

# Global Teacher and Teacher Coach Study

## CONTENTS

|                                                                                                                        |                    |
|------------------------------------------------------------------------------------------------------------------------|--------------------|
| Executive Summary                                                                                                      | <a href="#">2</a>  |
| 1. Teaching as Collective Leadership – Developing Teacher Mindset and Supporting Classroom Strategies Through Coaching | <a href="#">3</a>  |
| 2. Study Motivation – From Beta-Testing to Programmatic Improvement Research of the TACL Framework                     | <a href="#">5</a>  |
| 3. Intervention Design, Recruitment, and Execution                                                                     | <a href="#">6</a>  |
| 4. Research Methodology (Quantitative and Qualitative)                                                                 | <a href="#">7</a>  |
| 5. Instrument Development and Psychometric Analysis                                                                    | <a href="#">9</a>  |
| 6. Study Sample Description                                                                                            | <a href="#">6</a>  |
| 7. Learning Question 1: Shifts in Teacher Mindsets and Actions                                                         | <a href="#">12</a> |
| 8. Learning Question 2: Student Perceptions of Teaching                                                                | <a href="#">14</a> |
| 9. Learning Question 3: Enabling Factors                                                                               | <a href="#">17</a> |
| 10. Limitations                                                                                                        | <a href="#">18</a> |
| 11. Discussion on Factors Influencing Teacher Development and Areas for Future Research and Conclusion                 | <a href="#">20</a> |
| References                                                                                                             | <a href="#">22</a> |
| Appendices and Data                                                                                                    | <a href="#">23</a> |
| Teacher Mindsets and Student Survey                                                                                    | <a href="#">23</a> |
| Student Perceptions Survey (Lower Primary Version)                                                                     | <a href="#">26</a> |
| Student Perceptions Survey (Upper Primary and Secondary Version)                                                       | <a href="#">29</a> |
| Balance Table of Covariates by Intervention Group (rough version)                                                      | <a href="#">34</a> |
| Regression Outputs for Inferential Analysis on Teacher Mindsets                                                        | <a href="#">35</a> |

## Executive Summary

Teach For All's mission is to develop collective leadership to improve education and expand opportunity for all children, so children can shape a better future for themselves and the world around them. This mission raises a lot of challenging questions. How would our education systems be designed differently if the purpose of education was fulfilling students' potential as leaders of a better future? What does it take to support students in developing their agency, wellbeing, awareness, connectedness, and mastery? How can we develop teachers with the motivations, mindsets, and skills to foster these outcomes?

In partnership with the Jacob's Foundation, Teach For All's Monitoring, Evaluation, Research, and Learning (MERL) team is embarking on new research partnerships with Teach For All's Global Learning Lab, who are currently developing a new Teaching as Collective Leadership (TACL) framework. The TACL framework will offer actionable and locally customizable guidance for teachers, teacher coaches, and program designers within the Teach For All network to support the development of student leadership.

The Global Teacher and Teacher Coach Study marks our first pilot effort to implement applied research to learn about the TACL framework. The study data is from 48 initial teachers and 24 teacher coaches representing nine network partners across varied contexts. Our study investigates to what extent teachers develop mindsets aligned with collective leadership, and what kinds of classroom strategies they engage in as a result of exposure to the TACL model. We test two different delivery methods of the TACL framework: a series of workshops between teachers and their teacher coaches and a second intervention to provide virtual instructions on how to use the TACL framework and resources. Both interventions were designed to emulate common ways Teach For All delivers learning experiences and insights on teacher development to our network partners.

First, we analyze the difference in difference effect of each intervention on teachers' mindsets using a customized measurement tool for teacher mindset and student perceptions of effective teaching among teachers who participate in the two interventions. We analyze classroom actions using classroom observational data collected through blinded analysis by expert observers from local contexts. Finally, to provide feedback for future TACL intervention designs, we apply grounded theory to qualitative interview data from coaches and teachers to generate hypotheses on under what conditions do our teachers and teacher coaches develop their mindsets and instructional practices.

Overall, we find that teachers' mindsets are highly aligned to Teaching as Collective Leadership even before engaging in the study. We are encouraged that there seem to be positive shifts in the mindsets of teachers, which are likely driven by higher levels of exposure to the framework and more regular reflection with their coaches. Teachers in both treatment and comparison groups are engaging in several instructional strategies that foster student and teacher peer relationships. Where we see teachers engaging in many strategies to build relationships and demonstrate care and empathy with students, we observe fewer indications from the data that teachers are engaging in student-led instructional strategies in the classrooms.

Additional research is recommended to explore if more time to learn about the TACL framework before applying it to classrooms would yield more substantive impacts on teacher mindsets. We also recommend extending the research to explore how the development of mindsets and new strategies affect student leadership outcomes - like student well-being, connectedness, agency, awareness, and mastery.

*Our study investigates to what extent teachers develop mindsets aligned with collective leadership, and what kinds of classroom strategies they engage in as a result of exposure to the Teaching As Collective Leadership model.*

# Teaching as Collective Leadership

## Developing Teacher Mindset and Supporting Classroom Strategies Through Coaching

Teach For All's Global Learning Lab developed the Teaching as Collective Leadership (TACL) framework as an actionable and locally customizable framework. It's designed to assist teachers, teacher coaches and program designers to grow students as leaders of a better future. Collectively co-created by educators, students, program staff, and experts from across and beyond the Teach For All network, the framework is built from crowd-sourced studies of transformational classrooms and the frontiers of education research. (Teach For All Global Learning Lab, 2022)

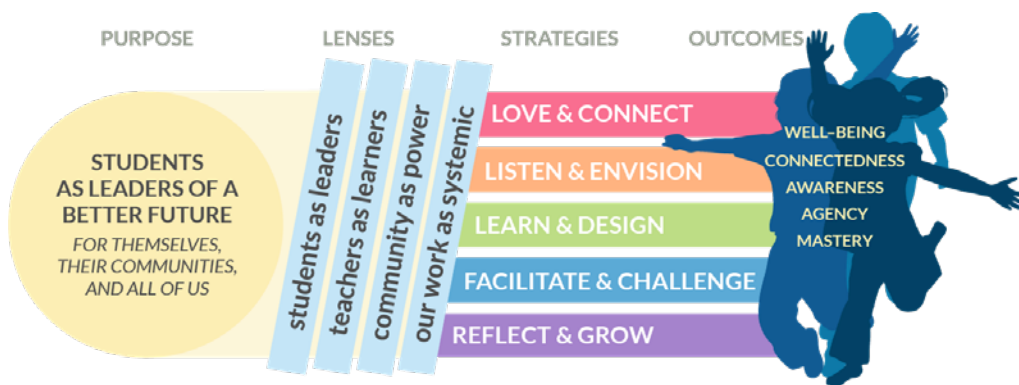


Figure 1. The TACL Framework.

TACL emphasizes that a purpose of education is to develop students as leaders of a better future, for themselves, their communities, and all of us. In addition to emphasizing student foundational skills, the framework breaks with current paradigms of education designed to achieve narrowly defined academic goals for students, and an education that is often dismissive of the critical importance of strong relationships between students and teachers, student-centered learning, student input and leadership in their education, and community values and identities in education.

Teaching as Collective Leadership suggests a theory of adult learning by which new and struggling teachers can develop “lenses” relating to teachers’ ways of “making meaning” of their students, themselves, their communities, and their work that motivate and shape daily actions. These lenses then lead to collectively generating knowledge that transforms into new practices and strategies of teachers. In the TACL terminology, lenses are conceptually defined as how teachers “see” their students, themselves, their communities, and their challenges in ways that are different from conventional perspectives that affect how a teacher views the purpose of their work and affects how they approach their work to develop collective leadership.

Measurable components of these lenses include mindset shifts about this concept as well as observable indicators related to foundational actions. We best grow these lenses and skills through learning experiences that are collective, constructive, holistic, iterative, and relevant. Whenever we refer to mindsets in this report, this is always about the Lenses; whenever we refer to foundational strategies (or strategies in short), this always refers to the strategies in the context of these Lenses and the TACL Framework more broadly. The figure in next page (figure 2) provides a more thorough description of the lenses:

*Teaching as Collective Leadership suggests a theory of adult learning by which new and struggling teachers can develop “lenses” relating to teachers’ ways of “making meaning” of their students, themselves, their communities, and their work that motivate and shape daily actions.*

| STUDENTS AS LEADERS                                                                                                                                                                                                                     | TEACHERS AS LEARNERS                                                                                                                                                                                                                                        | COMMUNITY AS POWER                                                                                                                                                                                                                                                                   | OUR WORK AS SYSTEMIC                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>We see our students as whole and intelligent people who are capable of shaping their own lives and the world around them</p> <p><i>...instead of as passive “vessels” to be filled with my and others’ knowledge and skills.</i></p> | <p>We see ourselves as lifelong learners who respond to challenges with curiosity, humility, and creativity</p> <p><i>...instead of as I see myself as the source of knowledge and skill that students need and as the implementer of “what works.”</i></p> | <p>We see communities as sources of power and wisdom and recognize that lasting change requires authentic partnership with students, families, and other educators</p> <p><i>...instead of as I see my community as a place with difficult challenges and unaddressed needs.</i></p> | <p>We see our work as challenging the root causes of injustices that inhibit students’ potential—systemic barriers around us and limiting beliefs inside us</p> <p><i>...instead of as I see my role as getting students to work extra hard to overcome their deficits to succeed in the system around them.</i></p> |

Figure 2. The TACL lenses.

Teach For All has engaged independent researchers in several measurement and research projects in the past to understand the effects of the two-year leadership development fellowship on the mindsets and lenses of teachers. Previous research on the Teach For All network has focused on the effect of participating in the two-year leadership development program and its impact on teacher mindsets and beliefs that persist in the later lives and careers of Teach For All alumni. For instance, a Harvard University study found that Teach For America (TFA) strengthened teachers’ convictions that children from low-income backgrounds can compete academically with children from more affluent backgrounds. In another study from Teach For America, Mo and Conn (2018) found that participating in TFA caused teachers to adopt beliefs and mindsets that systemic injustice is one of the primary factors that leads to differences in educational and other social outcomes.

In addition to lenses, our study also describes strategies that teachers use that are prevalent in classrooms after exposure to the TACL intervention. These strategies are based on observations of classrooms, insights, and learning by the Global Learning Lab and are emerging hypotheses of what actions are critical to develop student leadership.

|                                                           |                                                                                                                                                                                                                                             |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LOVE &amp; CONNECT</b><br>to build culture             | Caring and authentic relationships foster the trust, understanding, and honesty necessary for my students, their families, my colleagues, and me to work together toward meaningful aims.                                                   |
| <b>LISTEN &amp; ENVISION</b><br>to co-create purpose      | Perfecting current ways of learning and teaching will not fulfill my students’ potential as leaders of a better future, so we collectively question and reimagine the purpose of our classroom, building sustainable coalitions for change. |
| <b>LEARN &amp; DESIGN</b><br>to plan learning experiences | Careful planning ensures that learning experiences are aligned with our vision, meet the needs of all students, and are aligned with how we best learn.                                                                                     |
| <b>FACILITATE &amp; CHALLENGE</b><br>to inspire learning  | Our classroom creates opportunities for students (and me) to joyfully and productively struggle with rigorous challenges and content at the frontiers of our knowledge and abilities.                                                       |
| <b>REFLECT &amp; GROW</b><br>to fulfill potential         | Learning is a life-long journey fueled by humility and curiosity, as we improve our knowledge and skills and grow our capacity for understanding ourselves, each other, and the world.                                                      |

Figure 3. The TACL strategies.

In the Teach For All network, teachers work closely with a teacher coach to reflect on their lenses and strategies in the classroom. Teacher coaches are program staff from Teach For All network partner organizations who provide leadership development coaching to teachers. Coaches are skilled in teaching. They are typically alumni of Teach For All network partner programs and are able to build trusting relationships with their teachers. There is extensive literature that supports the importance of teacher mentorship and coaching. A 2018 meta-analysis of 60 causal studies found that the difference in effectiveness between teachers with instructional coaches and those without was equivalent to the difference between novice teachers and teachers with five to 10 years of experience ([Kraft and Blazar, 2018](#))

## SECTION

## 2

## Study Motivation

### From Beta-Testing to Programmatic Improvement Research of the TACL Framework

Teach For All's Research and Evaluation Team is piloting lean, agile, and adaptive research approaches to enable Teach For All's global network to generate the evidence and feedback for ongoing improvement of the new Teaching as Collective Leadership framework, and to test its efficacy through various research methods.

Our primary motivation is to learn more about how we can accelerate the leadership development of teachers, and to provide feedback and evidence to TACL on what is working and what can be improved to support the cultivation of collective leadership. In future research phases, we hope to explore the linkage between leadership competencies such as lenses and foundational teacher actions that have impacts on student outcomes.

Last November, we organized beta-testing of key resources of the Teaching as Collective Leadership framework to get concrete user feedback from teachers and teacher coaches on their experiences using new reflective tools for new and novice teachers.

This study represents evidence from a scaled pilot of the following resources:

- [A map of “foundational actions”](#): that provides two to three concrete, observable, actionable techniques for each of the 10 “foundational” actions in the TACL model for new and struggling teachers and their coaches.
- [A teacher coach's observation tool](#): a one-pager that guides a coach's observations in a classroom and their debrief after an observation, and that connects to “foundational moves” that might be helpful to the teacher.
- [A teacher's self-reflection tool](#): a resource that a teacher uses to identify strength and growth areas, and that connects to “foundational actions” that might be helpful to the teacher.

