0.00	-1.69	.094
	Grade level	-0.14	-0.27	0.03	-4.56	<.001
	Number of goals completed	-0.10	-0.09	0.12	-0.84	.403
	BOY reading score	-0.00	-0.29	0.00	-3.30	.001
	Grade level	-0.16	-0.45	0.04	-4.28	<.001
Mastery-	Number of coaching meetings	-0.02	-0.15	0.01	-1.52	.131
Approach Goals	BOY reading score	-0.00	-0.28	0.00	-3.24	.002
GUais	Grade level	-0.17	-0.49	0.04	-4.69	<.001
	Number of workshop sessions	-0.24	-0.48	0.03	-8.26	<.001
	BOY reading score	-0.01	-0.33	0.00	-4.71	<.001
	Grade level	-0.12	-0.23	0.02	-4.93	<.001

## Examining the Associations between BetterLesson Usage and Value for PL and Motivational Beliefs for Secondary Teachers

Belief	Predictor	Unstandardized Beta	Standardized beta coefficient of Y	Standard Error	t-statistic	<i>p</i> -value
	Number of coaching meetings	0.02	0.16	0.01	3.92	<.001
	BOY reading score	-0.00	-0.07	0.00	-3.13	.002
Interest	Grade level	-0.36	-1.04	0.02	-24.66	<.001
for PL	Number of workshop sessions	0.49	1.14	0.02	24.91	<.001
	BOY reading score	-0.00	-0.02	0.00	-1.15	253
	Grade level	0.06	0.18	0.02	3.90	<.001
Relevance of PL	Number of coaching meetings	0.03	0.16	0.01	3.01	.003
	BOY reading score	-0.00	-0.10	0.00	-3.45	.001
	Grade level	-0.50	-0.98	0.03	-18.64	<.001
	Number of workshop sessions	0.73	1.15	0.05	15.26	<.001
	BOY reading score	-0.00	-0.04	0.00	-1.94	.053
	Grade level	0.12	0.24	.04	3.19	.002
Teaching Self-	Number of coaching meetings	-0.12	-0.41	0.01	-13.26	<.001
Efficacy	BOY reading score	-0.00	-0.01	0.00	-1.79	.075
Beliefs	Grade level	0.25	0.85	0.03	9.80	<.001
	Number of workshop sessions	-0.05	-0.14	0.08	-0.66	.507
	BOY reading score	-0.00	-0.13	0.00	-2.11	.036
	Grade level	-0.07	-0.24	0.06	-1.12	.264
Mastery- Approach	Number of coaching meetings	0.05	0.35	0.01	8.03	<.001
Goals	BOY reading score	-0.00	-0.05	0.00	-1.81	.072
	Grade level	-0.45	-1.18	0.02	-27.42	<.001
	Number of workshop sessions	0.53	1.14	0.03	18.54	<.001
	BOY reading score	0.00	0.02	0.00	1.15	.249
	Grade level	0.07	0.18	0.02	2.92	.004

*Table B6.* Teacher value and motivational beliefs predicted by BetterLesson PL usage indicators