The purpose of this initial study of Teaching as Collective Leadership is two-fold:

1. **Provide actionable insights and feedback** on the design of Teaching as Collective Leadership resources and interventions with teacher coaches and teachers to guide improvements to research.
2. **Assess how we can best deliver the TACL model** to teacher-coaches and teachers in order to support teachers to adopt TACL- oriented lenses and practices. This will inform the global organization's TACL partner support strategy and produce evidence that TACL can have effects on developing teacher leadership.

*The learning questions that emerged from this constructive process focused on better understanding how we can measure lenses, and what types of interventions might be able to develop teachers' lenses and strategies in the classroom.*

In this spirit of learning and testing, Teach For All's research team worked with the TACL team to develop a learning agenda to support the testing and ongoing adaptation of the framework. The learning questions that emerged from this constructive process focused on better understanding how we can measure lenses, and what types of interventions might be able to develop teachers' lenses and strategies in the classroom. The learning questions are:

- **Shifts in teachers' lenses and foundational actions:** Did teachers change their lenses and/or foundational actions during their time in the study? If so, what are these changes? Were there any differences in teacher mindsets and teacher actions between intervention groups?
- **Student perceptions:** How do students perceive their teachers' lenses and actions? Are there differences in student perceptions across intervention groups?
- **Enabling Conditions:** What factors are leading teachers to make these changes and what role did the TACL framework and resources contribute to these changes? What can we learn about how to best deliver TACL so that lenses and teacher actions may shift with greater magnitude to support student leadership development?

## SECTION

### 3 Intervention Design, Recruitment, and Execution

In December 2021, working with the Teaching as Collective Leadership team, we decided to focus on building coaches' and teachers' knowledge simultaneously through synchronistic learning experiences and through workshops with other teachers and coaches, on-the-ground implementation and beta-testing of key resources to support teacher development in classrooms, and through ongoing reflection between teacher coaches and teachers on their development. This stems from insights and evidence that the teacher coach plays a vital role in the collective leadership development of teachers.

In January 2022, we set out to design two different types of coach and teacher learning experiences based on some of the most common ways Teach For All and network partners engage in professional development and learning. We designed one intervention (treatment group) that consisted of a cohort-based learning approach with three scheduled workshops over the course of six weeks. Each workshop would require coaches and two of their teachers to attend to learn more about the TACL model, engage in reading and reflecting on resources from TACL, and then provide feedback on how using TACL and its resources supported them in their work in their classrooms. The figure below demonstrates the overall design of the treatment group.



Figure 4. Intervention Design for treatment group.

The team also designed a second intervention for a different set of teachers and coaches to emulate the experience of accessing the TACL framework and resources from the on-line Global Learning Lab website. Instead of providing an opportunity for teachers and coaches to attend workshops organized by Teach For All with opportunities with peer learning, our team designed a guidebook that provided access to key TACL resources and instructions for how to use them in their classrooms. This intervention intends to emulate a comparison group or the status quo that any teacher and/or coach in the Teach For All network can access publicly available resources without more intentional support to these teachers and coaches.

Our intention was to randomly assign coaches who shared interest to partake in the Global Teacher and Teacher Coach Study to one of the two interventions to test key differences in teacher lenses and teacher strategies. To recruit these coaches and teachers, the research team organized an informational call for all interested teacher coaches after sharing an advertisement through our global network's newsletters and email communications. The informational session covered the goals of the study, the learning questions we were exploring, and the contributions of teacher coaches and their teachers. We then provided each attendee with consent forms to participate in the study and additional consent forms for their teachers. Coaches and teacher pairs who both submitted consent forms to Teach For All were recruited onto the study. All coaches worked with a unique set of teachers so there was no overlap among teachers with other coaches.

## SECTION

# 4

## Research Methodology

### Quantitative and Qualitative

The Global Teacher and Teacher Coach Study uses a mixed methods approach to answer the three learning questions around the Teaching as Collective Leadership framework in the classroom, by collecting both qualitative and quantitative data from our recruited sample teachers and coaches. We employ a rapid randomized assignment to the intervention group and treatment group to explore shifts in teachers' lenses over time and between comparison groups. We measure these shifts in mindsets using a customized measurement tool for teacher mindset and student perceptions of effective teaching among teachers who participate in these two interventions. We apply a difference in difference model and multivariate regression modeling to determine the effects of the intervention delivery assignment on teacher mindsets. For teacher strategies, we engage in monitoring classroom observations of lessons provided by the coach and teachers through an external review and qualitative analysis process. We analyze classroom actions using classroom observational data using blinded analysis by expert observers from local contexts. We provide descriptive and narrative information about trends in teacher actions across the study sample and note key descriptive differences between intervention groups.

*We measured the shifts in mindsets using a customized measurement tool for teacher mindset and student perceptions of effective teaching among teachers who participate in the interventions.*

For the first major research question, Does the TACL framework lead teachers to develop new mindsets regarding leadership development?, we use a contextualized teacher's survey collecting self-perception data from both treatment and control group teachers. The data collection for teacher mindsets occurred before the beginning of the intervention and again in the fourth week of the trial period through an online self-perception survey aligned to TACL lenses (read more in Section 6). We structured the survey and all data from teachers such that their identities are fully anonymous from the Teach For All research team, both to protect the identities of our study participants and to mitigate social desirability bias in responses. We employ regression analysis, holding teacher characteris-

tics and clustering at the coach level to assess the average growth in mindset scores from the teachers' mindset survey using a difference in difference model.

In regards to measuring and monitoring teacher actions, the Teach For All research team developed a qualitative teacher observation tool and system for monitoring at least one video observation of all 48 participating teachers' classrooms. For this data collection, we took into account different modalities of instruction and safety protocols put into place due to the ongoing Covid-19 pandemic, enabling observation of both virtual and presential learning. Before conducting video observations, teacher coaches worked with their participating teachers to get parental/guardian consent for their students to partake in the video recorded lesson. Upon receiving classroom-wide consent, the teacher coach or, in some cases, the teacher recorded a 30-45 minute lesson.

The teacher coach then submitted this video recording to Teach For All for review and scoring. Teach For All simultaneously hired and trained external expert teacher coaches with familiarity with the local context to observe these video recordings and score the lessons using a standard rubric. They received training from Teach For All and expert consultant and researcher Dr. Ariel Lindorff from the Oxford University Department of Education on how to securely use the video observation data and how to score the observations. We formed panels of observers who then agreed to a final summary of the classroom observation among at least two other observers and then submitted the findings back to Teach For All. These external reviewers were not aware of the teacher's treatment status. Dr. Ariel Lindorff then conducted an open-ended thematic analysis of the various qualitative responses about teacher actions aligned to the TACL foundational actions and framework. The researcher was first blinded to intervention group status during the first thematic analysis, and then later provided intervention group status to comment on key differences in groupings of teachers.

This study triangulates self-reported student perceptions of teachers using a TACL-aligned Student Survey, inspired by the Bill and Melinda Gates Foundation Measures of Effective Teaching project (see [Section 5](#). Instrument Development and Psychometric Analysis for more details). This survey investigates student perceptions of both teacher mindsets and teacher actions to answer the question about how students perceive their teachers in creating environments and opportunities that are conducive to developing student leadership. We gathered aggregated classroom-level, anonymous student perception data during the fourth week of the intervention from each teacher's classroom. The instrument used for the data collection is an adapted version of the widely used Student Perceptions survey in the Teach For All network. The student survey was administered using pen and paper and some online forms.

For the qualitative approach, the research team conducted key informant interviews using a semi-structured protocol to capture the experience of teacher coaches and teachers in the TACL study, including where they needed more support. The interviews provided contextual background to complement the quantitative findings (the teacher mindset surveys and the student perception surveys) on study implementation, challenges and solutions, perceptions of the program's impact, and prospects for sustainability. Finally, we apply grounded theory to qualitative interview data from coaches and teachers to generate hypotheses on under what conditions do our teachers and teacher coaches develop their mindsets and instructional practices to provide feedback for future TACL intervention designs.

*This survey investigates student perceptions of both teacher mindsets and teacher actions to answer the question about how students perceive their teachers in creating environments and opportunities that are conducive to developing student leadership.*

## 5 Instrument Development and Psychometric Analysis

The research instruments and measurement tools are built specifically to answer the key learning questions for the study. To answer the shifts in teacher mindsets with respect to the TACL Framework lenses (see [Section 1](#)), two survey instruments were developed to capture these mindset shifts from two different perspectives: 1) from the individual, through the Teacher Mindset Survey (TMS) and 2) from the perspective of the teacher's students, through the Student Perception Survey (SPS).

These survey instruments capture self-reported (in the case of the TMS) and observer-reported (in the case of the SPS) affirmations aligned to the TACL framework lenses and, for the SPS, focusing only on observable attributes of the teacher's mindset related to the TACL lenses. An additional component aligned to their teacher's foundational actions is also included for the SPS tool. The format of both instruments is a Likert-type scale, which is well-established and common across the research community, especially in the social sciences (Edmondson, 2005).

The instrument design followed a systematic process based on well-established best practices (see for example, De Vaus & de Vaus, 2013; Kaplan, 2004). As with all measurement tool design in the social sciences, the starting point was the research constructs of interest, which in this case are based on the TACL Framework. Mindsets refer to generic concepts of people's beliefs or assumptions about human (or psychological) attributes that can involve a variety of constructs—for example the malleability of one's own abilities (i.e., fixed vs growth mindset; Dweck, 2006) or the belief in one's ability to make the best of one's situation (i.e., positive mindset; Crum et al., 2011). For our purposes, we can broadly define our main construct of interest ("lenses and foundational actions") as the teachers' ways of "making meaning" of their students, themselves, their communities, and their work that motivate and shape daily actions. In this study, we therefore focus on mindsets related to the lenses and foundational actions as defined in the TACL Framework (see [Section 1](#) for more details on TACL), which itself is built from co-discovered global patterns in our network's vast living laboratory and co-created through collaborative, network-wide studies of transformational classrooms.

The instruments consist of a battery of items in the form of statements that the respondents affirm using a rating scale. These statements were formulated to map with the framework's target constructs and how these constructs are affirmed by the respondents. For the SPS, the battery of items was supplemented by items aligned with the constructs linked with effective teaching and teacher leadership at the classroom level (see the [Measures of Effective Teaching \(MET\)](#) study funded by the Bill & Melinda Gates Foundation). The MET study finds these constructs to be correlated with positive observable behaviors such as engagement and student conduct (Ferguson et al., 2014).

Because psychological constructs are susceptible to certain biases (e.g., acquiescence and social desirability bias) that are long-known in the research literature (e.g., Cronbach, 1942), certain measurement checks were incorporated into the design to mitigate these. One is the inclusion of reverse-coded statements as a semantic-check and to counteract acquiescence bias (also known as "yes-saying" bias; Cronbach, 1942). The other is to employ sources of data that are independent (i.e., the respondents are different but responding to the same or related constructs as a check for each other).

To obtain empirical evidence on whether the instruments are functioning as intended, we also conducted psychometric analysis on the response data using well-established statistical best practices (Kaplan, 2004). The psychometric analysis confirmed that the instruments are measuring the constructs in an internally consistent manner. Internal consistency is a measure of instrument reliability and is an established metric in the research community (Streiner, 2003). In addition, the vast majority of the items are all correlated with each other, including those that are reverse-coded, providing empirical evidence that the bias-mitigation approaches are working as designed.

The psychometric analysis also allowed for an independent review of the few items flagged for statistical reasons. This qualitative review complemented the quantitative analysis in informing the decision to drop items that do not contribute to the measurement purposes of the instruments as a whole. The final set of items after this review showed an increase in internal consistency for both the TMS and SPS tools.

The TMS and SPS weakly correlate with each other, confirming the utility of independent data sources but also providing supporting evidence that self-perceptions are often not aligned perfectly with observer-perceptions. The two components of the SPS (perceived teacher mindsets and actions), however, are strongly correlated. This provides support that from an independent observer's perspective (or perception), one's mindset and actions are closely linked.

Studies using self-reported mindsets in education research include: [Scott and Ghinea \(2014\)](#), [Orosz et al. \(2017\)](#), [Hanson et al. \(2016\)](#), [Huang et al. \(2012\)](#)

## SECTION

# 6 Study Sample Description

In late February, after initial recruitment of teacher coaches, we randomly assigned 26 coaches to one of two intervention groups, a treatment group where we delivered TACL through a series of workshops and guided exercises, and another group where teachers and their coaches received only an online guidebook for how to use TACL in their practice as teachers and teacher coaches. Over the course of the early weeks of the intervention, two of the coaches voluntarily dropped from the study.

Our final study sample consisted of 48 different teachers and 24 coaches from nine different countries<sup>1</sup>. Of the 48 teachers, their average age is 27 years old, and they have approximately two years of prior teaching experience. The teachers taught a wide range of grade levels—between 2nd grade and 12th grade—with the most frequent grades taught being between the equivalent of 4th and 7th grades. Twenty-three of the 48 teachers (48%) are female. Overall, we find that teacher assignment is well balanced across most teacher characteristics, with the exception of gender—whereby the proportion of female teachers in the intervention group is 54% and only 41% in the comparison group.

|                              | High Touch Intervention | Comparison Group | Difference |
|------------------------------|-------------------------|------------------|------------|
| Age                          | 26                      | 27               | 0.280      |
|                              | (3.183)                 | (2.849)          | (0.750)    |
| Years of Teaching Experience | 2                       | 2                | 0.212      |
|                              | (2.562)                 | (1.854)          | (0.742)    |
| Grade Level Assignment       | 6                       | 6                | -0.430     |
|                              | (2.257)                 | (2.002)          | (0.488)    |
| Female                       | 41%                     | 54%              | 0.129      |
|                              | (0.503)                 | (0.508)          | (0.382)    |
| Teacher Mindset Baseline     | 4.215                   | 4.198            | -0.017     |
|                              | (0.317)                 | (0.339)          | (0.866)    |
| Observations                 | 22                      | 26               | 48         |

Table 1. Balance table of covariates by intervention group.

<sup>1</sup> The final participating partners include Teach For Nigeria, Teach For Zimbabwe, Enseña por México, Teach For Sierra Leone, Teach For Ethiopia, Teach For Qatar, Teach For Pakistan, Teach For Cambodia, and Teach For Vietnam. Coaches and teachers from Teach For Uganda and Teach For Ukraine voluntarily left the study, and so their data are excluded from this analysis.

Of the 25 coaches who completed their registration and consented to the study, 13 were randomly assigned to Intervention Group 1, and 13 coaches (26 teachers) to the comparison group. One of the coaches in the comparison group voluntarily dropped out of the study, leaving 12 coaches and 24 teachers in the comparison. On the following page we present the balance equivalence of key teacher characteristics between teachers in Intervention 1 and Intervention 2. There is a statistically significant difference in the proportion of teachers who are female between the intervention groups—54% of teachers in Intervention Group 1 are female while only 41% of teachers in the comparison are female. All other characteristics have no statistically significant differences (age, years of experience, grade-level distribution).

*Among the original sample of 25 coaches who signed up, 1 coach from Teach For Ukraine and another coach from Teach For Uganda had to drop out of the study after baseline data collection, leaving our final analytical sample of coaches at 23 and teachers at 46 teachers at endline.*

Note that among the original sample of 25 coaches who initially signed up in mid-February, one coach from Teach For Ukraine and another coach from Teach For Uganda had to drop out of the study after baseline data collection, leaving our final analytical sample of coaches at 23 and teachers at 46 teachers at endline. Over the course of the study, the research team provided a few extensions to the overall timeline to provide additional time for all individuals in both intervention group and treatment group to apply the tools and collect data from teachers and their classrooms.

## Student sample

We received over 1000 anonymous student responses from which we randomly selected a total of 660 unique student responses to our SPS survey to analyze. We chose to randomly select 660 student responses among all of the different participating teacher sample in order to decrease the logistical and cost burden for data entry. We opt to use the Student Perception Survey as an indication of classroom environment and a valuable perception of a teacher's classroom actions and their mindsets.

## Qualitative sample

For the key informant interviews (KIIs), the research team used a semi-structured protocol to capture the experience of teacher coaches and teachers in the TACL study, including where they needed more support (see the Appendix for the protocols). The interviews provided contextual background to complement the quantitative findings (the teacher mindset surveys and the student perception surveys) on study implementation, challenges and solutions, perceptions of the program's impact, and prospects for sustainability. Table 2 in next page lists the topics covered in the KIIs.

|                 | Organization        |                        |
|-----------------|---------------------|------------------------|
|                 | Intervention 1      | Intervention 2         |
| Teacher Coaches | Teach for Qatar     | Teach for Vietnam      |
|                 | Teach for Vietnam*  | Teach for Pakistan     |
|                 | Teach for Cambodia* | Teach for Nigeria*     |
|                 | Teach for Nigeria   | Teach for Nigeria*     |
|                 | Teach for Pakistan  | Enseña por México*     |
| Teachers        | Teach for Vietnam*  | Teach for Sierra Leone |
|                 | Teach for Nigeria   | Teach for Ethiopia     |
|                 | Teach for Nigeria   | Teach for Nigeria*     |
|                 | Teach for Zimbabwe  | Teach for Nigeria*     |
|                 | Teach for Cambodia* | Enseña por México*     |

\* Indicates both the teacher coach and paired teacher were interviewed.

*Table 2. Key informant interview sample by Teach For All Network partner organizations.*

For the qualitative data collection, we selected a total of 20 teacher coaches and teachers—10 each from interventions 1 and 2—that reflected the diversity of the TACL study. For the teacher coaches, we chose five men and five women representing six organizations. The teacher coaches range in age from 25-40, and their teaching experience ranges from less than one year to eight years. For the teachers, we chose six women and four men representing eight organizations. They range in age from 23-35, and their teaching experience ranges from less than one year to 12 years. They teach a variety of grade levels (from grade 4 to grade 12) and subjects (including english, history, math, and science). Table 2 (previous page) shows the final KII sample.

## SECTION

## 7

# Learning Question 1: Shifts in Teacher Mindsets and Actions

**Shifts in teachers' lenses and foundational actions:** *Did teachers change their lenses and/or foundational actions during their time in the study? If so, what are these changes? Were there any differences in teacher mindsets and teacher actions between intervention groups?*

There were already high levels of statistical differences between the baseline levels of teacher mindsets, suggesting that the groups were well balanced before the intervention. Overall, both groups tended to score highly on the overall mindsets questions, suggesting that teachers may have already had strong alignment with the TACL lenses. In our study, we cannot rule out that self-selection of coaches and teachers may have contributed to high levels of mindsets prior to the intervention as well.

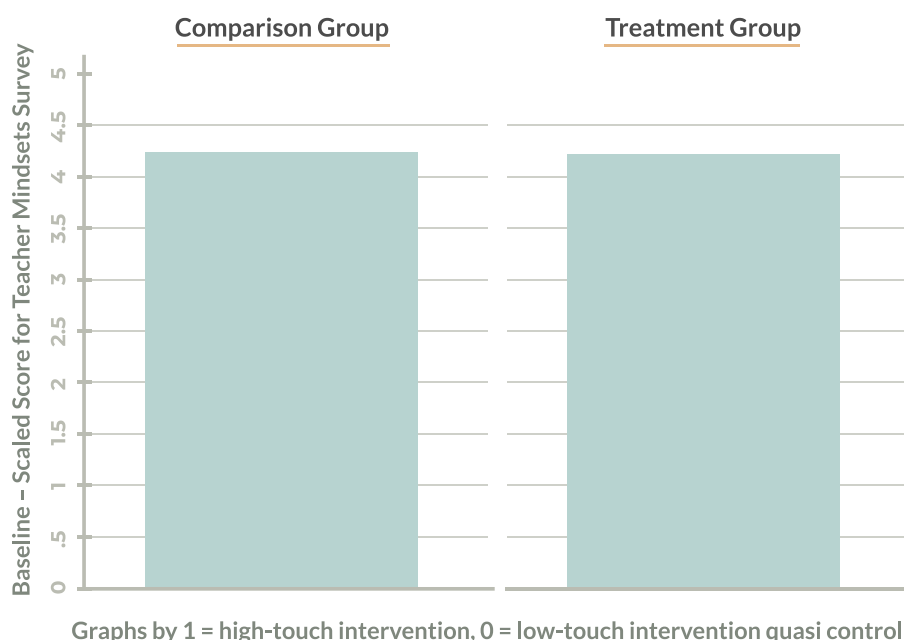


Figure 5. Baseline scaled scores on the Teacher Mindsets Survey.

We first analyze the descriptive statistics of the second round of the Teacher Mindsets Survey. We notice that there are some small, positive differences between the Teacher Mindsets scaled score in Intervention Group 1 over time compared to the comparison group's differences. Some trends that are emerging are that listening to student and

community voices in the education of their students seems to be highly positive across intervention groups. One potential area of improvement are mindsets related to fostering student dialogue in the classroom and soliciting student opinions, which we confirm again in the student perceptions results in the proceeding section. Overall, higher levels of agreement are seen for mindsets related to teaching effectiveness and actions (e.g.,: listening to students' opinions or developing expertise in the subjects they are teaching). Teacher mindsets were comparatively lower for students as leaders (e.g.,: seeing students as whole and intelligent people) or community as power and their work as systemic (e.g.,: thinking it is their responsibility to change the system or that partnership with parents and community is important).

| Teacher Mindsets scaled score | High Touch Intervention | Comparison Group | Difference |
|-------------------------------|-------------------------|------------------|------------|
| Baseline                      | 4.287                   | 4.319            | (-0.032)   |
| Endline                       | 4.355                   | 4.303            | (0.052)    |
| Difference                    | (0.068)                 | (-0.016)         |            |

Table 3. Baseline and endline teacher mindsets scores scaled differences between intervention and comparison group.

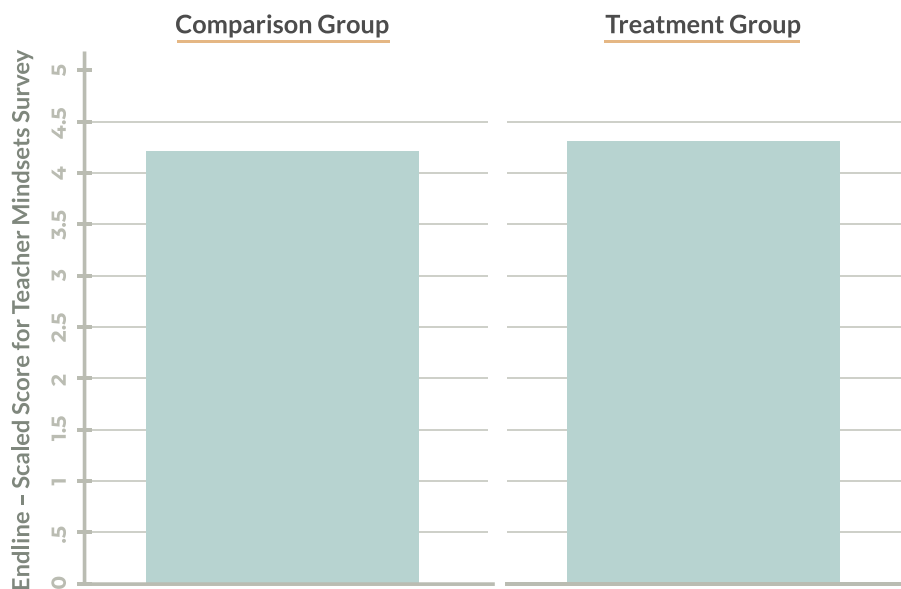


Figure 6. Endline scaled scores on the Teacher Mindsets Survey.

We find that there is some indication that there are some positive trends in mindsets development for those teachers who engaged in the first intervention group compared to the control. Figure 7 in next page demonstrates a positive improvement in mindsets of teachers assigned to the higher-touch intervention for TACL, though this simple difference in difference model is not statistically significant. When modeling the difference in difference using regression analysis and holding teacher characteristics (gender, age, years of experience, grade level assignment) constant, we notice that there is a weak but positive impact on teacher mindsets of participating in the higher touch intervention compared to the comparison group. Though there is positive direction of mindsets, it is still a small effect (roughly 0.11 point increases from a scale of 0 to 5)<sup>2,3</sup>.

<sup>2</sup> We find that teachers' gender, age, grade level, and years of experience do not have significant predictive power of teachers' mindsets.

<sup>3</sup> Regression tables available in the Appendix.

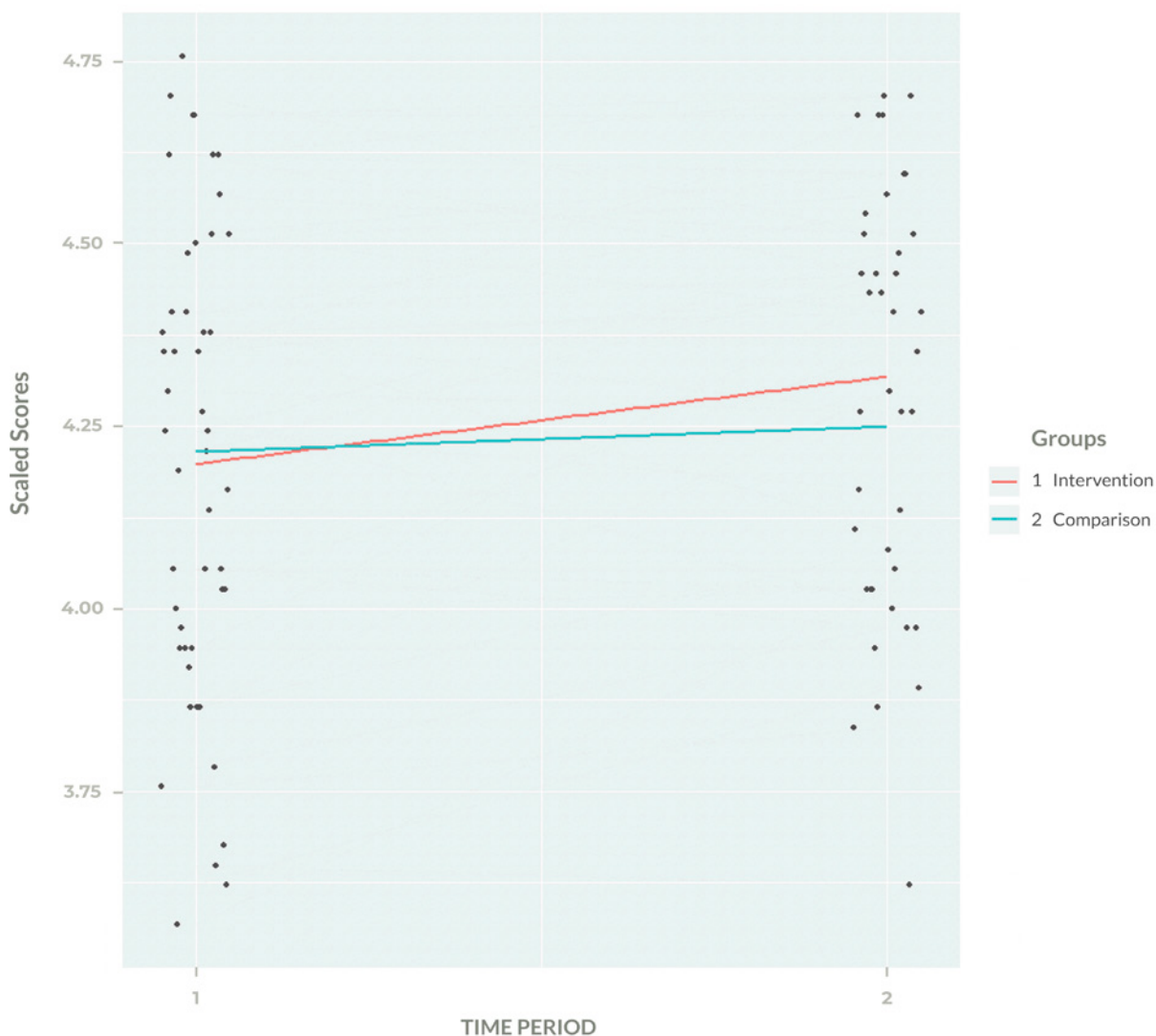


Figure 7. Endline scaled scores on the Teacher Mindsets Survey.

## SECTION

# 8 Learning Question 2: Student Perceptions of Teaching

**Student perceptions:** How do students perceive their teachers' lenses and actions?? Are there differences in student perceptions across intervention groups?

## Student Perceptions of Mindsets

Students provided perspectives on their teachers' mindsets. We analyze whether there are differences in students' perceptions of the teachers' mindsets and their teachers' actions aligned with the TACL framework. Our survey had two different scales of items—some analyzing student perceptions of key actions, like “The teacher asks students to explain more about their answer,” and another group about their mindsets, like “My teacher does not seek our feedback to improve the lessons.” Overall, we find a higher students' score of their teachers around their actions as compared to their mindsets. This is across both intervention and comparison groups, and there is no statistically significant differences between these groups.

*We analyzed whether there are differences in student perceptions of teacher mindsets and teacher actions aligned with the TACL framework.*

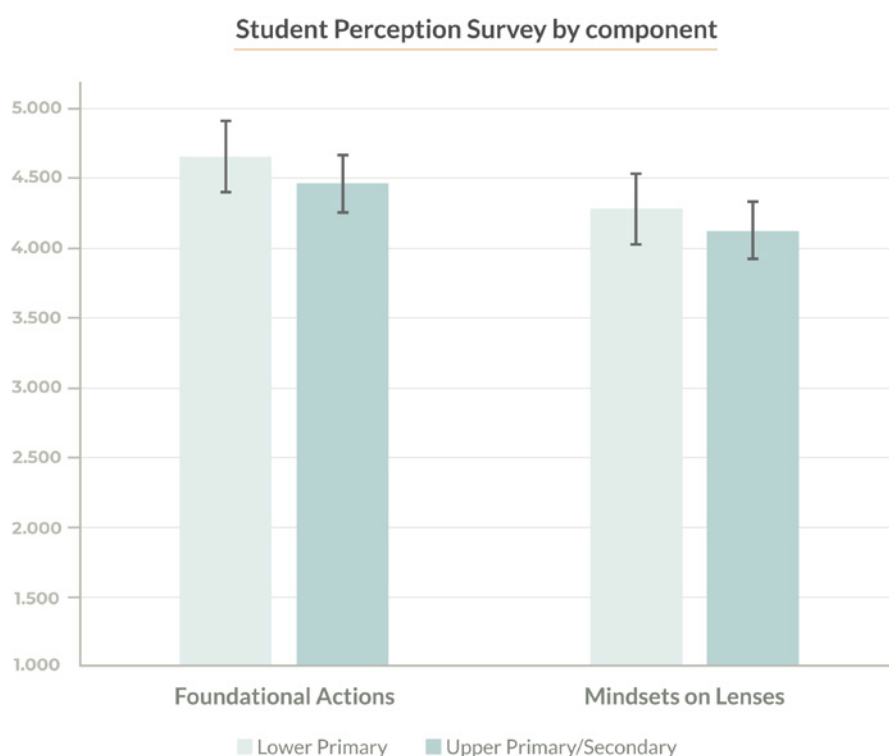


Figure 8. Student Perception Survey Scores by Teachers' Foundational Actions and Mindsets.

## Teacher Actions

Our investigation of teacher actions is based on multiple data sources—observational, teacher, and student perceptions of the teachers' instructional choices. For our sample of observations of classroom lessons, we analyzed 38 available panel assessments (each based on a single lesson from one of the teachers in the sample for the study; 22 teachers were in Group 1 of the intervention, and 16 were in Group 2). Panel assessments were completed using the classroom observation tool designed specifically for the purpose of the present study. The observation rubric aligned to four out of five observable foundational action categories in the TACL framework: Love & Connect, Listen & Envision, Learn & Design, and Facilitate & Challenge (an additional strategy called “Reflect & Grow” is a part of the TACL framework, but it is unobservable during classroom observations). Section 2 includes a description of each of the key strategies.

From the analysis of the observational data, we saw strong descriptions of actions related to “**Love & Connect**” in the vast majority of classrooms observed. There were common patterns in the ways in which teacher-student relationships were described by observers. Teachers across groups demonstrated “respectful, calm, warm, and polite” interactions with students. Teachers interacted with individual students during lessons by “circulating the room,” and approaching students to provide one-on-one help. Students provided feedback through the SPS that also indicated high agreement that teachers were empathetic. For example, students shared high scores in response to the question, “If I am sad or angry, my teacher helps me feel better” and “I like the way my teacher treats me when I need help.” Teachers also rated themselves highly on items in the Teacher Mindsets Survey, like “I take time to nurture authentic connections with students, other teachers, etc.” though they rate themselves less highly on “I try to build relationships with students’ families.”

*There were common patterns in the ways in which teacher-student relationships were described by observers. Teachers across groups demonstrated “respectful, calm, warm, and polite” interactions with students.*

We observed several actions related to **Listen & Envision** and **Learn & Design**, and potentially information that could provide feedback on the extent to which current instructional strategies are truly student-centered. From observations, classroom dialogue was

heavy on teacher-led discussions at a whole-class level, or between the teacher and an individual student. There were relatively few instances of student contributions or students prompting one another, beyond answering teachers' questions. The vast majority of observations demonstrated traditional teacher chalk-and-talk style learning engagement, while students copied in their notes.

Students on the other hand had mixed feedback about their opportunities to engage in dialogue, indicating high agreement with the statement "My teacher encourages us to share our opinions," and slightly lower scores on statements like "Students get to decide how activities are done in this class." Teachers generally rated themselves highly on items like "I invite students to share their opinions during lessons," demonstrating that they perceive themselves to engage in more student-centered strategies than what was observed in the panel descriptions. There were relatively minor differences in actions within this category between the intervention and comparison group.

For **Facilitate & Challenge**, observers and students generally agreed that the teachers' lessons were appropriately challenging students. From observations, there was some mixed evidence of how teachers were seeking contributions from students through questioning, and inviting them to share their perspectives or make choices in their learning. There were some examples of teachers assigning group work for students. Students agreed that their teachers elicited feedback from them on the lesson. Students did mention that teachers often provided the same materials to all students. Teachers generally rated themselves highly in their ability to provide student choice, stating that they agreed that students should "question their teaching" and "question the lesson." One teacher shared the following perspective about how they employed new skills to facilitate and challenge in a subject that they had traditionally struggled to provide strong lessons:

*There are major changes in my teaching practices, taking into account student feedback and tips. In my history class, I still struggle with teaching the content in a creative way. Today I gave the task of imagining a conversation between two historical figures, and gave the students the choice of how to do this—acting out, comic, writing a story, depending on their preferred learning methods. Maybe I would have gotten there with time, but not as fast without TACL. –Teacher*

Overall, we don't find major differences in the actions taken by teachers in either group, and rather demonstrate evidence of what actions might be most prevalent in the teachers' classrooms from this study. In discussions with the Teaching as Collective Leadership team, we've discussed the overall importance of ensuring that actions are not done in isolation—for example, only engaging in actions related to Love & Connect and not the other strategies is not as effective as having a combination of these actions. Further research and work could explore how to support teachers to engage in a holistic set of actions that cultivate student leadership.

## 9 Learning Question 3: Enabling Factors

**Enabling conditions:** *What factors are leading teachers to make the changes in their mindsets and actions, and what role did the TACL framework and resources contribute to these changes? What can we learn about how to best deliver TACL so that lenses and teacher actions may shift with greater magnitude to support student leadership development?*

As described earlier in Section 8, teacher mindsets were already aligned to the core principles of the TACL framework, so this combined with the short study timeframe makes it difficult to assess the factors that led teachers to make changes in their mindsets and actions. However, from the qualitative data, clear patterns emerged to show facilitators in TACL delivery. Primarily, strong and supportive teacher coaches, an enabling school environment and surrounding community, and proactive engagement with school leadership and the community appear to be factors that contributed toward successful adoption of TACL.

### Strong and supportive teacher coaches

Many teachers said that their coaches were instrumental in getting them to both understand the TACL framework and apply it in their classrooms. The comments from teachers regarding their teacher coaches leads us to conclude that it is critical to ensure that coaches fully understand the TACL framework and tools in advance of working with their teachers.

*I found the handbook hard to understand at first, but I have a very helpful teacher coach who guided me through how to use the tools. We even sat down and used the teacher self-reflection tool together, and that kind of support is sufficient. I think I need to highlight the role of the teacher coach, because without her help, I would have struggled. –Teacher*

*My coach is the major strength, source of guidance through this study, he takes the time to make sure I understand the concepts. My coach visited weekly, which has been so helpful. Through observing and documenting my teaching and doing the debrief with me, my coach was able to pinpoint things that I wouldn't have realized on my own. I have reflected on my work before, but not like this, and not with this level of guidance. A recommendation is ensuring that there are strong, supportive coaches for the teachers. –Teacher*

### Enabling school environment and surrounding community

Our qualitative data shows that teachers' host organizations played a large role in the rollout of TACL. Those who received a positive reception from the principal/head teacher and the school community, as well as support from the local community, reported greater success in changing their actions in the classroom. Alternatively, several teachers/teacher coaches reported struggling with implementing the TACL framework in more traditional environments that emphasized rote learning and that have not established holistic student outcomes.

*The principal and the teachers are in agreement with the theory behind TACL, that is, are supportive of encouraging more agency with their students. I can see where this framework might be difficult in another environment. –Teacher Coach*

*If you have a supportive school that's great, but I know in some classrooms or schools it's hard, it depends on the community. I'm lucky to have a supportive school and supportive co-teachers, but I know that is not the case universally, or even across Nigeria. –Teacher*

*I believe in the ideology of the TACL framework, but the system, the old teachers, some of them don't buy these ideas, it can be very discouraging. –Teacher*

### **Proactive engagement with school leadership and the community**

Some teachers and teacher coaches reported success in proactively engaging with their school leadership and fellow teachers on what they were doing and why as a way to earn buy-in for TACL. While this may not be possible in all situations, an enabling factor for success may be to encourage teacher coaches and teachers to take a proactive approach in getting the community (school leadership and parents) on board by initiating conversations to explain the purpose of their TACL-related work.

*There are challenges in trying to reinvent the wheel, the TACL framework is different from what most people are used to. The flexibility is not there to apply concepts outside of the norm, it takes time to get the go-ahead. My strategy was to engage the mothers' school group. Through them, they were able to get the women in the community engaged, they were able to connect with the chiefs, the religious leaders, and the fathers. Once you get the mothers on board, this can then leverage other community members. –Teacher*

*There's been a lot of pushback. Our teachers are in classes with co-teachers who are traditional and who want the class to be silent. Teachers need to have conversations with their co-teachers about students needing to be able to talk and explain that it's a good noise. I've received pushback from teachers and principals, which I've tried to address by talking to them and explaining why we're doing this model, and asking the principals for more time. –Teacher Coach*

## **SECTION**

## **10 Limitations**

In this section, we disclose some of the limitations of our applied research approach to ensure the proper context for the proceeding claims. As mentioned in our research approach section, our study relies on a mixed methods approach and triangulation of multiple sources of data.

The first limitation for the quantitative methods we use is that our study sample is small (N=46 teachers), thereby most of our quantitative results on teacher mindsets and student perceptions are not sta-

tistically significant, meaning we cannot determine if differences we see are by chance alone. Our intention for the study was to identify potential trends and generate feedback learning about the framework to support the Global Learning Lab to make improvements to the model as it is scaled across the Teach For All network. For this reason, it is important to note that our sample is not fully representative of the Teach For All network. Importantly, over half of the sample of teachers in both intervention groups are from Teach

For Nigeria. Replicating this study with a different composition of teacher coaches and teachers may reveal different results.

We recruited for participants based on their initial interest and availability to partake in the study. Through our qualitative approach, we learned that many of our study participants' motivations for joining the study was to get access to TACL resources early and engage with the insights. Unobservable motivation is likely behind many of our coaches and teachers' decision to join our study. This self-selection may influence the overall effectiveness of the interventions, though motivation should be equally distributed across both intervention groups due to randomized assignment.

In relation to our measurement of mindsets and teacher observations, there may be social desirability bias (Krumpal, 2013) and Hawthorne effects (Payne & Payne, 2004) at play. We are using many self-reported instruments. While the items and scales perform reliably from a psychometric perspective, we cannot rule out that teachers, coaches, and students did not answer what we think that we wanted to hear. The anonymous nature of the data may help to mitigate this bias.

It is important to clarify that this study does not attempt to draw connections with student learning and leadership development. In future research, we would like to analyze to what extent do interventions targeting teacher mindsets and teachers' instructional strategies lead to improvements in student foundational skills and leadership outcomes aligned with the five outcomes families in TACL's framework: student well-being, connectedness, awareness, agency, and mastery. We are currently planning to conduct research of such interventions with one network partner organization.

These limitations help our research team to condition our findings, in particular

from claiming attribution of the TACL model to specific changes we see in teacher mindsets and actions. Our mixed methods approach emphasizes the triangulation of multiple sources of data to support our claims about potential factors that may have contributed to the development of teacher mindsets and actions during the intervention period.

We are further limited to make claims of attribution because our study is unable to have a true counterfactual of teachers and/or coaches who have no exposure to the TACL framework. In January 2022, the TACL framework had a soft launch within the Teach For All network, and resources were made available publicly on the Global Learning Lab website. The research team decided to develop instead a pseudo-comparison with a lower intensity of exposure of TACL to compare our findings against.

For the qualitative data, collection relied on real-time note taking, as there were no recordings or transcripts of the interviews due to time and resource constraints. The data collection period limited responses to those who replied quickly to the request. Several teachers did not participate as the data collection period overlapped with Ramadan.

Finally, as with all qualitative data, the responses are illustrative and not necessarily representative given the small sample size, and we are reliant on self-reported data, which may be biased toward socially desirable answers.

*It is important to clarify that this study does not attempt to draw connections with student learning and leadership development. In future research, we would like to analyze to what extent do interventions targeting teacher mindsets and teachers' instructional strategies lead to improvements in student foundational skills and leadership outcomes.*

## Discussion on Factors Influencing Teacher Development and Areas for Future Research and Conclusion

The Global Teacher and Teacher Coach Study aimed to investigate first the contributions of Teaching as Collective Leadership resources to the development of mindsets and lenses of teachers. We are encouraged by positive trends in mindsets, despite the fact that teachers' mindsets are already at such high levels prior to intervention. We ascertain that teachers and teacher coaches may have self-selected based on unobservable motivation and alignment with TACL prior to the beginning of the intervention.

To exemplify this, one teacher in our interviews shared that “their vision aligned with TACL, which is why they joined the study.” An emerging learning question from this is whether this is indicative of our sample, or could it be that alignment with these lenses and mindsets are already high across the Teach For All network? Might there be a recruitment effect at play by which teachers are recruited based on demonstrated and self-proclaimed mindsets aligned to values and lenses proffered by TACL? Might it be helpful to better target teachers who may not have the level of enthusiasm and alignment prior to intervention, and how would it be possible to target those fellows? Or is it that we simply do not have the tools available at our disposal to truly measure mindsets, and that these self-reports are overestimated by our teachers? Investigating this question may help TACL better target future interventions and discussions on aspects of the model. Even if mindsets are already high, we do see some indications that teacher mindsets may be positively shifting with increased exposure to the TACL framework. While we cannot say for certain that the additional workshops and exposure caused this small increase in mindsets compared to the comparison group, there are some indications that a more frequent exposure to TACL concepts over time may in fact increase these mindsets.

Many of our teachers and coaches shared that they deeply appreciated and learned from sharing with other teachers and coaches from across the network, in particular those who participated in the treatment group. It is clear from interviews and feedback that coaches and teachers agreed across the board that more time to first understand and internalize the model and make meaning of the framework, and additional time to implement and reflect on the model, would help strengthen shifts in mindsets and actions. We do think this provides a hopeful indication that increased exposure to TACL—for instance over a period longer than a month or potentially an entire academic year—will improve teacher mindsets and hence more effectively develop leadership of teachers to support holistic student development. Future research could test increased exposure to TACL tools and resources and its effects on teacher mindsets over time, and whether the more intense the exposure the more impact on teacher mindsets over time.

This feedback from a teacher coach may be helpful to consider for future implementations:

*The workshop came in handy, but a suggestion—if we could do the first workshop at least a month in advance of implementation, that would have prepared us ahead of time. Not sure what it's like for other teacher coaches, but I had to join the workshops at an inconvenient time, while I was still at school, and then I was trying to get a grasp of the content. It's a training model, and we need to learn first before the implementation. It was difficult that the training workshops happened while simultaneously trying to implement, especially since this is something that is new for the coaches.*

—Teacher Coach (intervention 1).

We've demonstrated evidence that teachers in our study quickly adopted strategies related to the Love & Connect strategy, regardless of which intervention group they were assigned. We saw that teachers and coaches shared that they learned more about the importance of building student relationships through the experience and this came out clearly in interviews of teachers and coaches. We found fewer indications of teacher strategies that emphasize student-driven learning and student autonomy in the classroom. This may be an area for further intervention to help coaches and teachers create plans for more holistic approaches to employing multiple strategies in the classroom with equal emphasis.

Unilaterally, we heard from teachers that their coaches were key in supporting them throughout the intervention. While it may be by design that we recruited and trained coaches in the framework, we also heard from teachers whose coaches consistently applied the tools and resources and provided feedback to teachers that they felt they had stronger knowledge of the framework and also noticed more shifts in their mindsets and changes in their actions. This quote from one of the participating teachers shares the importance of the role of the coach:

*My coach is the major strength, source of guidance through this study, he takes the time to make sure I understand the concepts. My coach visited weekly, which has been so helpful. Through observing and documenting my teaching and doing the debrief with me, my coach was able to pinpoint things that I wouldn't have realized on my own. I have reflected on my work before, but not like this, and not with this level of guidance. A recommendation is ensuring that there are strong, supportive coaches for the teachers. –Teacher*

The study provided a space for teachers and coaches to experiment and apply new strategies in their classrooms. We heard often from the teachers and coaches that in order to enable this type of experimentation, strong relationships and open communication with school directors and peer teachers is a key factor. Some teachers and coaches shared some challenges in navigating complicated school dynamics when a school director or another teacher discouraged engaging in some of the foundational actions, like more student dialogue and student choice in instruction. A few quotes help to exemplify the importance of having strong buy-in at the school level, including this example of a teacher who received lots of school level support:

*I don't find an issue with using the framework with the community or the schools. The principal and the teachers are in agreement with the theory behind TACL, that is, are supportive of encouraging more agency with their students. I can see where this framework might be difficult in another environment. –Teacher*

Meanwhile, other teachers have found it more challenging to experiment in their classrooms:

*I believe in the ideology of the TACL framework, but the system, the old teachers, some of them don't buy these ideas, it can be very discouraging. –Teacher*

Furthermore, we've explained that the purpose of the TACL framework is ultimately to set students on a path to develop their leadership skills for a better future for all of us. Our study did not aim to evaluate the potential effects of the model and interventions on students. Any future research should strive to determine whether these shifts in mindsets and teacher actions lead to improvements in holistic student learning outcomes for Teaching as Collective Leadership.

Our measurement and research team has also been busy innovating on new ways to monitor and evaluate student leadership outcomes using a variety of methods. In 2021, we created the Student Leadership Measurement Library to support network partners and teachers to monitor student leadership growth across the five student outcomes families—wellbeing, connectedness, awareness, agency, and mastery. We suggest exploring these outcomes in more depth within one partner organization, and over a full academic year, to understand the impact of Teaching as Collective Leadership and to understand the impact on student learning and leadership.

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## Appendices and Data

### Teacher Mindsets and Student Survey

#### Item-level statistics at baseline – used for instrument adaptation

##### Teacher Mindsets Survey

| Item                                                                               | N  | mean | sd   | median | range | skew  | kurtosis | se   |
|------------------------------------------------------------------------------------|----|------|------|--------|-------|-------|----------|------|
| I see all my students as whole and intelligent people.                             | 47 | 4.40 | 0.71 | 5      | 3     | -1.08 | 1.02     | 0.10 |
| I invite students to share their opinions during lessons.                          | 48 | 4.63 | 0.61 | 5      | 2     | -1.32 | 0.62     | 0.09 |
| I listen to my students' opinions.                                                 | 48 | 4.73 | 0.68 | 5      | 4     | -3.68 | 16.57    | 0.10 |
| I see my students as capable of shaping their own lives and the world around them. | 48 | 4.33 | 0.69 | 4      | 3     | -0.90 | 0.90     | 0.10 |
| I value and change my plans based on my students' opinions.                        | 48 | 4.25 | 0.64 | 4      | 2     | -0.24 | -0.75    | 0.09 |
| I encourage my students to share their ambitions and aspirations.                  | 48 | 4.60 | 0.54 | 5      | 2     | -0.82 | -0.56    | 0.08 |
| I realize that there are inequities that my students face.                         | 48 | 4.31 | 0.97 | 5      | 4     | -1.87 | 3.59     | 0.14 |
| I seek feedback from my students to improve my lessons.                            | 48 | 4.46 | 0.71 | 5      | 3     | -1.23 | 1.28     | 0.10 |
| I admit when I make mistakes when I am teaching.                                   | 48 | 4.60 | 0.79 | 5      | 4     | -2.48 | 7.10     | 0.11 |
| I constantly learn and develop myself to improve as a teacher.                     | 48 | 4.75 | 0.44 | 5      | 1     | -1.12 | -0.76    | 0.06 |
| I ask my students questions to understand their opinions.                          | 48 | 4.75 | 0.44 | 5      | 1     | -1.12 | -0.76    | 0.06 |
| I try to understand my students' context beyond the classroom.                     | 48 | 4.50 | 0.71 | 5      | 3     | -1.71 | 3.47     | 0.10 |
| I try to build relationships with my students' families.                           | 48 | 4.00 | 0.85 | 4      | 3     | -0.61 | -0.21    | 0.12 |
| I think that partnerships with parents and the community are important.            | 48 | 4.71 | 0.46 | 5      | 1     | -0.89 | -1.24    | 0.07 |
| I am aware of my limiting beliefs and working to overcome them.                    | 48 | 4.19 | 0.82 | 4      | 3     | -1.03 | 0.87     | 0.12 |
| I believe that when working with the community, systems can be changed.            | 48 | 4.35 | 0.79 | 4      | 4     | -1.72 | 4.73     | 0.11 |
| I believe that all my students can effect change around them.                      | 48 | 4.31 | 0.83 | 4      | 4     | -1.71 | 4.05     | 0.12 |

| Item                                                                                                                            | N  | mean | sd   | median | range | skew  | kurtosis | se   |
|---------------------------------------------------------------------------------------------------------------------------------|----|------|------|--------|-------|-------|----------|------|
| I take time to nurture authentic connections with one or more of the following: students, families, colleagues, others.         | 48 | 4.38 | 0.57 | 4      | 2     | -0.19 | -0.88    | 0.08 |
| I co-create with students an environment in which their experiences, identities, and cultures are welcome and celebrated.       | 48 | 4.44 | 0.58 | 4      | 2     | -0.40 | -0.85    | 0.08 |
| I seek learnings from different contexts to build unity and optimism in my classroom.                                           | 48 | 4.44 | 0.62 | 4.5    | 2     | -0.57 | -0.68    | 0.09 |
| I create space for open and frank discussions by being fully present, listening deeply, and exhibiting curiosity over judgment. | 48 | 4.40 | 0.61 | 4      | 2     | -0.43 | -0.76    | 0.09 |
| I develop expertise on the subjects I am teaching, content pedagogy, and child development.                                     | 48 | 4.33 | 0.69 | 4      | 3     | -0.90 | 0.90     | 0.10 |
| I use my growing knowledge of learning theory to ensure my lessons meet classroom goals                                         | 48 | 4.52 | 0.65 | 5      | 2     | -0.98 | -0.23    | 0.09 |
| I have ways to take care of my wellbeing.                                                                                       | 48 | 3.92 | 0.79 | 4      | 3     | -0.36 | -0.39    | 0.11 |
| I expect my students to listen to me and not question my teaching.**                                                            | 48 | 3.79 | 0.82 | 4      | 4     | -0.95 | 1.53     | 0.12 |
| I think my students' future is limited by their circumstances.**                                                                | 48 | 3.13 | 1.33 | 3      | 4     | -0.06 | -1.27    | 0.19 |
| I think my students are too young to set goals and have ambitions for the future.**                                             | 48 | 4.38 | 0.84 | 5      | 4     | -1.82 | 4.20     | 0.12 |
| It's more important to give all my students the same resources than to personalize them for each student.**                     | 48 | 3.58 | 1.11 | 4      | 4     | -0.80 | -0.16    | 0.16 |
| I am the main source of learning in the classroom.**                                                                            | 48 | 3.73 | 1.09 | 4      | 4     | -0.73 | -0.17    | 0.16 |
| If I admit my mistakes, students might lose trust in me.**                                                                      | 48 | 4.38 | 0.76 | 4.5    | 3     | -1.28 | 1.64     | 0.11 |
| I only focus on what goes on with my students in the classroom and not beyond.**                                                | 48 | 4.19 | 0.89 | 4      | 4     | -1.42 | 2.40     | 0.13 |
| I think that the community stands in the way of the development of students.**                                                  | 48 | 2.25 | 1.16 | 2      | 4     | 0.40  | -1.05    | 0.17 |
| I think that my students cannot win against the system.**                                                                       | 48 | 4.13 | 0.84 | 4      | 3     | -0.44 | -0.95    | 0.12 |
| I think that systemic barriers cannot be changed.**                                                                             | 48 | 4.27 | 0.79 | 4      | 4     | -1.51 | 3.92     | 0.11 |

| Item                                                            | N  | mean | sd   | median | range | skew  | kurtosis | se   |
|-----------------------------------------------------------------|----|------|------|--------|-------|-------|----------|------|
| I think it's not my responsibility to change the system.**      | 48 | 4.29 | 0.82 | 4      | 4     | -1.68 | 4.05     | 0.12 |
| I prioritize my professional advancement over my well-being.**  | 48 | 3.23 | 1.10 | 3      | 4     | -0.45 | -0.65    | 0.16 |
| I do not have time to do regular reflection in the classroom.** | 48 | 3.77 | 0.99 | 4      | 4     | -0.69 | -0.09    | 0.14 |

\*\* Indicates both the teacher coach and paired teacher were interviewed.

■ Highlighted items are dropped based on the pilot data.

## Item correlations and factor loadings

| Item                                                                                                                            | Item-total correlation | Item-rest correlation | Factor loading |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| I see all my students as whole and intelligent people.                                                                          | 0.277001               | 0.220578              | 0.213488       |
| I invite students to share their opinions during lessons.                                                                       | 0.495251               | 0.455481              | 0.459187       |
| I listen to my students' opinions.                                                                                              | 0.446394               | 0.398852              | 0.445443       |
| I see my students as capable of shaping their own lives and the world around them.                                              | 0.593917               | 0.554156              | 0.647281       |
| I value and change my plans based on my students' opinions.                                                                     | 0.443159               | 0.398901              | 0.485934       |
| I encourage my students to share their ambitions and aspirations.                                                               | 0.454464               | 0.417628              | 0.453156       |
| I realize that there are inequities that my students face.                                                                      | 0.089398               | 0.007239              | 0.015463       |
| I seek feedback from my students to improve my lessons.                                                                         | 0.416201               | 0.364706              | 0.440859       |
| I admit when I make mistakes when I am teaching.                                                                                | 0.515623               | 0.464085              | 0.385948       |
| I constantly learn and develop myself to improve as a teacher.                                                                  | 0.356012               | 0.323196              | 0.38848        |
| I ask my students questions to understand their opinions.                                                                       | 0.54452                | 0.517676              | 0.531447       |
| I try to understand my students' context beyond the classroom.                                                                  | 0.267888               | 0.210246              | 0.239365       |
| I try to build relationships with my students' families.                                                                        | 0.574538               | 0.522988              | 0.613043       |
| I think that partnerships with parents and the community are important.                                                         | 0.393083               | 0.35941               | 0.460388       |
| I am aware of my limiting beliefs and working to overcome them.                                                                 | 0.608229               | 0.561943              | 0.57443        |
| I believe that when working with the community, systems can be changed.                                                         | 0.47866                | 0.424858              | 0.526117       |
| I believe that all my students can effect change around them.                                                                   | 0.305826               | 0.240516              | 0.287265       |
| I take time to nurture authentic connections with one or more of the following: students, families, colleagues, others.         | 0.708926               | 0.683624              | 0.706267       |
| I co-create with students an environment in which their experiences, identities, and cultures are welcome and celebrated.       | 0.451285               | 0.411031              | 0.518394       |
| I seek learnings from different contexts to build unity and optimism in my classroom.                                           | 0.617449               | 0.58383               | 0.670079       |
| I create space for open and frank discussions by being fully present, listening deeply, and exhibiting curiosity over judgment. | 0.656574               | 0.626185              | 0.690423       |
| I develop expertise on the subjects I am teaching, content pedagogy, and child development.                                     | 0.304705               | 0.250201              | 0.364841       |
| I use my growing knowledge of learning theory to ensure my lessons meet classroom goals                                         | 0.685806               | 0.654897              | 0.759915       |
| I have ways to take care of my wellbeing.                                                                                       | 0.551023               | 0.502059              | 0.570318       |

| Item                                                                                                        | Item-total correlation | Item-rest correlation | Factor loading |
|-------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| I expect my students to listen to me and not question my teaching.**                                        | 0.347227               | 0.284212              | 0.276164       |
| I think my students' future is limited by their circumstances.**                                            | 0.553196               | 0.468102              | 0.490069       |
| I think my students are too young to set goals and have ambitions for the future.**                         | 0.405488               | 0.343942              | 0.242187       |
| It's more important to give all my students the same resources than to personalize them for each student.** | 0.156429               | 0.063619              | -0.01289       |
| I am the main source of learning in the classroom.**                                                        | 0.163868               | 0.073046              | 0.101368       |
| If I admit my mistakes, students might lose trust in me.**                                                  | 0.659868               | 0.621162              | 0.601645       |
| I only focus on what goes on with my students in the classroom and not beyond.**                            | 0.4163                 | 0.351016              | 0.386358       |
| I think that the community stands in the way of the development of students.**                              | -0.02227               | -0.11867              | -0.14489       |
| I think that my students cannot win against the system.**                                                   | 0.637614               | 0.592843              | 0.617008       |
| I think that systemic barriers cannot be changed.**                                                         | 0.415994               | 0.358407              | 0.384405       |
| I think it's not my responsibility to change the system.**                                                  | 0.464193               | 0.407032              | 0.344288       |
| I prioritize my professional advancement over my well-being.**                                              | 0.072847               | -0.01943              | -0.04228       |
| I do not have time to do regular reflection in the classroom.**                                             | 0.527402               | 0.462717              | 0.470327       |

\*\* Items that are reverse-coded.

■ Highlighted items are dropped based on the pilot data.

## Student Perceptions Survey (Lower Primary Version)

### Item-level statistics

| Item                                                                         | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher makes me feel I'm good enough.                                    | 95  | 4.69 | 0.73 | 5      | 4     | -3.35987 | 12.91394 | 0.074937 |
| My teacher makes me feel that I can change my life for the better.           | 93  | 4.70 | 0.70 | 5      | 4     | -3.0321  | 10.41381 | 0.07298  |
| My teacher uses my responses and opinions to take action.                    | 91  | 4.37 | 1.11 | 5      | 4     | -1.86586 | 2.561633 | 0.116573 |
| My teacher encourages us to share our dreams and aspirations for the future. | 94  | 4.49 | 0.96 | 5      | 4     | -2.179   | 4.366651 | 0.09889  |
| My teacher notices that some students have an unfair situation in life.      | 87  | 4.22 | 1.10 | 5      | 4     | -1.40542 | 1.226641 | 0.11838  |
| My teacher admits it when he or she makes mistakes.                          | 95  | 4.60 | 0.89 | 5      | 4     | -2.87922 | 8.45549  | 0.091522 |
| My teacher asks us questions to understand our opinions.                     | 100 | 4.60 | 0.88 | 5      | 4     | -2.62259 | 6.947608 | 0.087617 |
| My teacher tries to understand my life outside of the classroom.             | 94  | 4.34 | 1.17 | 5      | 4     | -1.91431 | 2.58049  | 0.120581 |
| My teacher interacts or has a relationship with my family.                   | 96  | 4.03 | 1.42 | 5      | 4     | -1.2173  | -0.0194  | 0.144681 |
| My teacher believes we can make a difference in our lives and our community. | 99  | 4.58 | 0.85 | 5      | 4     | -2.68542 | 7.863884 | 0.085051 |

| Item                                                                                             | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|--------------------------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher takes time to form deep connections with us, our families and our communities.        | 96  | 3.48 | 1.62 | 4      | 4     | -0.52617 | -1.39206 | 0.164889 |
| My teacher involves us in activities that celebrate our cultures and traditions.                 | 99  | 4.63 | 0.69 | 5      | 4     | -2.44826 | 7.747901 | 0.069728 |
| My teacher is interested to learn from our different views.                                      | 99  | 4.77 | 0.60 | 5      | 4     | -3.4476  | 14.97331 | 0.060623 |
| My teacher creates space for open and honest discussions by listening deeply and not judging us. | 95  | 4.08 | 1.49 | 5      | 4     | -1.3768  | 0.235983 | 0.152371 |
| My teacher always helps us meet our learning goals.                                              | 94  | 4.82 | 0.46 | 5      | 3     | -3.17879 | 13.1187  | 0.047742 |
| My teacher takes care of his or her wellbeing.                                                   | 94  | 4.22 | 1.35 | 5      | 4     | -1.66643 | 1.271922 | 0.139577 |
| My teacher is a very good listener when kids talk.                                               | 95  | 4.87 | 0.51 | 5      | 4     | -5.42652 | 34.39278 | 0.052362 |
| I like the way my teacher treats me when I need help.                                            | 95  | 4.79 | 0.48 | 5      | 3     | -2.76843 | 10.18452 | 0.049397 |
| My teacher is very good at explaining things.                                                    | 95  | 4.75 | 0.70 | 5      | 4     | -3.6868  | 15.38485 | 0.071722 |
| Our class stays busy and does not waste time.                                                    | 97  | 4.13 | 1.08 | 4      | 4     | -1.15654 | 0.561553 | 0.109306 |
| My teacher makes sure I try to do my best.                                                       | 98  | 4.66 | 0.67 | 5      | 4     | -2.71323 | 9.505555 | 0.067947 |
| When my teacher is teaching us, he or she asks us whether we understand.                         | 90  | 4.81 | 0.45 | 5      | 2     | -2.27709 | 4.576327 | 0.047126 |
| My teacher wants me to explain my answers by saying why I think what I think.                    | 100 | 4.70 | 0.61 | 5      | 3     | -2.36344 | 6.19318  | 0.061134 |
| My teacher respects all cultural differences in our classroom.                                   | 99  | 4.67 | 0.64 | 5      | 3     | -2.14339 | 4.84165  | 0.06421  |
| My teacher encourages us to share our different opinions.                                        | 100 | 4.50 | 0.82 | 5      | 4     | -1.88595 | 3.62097  | 0.082266 |
| My teacher connects learning to day to day life.                                                 | 100 | 4.64 | 0.66 | 5      | 3     | -2.19259 | 5.377897 | 0.065935 |
| My teacher uses examples that all students in this classroom can see themselves in.              | 98  | 4.59 | 0.70 | 5      | 3     | -1.92382 | 3.740797 | 0.070817 |
| My teacher knows a lot about the subject.                                                        | 96  | 4.83 | 0.47 | 5      | 3     | -3.41518 | 13.75479 | 0.048365 |
| My teacher seems to always learn more about the subject.                                         | 99  | 4.76 | 0.59 | 5      | 4     | -3.41925 | 15.59736 | 0.059356 |
| My teacher asks us how he or she can improve.                                                    | 99  | 4.64 | 0.75 | 5      | 3     | -2.19985 | 4.266832 | 0.07523  |
| My teacher creates space for us to reflect on our progress.                                      | 93  | 4.62 | 0.88 | 5      | 4     | -2.85156 | 7.984443 | 0.091624 |
| My teacher does not like us questioning the lesson.**                                            | 90  | 4.09 | 1.45 | 5      | 4     | -1.33218 | 0.124428 | 0.152911 |

| Item                                                                                                                 | N  | mean | sd   | median | range | skew     | kurtosis | se       |
|----------------------------------------------------------------------------------------------------------------------|----|------|------|--------|-------|----------|----------|----------|
| My teacher makes me feel that I am too young to set goals and have dreams for the future.**                          | 93 | 3.83 | 1.61 | 5      | 4     | -0.95394 | -0.83855 | 0.16722  |
| My teacher gives everyone the same materials, even if some have different needs than others.**                       | 86 | 2.09 | 1.52 | 1      | 4     | 1.029122 | -0.56594 | 0.164269 |
| My teacher does not seek our feedback to improve the lessons.**                                                      | 95 | 3.46 | 1.84 | 5      | 4     | -0.47582 | -1.6936  | 0.188594 |
| My teacher thinks he or she has all the information in the classroom.**                                              | 99 | 2.70 | 1.69 | 2      | 4     | 0.324638 | -1.61259 | 0.169551 |
| My teacher only focuses on what we do in the classroom and does not care about what happens outside the classroom.** | 95 | 3.44 | 1.73 | 4      | 4     | -0.44596 | -1.59733 | 0.177525 |

\*\* Items that are reverse-coded.

■ Highlighted items are dropped based on the pilot data.

## Item correlations and factor loadings

| Item                                                                                             | Item-total correlation | Item-rest correlation | Factor loading |
|--------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| My teacher makes me feel I'm good enough.                                                        | 0.521302               | 0.43190               | 0.507517       |
| My teacher makes me feel that I can change my life for the better.                               | 0.652453               | 0.63243               | 0.708074       |
| My teacher uses my responses and opinions to take action.                                        | 0.422971               | 0.35919               | 0.475905       |
| My teacher encourages us to share our dreams and aspirations for the future.                     | 0.550364               | 0.49641               | 0.554486       |
| My teacher notices that some students have an unfair situation in life.                          | 0.54486                | 0.52686               | 0.517463       |
| My teacher admits it when he or she makes mistakes.                                              | 0.423503               | 0.34000               | 0.450903       |
| My teacher asks us questions to understand our opinions.                                         | 0.596531               | 0.55602               | 0.560934       |
| My teacher tries to understand my life outside of the classroom.                                 | 0.357505               | 0.29935               | 0.341801       |
| My teacher interacts or has a relationship with my family.                                       | 0.269765               | 0.16179               | 0.167606       |
| My teacher believes we can make a difference in our lives and our community.                     | 0.306597               | 0.22201               | 0.208969       |
| My teacher takes time to form deep connections with us, our families and our communities.        | 0.339106               | 0.23080               | 0.152460       |
| My teacher involves us in activities that celebrate our cultures and traditions.                 | 0.603296               | 0.59138               | 0.677191       |
| My teacher is interested to learn from our different views.                                      | 0.262828               | 0.21367               | 0.264916       |
| My teacher creates space for open and honest discussions by listening deeply and not judging us. | 0.169538               | 0.09502               | 0.078679       |
| My teacher always helps us meet our learning goals.                                              | 0.489044               | 0.41980               | 0.531698       |
| My teacher takes care of his or her wellbeing.                                                   | 0.14898                | 0.07757               | 0.075728       |
| My teacher is a very good listener when kids talk.                                               | 0.268265               | 0.21623               | 0.257929       |
| I like the way my teacher treats me when I need help.                                            | 0.549816               | 0.50025               | 0.589240       |
| My teacher is very good at explaining things.                                                    | 0.477525               | 0.42924               | 0.577255       |
| Our class stays busy and does not waste time.                                                    | 0.136721               | 0.05490               | 0.116833       |
| My teacher makes sure I try to do my best.                                                       | 0.620044               | 0.55510               | 0.752397       |

| Item                                                                                                                 | Item-total correlation | Item-rest correlation | Factor loading |
|----------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| When my teacher is teaching us, he or she asks us whether we understand.                                             | 0.535731               | 0.48629               | 0.637276       |
| My teacher wants me to explain my answers by saying why I think what I think.                                        | 0.554698               | 0.50047               | 0.650447       |
| My teacher respects all cultural differences in our classroom.                                                       | 0.492061               | 0.41089               | 0.651481       |
| My teacher encourages us to share our different opinions.                                                            | 0.617036               | 0.55698               | 0.767454       |
| My teacher connects learning to day to day life.                                                                     | 0.65678                | 0.63314               | 0.730049       |
| My teacher uses examples that all students in this classroom can see themselves in.                                  | 0.511439               | 0.44581               | 0.625844       |
| My teacher knows a lot about the subject.                                                                            | 0.436373               | 0.36167               | 0.602282       |
| My teacher seems to always learn more about the subject.                                                             | 0.535506               | 0.52473               | 0.616059       |
| My teacher asks us how he or she can improve.                                                                        | 0.365124               | 0.32828               | 0.411694       |
| My teacher creates space for us to reflect on our progress.                                                          | 0.660487               | 0.62656               | 0.712374       |
| My teacher does not like us questioning the lesson.**                                                                | 0.344966               | 0.26254               | 0.129017       |
| My teacher makes me feel that I am too young to set goals and have dreams for the future.**                          | 0.415258               | 0.30152               | 0.148541       |
| My teacher gives everyone the same materials, even if some have different needs than others.**                       | 0.045415               | -0.05050              | -0.244265      |
| My teacher does not seek our feedback to improve the lessons.**                                                      | 0.331643               | 0.21790               | 0.023123       |
| My teacher thinks he or she has all the information in the classroom.**                                              | 0.187192               | 0.06915               | 0.005496       |
| My teacher only focuses on what we do in the classroom and does not care about what happens outside the classroom.** | 0.481843               | 0.32736               | 0.133354       |

\*\* Items that are reverse-coded.

■ Highlighted items are dropped based on the pilot data.

## Student Perceptions Survey (Upper Primary and Secondary Version)

### Item-level statistics

| Item                                                                         | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher makes me feel I'm good enough.                                    | 550 | 4.52 | 0.79 | 5      | 4     | -2.13078 | 5.454651 | 0.033819 |
| My teacher makes me feel that I can change my life for the better.           | 549 | 4.59 | 0.81 | 5      | 4     | -2.53217 | 7.078657 | 0.034446 |
| My teacher uses my responses and opinions to take action.                    | 552 | 4.23 | 1.07 | 5      | 4     | -1.58672 | 1.957586 | 0.04534  |
| My teacher encourages us to share our dreams and aspirations for the future. | 553 | 4.41 | 0.98 | 5      | 4     | -2.01762 | 3.828604 | 0.041582 |
| My teacher notices that some students have an unfair situation in life.      | 551 | 4.20 | 1.03 | 4      | 4     | -1.47092 | 1.835522 | 0.043749 |
| My teacher admits it when he or she makes mistakes.                          | 548 | 4.29 | 1.05 | 5      | 4     | -1.62638 | 2.137955 | 0.045038 |
| My teacher asks us questions to understand our opinions.                     | 550 | 4.51 | 0.80 | 5      | 4     | -2.36786 | 7.002101 | 0.034116 |
| My teacher tries to understand my life outside of the classroom.             | 548 | 4.24 | 1.11 | 5      | 4     | -1.48802 | 1.372846 | 0.047303 |

| Item                                                                                             | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|--------------------------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher interacts or has a relationship with my family.                                       | 551 | 3.61 | 1.50 | 4      | 4     | -0.6582  | -1.04761 | 0.06384  |
| My teacher believes we can make a difference in our lives and our community.                     | 550 | 4.48 | 0.83 | 5      | 4     | -2.10873 | 5.299173 | 0.035344 |
| My teacher takes time to form deep connections with us, our families and our communities.        | 549 | 4.05 | 1.16 | 4      | 4     | -1.19373 | 0.583207 | 0.049473 |
| My teacher involves us in activities that celebrate our cultures and traditions.                 | 551 | 4.36 | 0.93 | 5      | 4     | -1.75125 | 3.081089 | 0.03944  |
| My teacher is interested to learn from our different views.                                      | 554 | 4.42 | 0.88 | 5      | 4     | -1.88802 | 3.79026  | 0.037319 |
| My teacher creates space for open and honest discussions by listening deeply and not judging us. | 551 | 4.47 | 0.82 | 5      | 4     | -2.11605 | 5.326315 | 0.0351   |
| My teacher always helps us meet our learning goals.                                              | 557 | 4.53 | 0.80 | 5      | 4     | -2.29915 | 6.165577 | 0.034036 |
| My teacher takes care of his or her wellbeing.                                                   | 548 | 4.53 | 0.85 | 5      | 4     | -2.31099 | 5.797942 | 0.036273 |
| I like the way my teacher treats me when I need help.                                            | 557 | 4.74 | 0.69 | 5      | 4     | -3.54927 | 14.44627 | 0.029208 |
| Our class stays busy and does not waste time.                                                    | 551 | 4.06 | 1.16 | 4      | 4     | -1.41411 | 1.275818 | 0.04924  |
| My teacher in this class makes me feel that he or she really cares about me.                     | 557 | 4.54 | 0.86 | 5      | 4     | -2.41641 | 6.157987 | 0.036485 |
| If I am sad or angry, my teacher helps me feel better.                                           | 554 | 4.44 | 0.87 | 5      | 4     | -1.89889 | 3.894578 | 0.03679  |
| The teacher in this class encourages me to do my best.                                           | 556 | 4.71 | 0.64 | 5      | 4     | -3.1045  | 12.20039 | 0.027273 |
| My teacher gives us time to explain our ideas.                                                   | 558 | 4.65 | 0.70 | 5      | 4     | -2.61592 | 8.501678 | 0.02946  |
| My teacher explains difficult things clearly.                                                    | 558 | 4.61 | 0.78 | 5      | 4     | -2.76276 | 8.888432 | 0.032811 |
| My teacher asks questions to be sure we are following along when he or she is teaching.          | 553 | 4.67 | 0.67 | 5      | 4     | -2.85095 | 10.68049 | 0.028413 |
| My teacher checks to make sure we understand what he or she is teaching us.                      | 551 | 4.62 | 0.68 | 5      | 4     | -2.4207  | 7.992584 | 0.029089 |
| My teacher tells us what we are learning and why.                                                | 552 | 4.53 | 0.76 | 5      | 4     | -1.99273 | 4.755782 | 0.032517 |
| In this class, my teacher accepts nothing less than our full effort.                             | 554 | 4.42 | 0.89 | 5      | 4     | -1.93721 | 4.090091 | 0.037688 |

| Item                                                                                              | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|---------------------------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher really tries to understand how students feel about things.                             | 555 | 4.47 | 0.80 | 5      | 4     | -1.92101 | 4.550052 | 0.034036 |
| Student behavior in this class is under control.                                                  | 553 | 4.01 | 1.21 | 4      | 4     | -1.15667 | 0.418205 | 0.051543 |
| Students in this class treat the teacher with respect.                                            | 555 | 4.52 | 0.85 | 5      | 4     | -2.23066 | 5.446009 | 0.036093 |
| My teacher asks students to explain more about the answers they give.                             | 557 | 4.54 | 0.79 | 5      | 4     | -2.14669 | 5.322469 | 0.033337 |
| Students get to decide how activities are done in this class.                                     | 547 | 3.95 | 1.12 | 4      | 4     | -0.9009  | 0.112857 | 0.048047 |
| My teacher respects my ideas and suggestions.                                                     | 555 | 4.34 | 0.98 | 5      | 4     | -1.94773 | 3.804879 | 0.041621 |
| My teacher respects all cultural differences in our classroom.                                    | 553 | 4.43 | 0.92 | 5      | 4     | -1.96879 | 3.970606 | 0.039048 |
| My teacher encourages us to share our different opinions.                                         | 552 | 4.53 | 0.85 | 5      | 4     | -2.36619 | 6.169632 | 0.036158 |
| My teacher connects learning to day to day life.                                                  | 553 | 4.42 | 0.93 | 5      | 4     | -2.04841 | 4.34309  | 0.039357 |
| My teacher uses examples that are inclusive for all students in this classroom.                   | 553 | 4.48 | 0.81 | 5      | 4     | -1.94815 | 4.334401 | 0.034629 |
| My teacher has a lot of knowledge about the subject.                                              | 554 | 4.65 | 0.72 | 5      | 4     | -2.72635 | 8.878223 | 0.030632 |
| My teacher seems to always learn more about the subject.                                          | 546 | 4.49 | 0.82 | 5      | 4     | -1.90877 | 4.114957 | 0.034897 |
| My teacher asks us how he or she can improve.                                                     | 555 | 4.33 | 0.93 | 5      | 4     | -1.58353 | 2.502446 | 0.039401 |
| My teacher creates space for us to reflect on our progress.                                       | 555 | 4.52 | 0.77 | 5      | 4     | -1.99736 | 4.737969 | 0.032792 |
| My teacher does not like us questioning the lesson.**                                             | 549 | 3.43 | 1.67 | 4      | 4     | -0.42343 | -1.53081 | 0.071096 |
| My teacher makes me feel that I am too young to set goals and have dreams for the future.**       | 559 | 3.30 | 1.72 | 4      | 4     | -0.30038 | -1.66755 | 0.072931 |
| My teacher gives everyone the same materials, even if some have different needs than others.**    | 554 | 2.26 | 1.33 | 2      | 4     | 0.785589 | -0.55458 | 0.05666  |
| My teacher does not seek our feedback to improve the lessons.**                                   | 548 | 3.09 | 1.65 | 3      | 4     | -0.10647 | -1.65274 | 0.070585 |
| My teacher thinks that only he or she can teach us, and has nothing to learn from the students.** | 548 | 3.30 | 1.63 | 4      | 4     | -0.32714 | -1.52082 | 0.069659 |

| Item                                                                                                                 | N   | mean | sd   | median | range | skew     | kurtosis | se       |
|----------------------------------------------------------------------------------------------------------------------|-----|------|------|--------|-------|----------|----------|----------|
| My teacher only focuses on what we do in the classroom and does not care about what happens outside the classroom.** | 550 | 3.01 | 1.64 | 3      | 4     | -0.04974 | -1.6575  | 0.070127 |
| Student behavior in this class makes the teacher angry.**                                                            | 551 | 2.67 | 1.58 | 2      | 4     | 0.324519 | -1.45413 | 0.067184 |

\*\* Items that are reverse-coded.

■ Highlighted items are dropped based on the pilot data.

## Item correlations and factor loadings

| Item                                                                                             | Item-total correlation | Item-rest correlation | Factor loading |
|--------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| My teacher makes me feel I'm good enough.                                                        | 0.549996               | 0.514286              | 0.569723       |
| My teacher makes me feel that I can change my life for the better.                               | 0.534731               | 0.504236              | 0.558464       |
| My teacher uses my responses and opinions to take action.                                        | 0.557735               | 0.516145              | 0.556371       |
| My teacher encourages us to share our dreams and aspirations for the future.                     | 0.506812               | 0.467001              | 0.477072       |
| My teacher notices that some students have an unfair situation in life.                          | 0.422637               | 0.377480              | 0.454225       |
| My teacher admits it when he or she makes mistakes.                                              | 0.416493               | 0.367476              | 0.394487       |
| My teacher asks us questions to understand our opinions.                                         | 0.507672               | 0.476280              | 0.527801       |
| My teacher tries to understand my life outside of the classroom.                                 | 0.402499               | 0.352358              | 0.399061       |
| My teacher interacts or has a relationship with my family.                                       | 0.233929               | 0.157404              | 0.210773       |
| My teacher believes we can make a difference in our lives and our community.                     | 0.389749               | 0.353551              | 0.395852       |
| My teacher takes time to form deep connections with us, our families and our communities.        | 0.447449               | 0.392380              | 0.454707       |
| My teacher involves us in activities that celebrate our cultures and traditions.                 | 0.517730               | 0.476215              | 0.559817       |
| My teacher is interested to learn from our different views.                                      | 0.585418               | 0.553892              | 0.616349       |
| My teacher creates space for open and honest discussions by listening deeply and not judging us. | 0.553460               | 0.516576              | 0.572944       |
| My teacher always helps us meet our learning goals.                                              | 0.523994               | 0.490230              | 0.524542       |
| My teacher takes care of his or her wellbeing.                                                   | 0.402070               | 0.365484              | 0.387254       |
| I like the way my teacher treats me when I need help.                                            | 0.487031               | 0.451958              | 0.497574       |
| Our class stays busy and does not waste time.                                                    | 0.238198               | 0.178619              | 0.199625       |
| My teacher in this class makes me feel that he or she really cares about me.                     | 0.520727               | 0.489083              | 0.537413       |
| If I am sad or angry, my teacher helps me feel better.                                           | 0.502594               | 0.470249              | 0.536669       |
| The teacher in this class encourages me to do my best.                                           | 0.564966               | 0.539704              | 0.585882       |
| My teacher gives us time to explain our ideas.                                                   | 0.609099               | 0.586243              | 0.629441       |
| My teacher explains difficult things clearly.                                                    | 0.581052               | 0.547062              | 0.620517       |
| My teacher asks questions to be sure we are following along when he or she is teaching.          | 0.578119               | 0.557995              | 0.603688       |

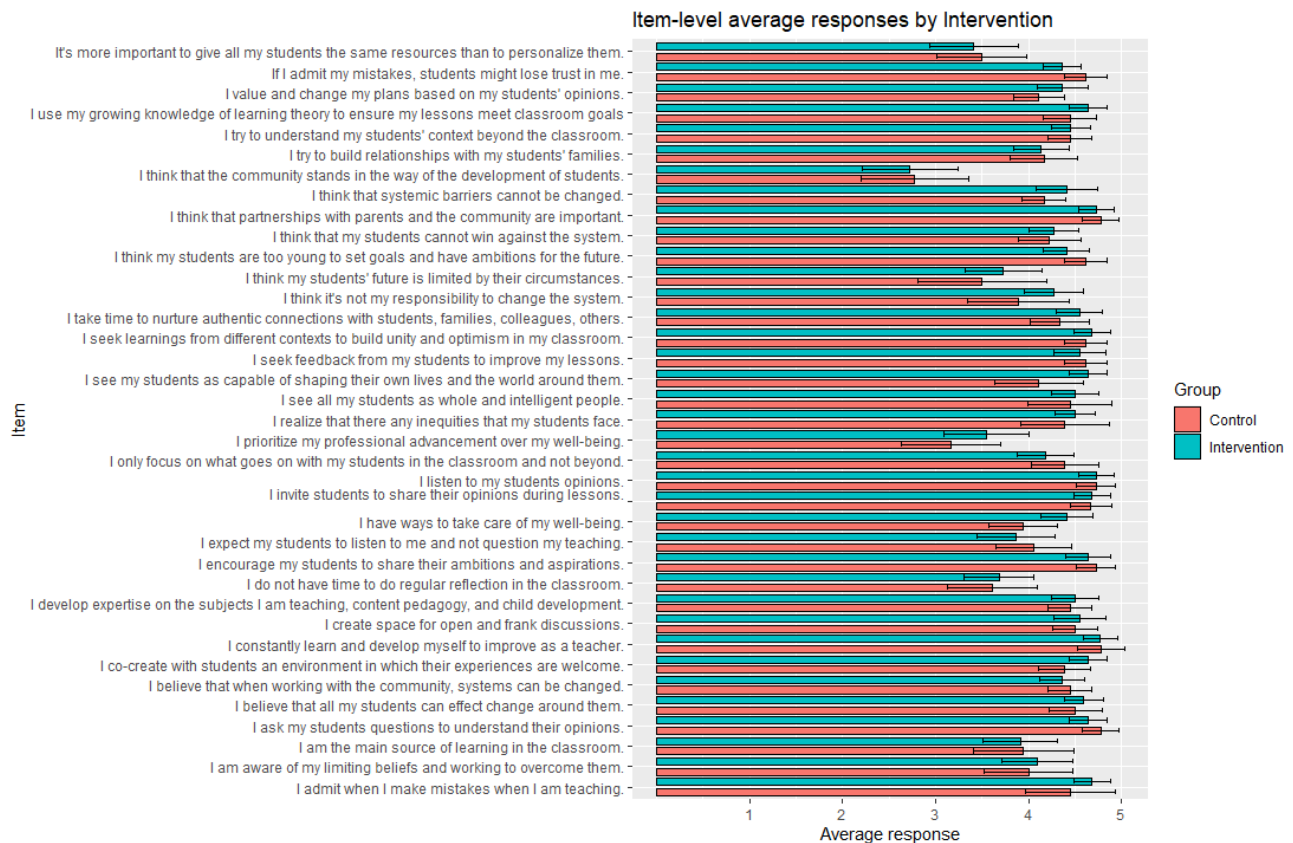
| Item                                                                                                                 | Item-total correlation | Item-rest correlation | Factor loading |
|----------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|----------------|
| My teacher checks to make sure we understand what he or she is teaching us.                                          | 0.589256               | 0.559278              | 0.631897       |
| My teacher tells us what we are learning and why.                                                                    | 0.593743               | 0.569012              | 0.615054       |
| In this class, my teacher accepts nothing less than our full effort.                                                 | 0.517255               | 0.485094              | 0.545561       |
| My teacher really tries to understand how students feel about things.                                                | 0.564058               | 0.534423              | 0.590671       |
| Student behavior in this class is under control.                                                                     | 0.289160               | 0.227437              | 0.306537       |
| Students in this class treat the teacher with respect.                                                               | 0.465333               | 0.427919              | 0.456649       |
| My teacher asks students to explain more about the answers they give.                                                | 0.608222               | 0.586437              | 0.651258       |
| Students get to decide how activities are done in this class.                                                        | 0.341862               | 0.286080              | 0.370380       |
| My teacher respects my ideas and suggestions.                                                                        | 0.449090               | 0.402872              | 0.444789       |
| My teacher respects all cultural differences in our classroom.                                                       | 0.467904               | 0.428591              | 0.451692       |
| My teacher encourages us to share our different opinions.                                                            | 0.645088               | 0.613683              | 0.653065       |
| My teacher connects learning to day to day life.                                                                     | 0.535000               | 0.496805              | 0.539992       |
| My teacher uses examples that are inclusive for all students in this classroom.                                      | 0.506629               | 0.475130              | 0.529050       |
| My teacher has a lot of knowledge about the subject.                                                                 | 0.585418               | 0.554660              | 0.592937       |
| My teacher seems to always learn more about the subject.                                                             | 0.601493               | 0.568153              | 0.652162       |
| My teacher asks us how he or she can improve.                                                                        | 0.474029               | 0.437676              | 0.506880       |
| My teacher creates space for us to reflect on our progress.                                                          | 0.631307               | 0.609013              | 0.682333       |
| My teacher does not like us questioning the lesson.**                                                                | 0.180030               | 0.096354              | -0.050552      |
| My teacher makes me feel that I am too young to set goals and have dreams for the future.**                          | 0.100813               | 0.009401              | -0.110067      |
| My teacher gives everyone the same materials, even if some have different needs than others.**                       | 0.021283               | -0.051077             | -0.147981      |
| My teacher does not seek our feedback to improve the lessons.**                                                      | 0.133617               | 0.049694              | -0.084155      |
| My teacher thinks that only he or she can teach us, and has nothing to learn from the students.**                    | 0.156715               | 0.073091              | -0.056702      |
| My teacher only focuses on what we do in the classroom and does not care about what happens outside the classroom.** | 0.167509               | 0.080627              | -0.065740      |
| Student behavior in this class makes the teacher angry.**                                                            | 0.075965               | -0.004414             | -0.102805      |

\*\* Items that are reverse-coded.

■ Highlighted items are dropped based on the pilot data.

## Teacher Mindsets Survey Item by Item responses by Intervention Group at Endline

(see [codebook here](#) for item level information)



## Balance Table of Covariates by Intervention Group (rough version)

|                           | High Touch Inter | Comparison Group | Difference |
|---------------------------|------------------|------------------|------------|
| Age                       | 26               | 27               | 0.280      |
|                           | (3.183)          | (2.849)          | (0.750)    |
| Yearsofteachingexperience | 2                | 2                | 0.212      |
|                           | (2.562)          | (1.854)          | (0.742)    |
| Grade Level Assignment    | 6                | 6                | -0.430     |
|                           | (2.257)          | (2.002)          | (0.488)    |
| Female                    | 41%              | 54%              | 0.129      |
|                           | (0.503)          | (0.508)          | (0.382)    |
| Teacher Mindset Baseline  | 4.215            | 4.198            | -0.017     |
|                           | (0.317)          | (0.339)          | (0.866)    |
| Observations              | 22               | 26               | 48         |

## Regression Outputs for Inferential Analysis on Teacher Mindsets

| Linear regression                 |       |         |                      |         |           |           |     |
|-----------------------------------|-------|---------|----------------------|---------|-----------|-----------|-----|
| Teacher Mindsets<br>Endline (TMS) | Coef. | St.Err. | t-value              | p-value | [95% Conf | Interval] | Sig |
| High-touch<br>Intervention        | .09   | .061    | 1.49                 | .152    | -.036     | .217      |     |
| Teacher Age                       | -.009 | .014    | -0.61                | .549    | -.038     | .021      |     |
| Years of Experience               | .006  | .018    | 0.34                 | .739    | -.032     | .045      |     |
| Grade level assignment            | .013  | .018    | 0.76                 | .457    | -.023     | .05       |     |
| Gender                            | .007  | .077    | 0.08                 | .933    | -.154     | .167      |     |
| TMS Baseline                      | .739  | .083    | 8.86                 | 0       | .565      | .912      | *** |
| Constant                          | 1.244 | .617    | 2.02                 | .057    | -.043     | 2.531     | *   |
| Mean dependent var                |       | 4.277   | SD dependent var     |         |           | 0.286     |     |
| R-squared                         |       | 0.711   | Number of obs        |         |           | 38        |     |
| F-test                            |       | 26.288  | Prob > F             |         |           | 0.000     |     |
| Akaike crit. (AIC)                |       | -21.457 | Bayesian crit. (BIC) |         |           | -9.993    |     |

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

| Linear regression                          |       |         |                      |         |           |           |     |
|--------------------------------------------|-------|---------|----------------------|---------|-----------|-----------|-----|
| Teacher Mindsets<br>Endline (TMS) (thetas) | Coef. | St.Err. | t-value              | p-value | [95% Conf | Interval] | Sig |
| High-touch<br>Intervention                 | .273  | .155    | 1.76                 | .094    | -.05      | .596      | *   |
| Teacher Age                                | -.01  | .036    | -0.27                | .787    | -.086     | .066      |     |
| Years of Experience                        | -.006 | .044    | -0.13                | .895    | -.097     | .085      |     |
| Grade level assignment                     | .044  | .039    | 1.14                 | .269    | -.037     | .126      |     |
| Gender                                     | -.07  | .195    | -0.36                | .723    | -.477     | .337      |     |
| TMS Baseline (theta)                       | .765  | .11     | 6.98                 | 0       | .536      | .993      | *** |
| Constant                                   | .025  | .994    | 0.03                 | .98     | -2.048    | 2.099     |     |
| Mean dependent var                         |       | 0.190   | SD dependent var     |         |           | 0.719     |     |
| R-squared                                  |       | 0.678   | Number of obs        |         |           | 38        |     |
| F-test                                     |       | 15.800  | Prob > F             |         |           | 0.000     |     |
| Akaike crit. (AIC)                         |       | 52.709  | Bayesian crit. (BIC) |         |           | 64.172    |     |

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

| Linear regression                |       |         |                      |         |           |           |     |
|----------------------------------|-------|---------|----------------------|---------|-----------|-----------|-----|
| Teacher Mindset<br>Endline (TMS) | Coef. | St.Err. | t-value              | p-value | [95% Conf | Interval] | Sig |
| High-touch<br>Intervention       | .12   | .057    | 2.11                 | .049    | .001      | .238      | **  |
| Teacher Age                      | .005  | .012    | 0.38                 | .706    | -.021     | .03       |     |
| Years of Experience              | -.011 | .017    | -0.63                | .533    | -.047     | .025      |     |
| Grade level assignment           | .01   | .019    | 0.53                 | .602    | -.029     | .049      |     |
| Gender                           | -.004 | .085    | -0.04                | .966    | -.182     | .174      |     |
| Student Perceptions<br>Score     | -.019 | .121    | -0.16                | .874    | -.273     | .234      |     |
| TMS Baseline                     | .809  | .081    | 10.03                | 0       | .64       | .979      | *** |
| Constant                         | .741  | .808    | 0.92                 | .371    | -.956     | 2.438     |     |
| Mean dependent var               |       | 4.307   | SD dependent var     |         |           | 0.289     |     |
| R-squared                        |       | 0.760   | Number of obs        |         |           | 33        |     |
| F-test                           |       | 26.469  | Prob > F             |         |           | 0.000     |     |
| Akaike crit. (AIC)               |       | -20.373 | Bayesian crit. (BIC) |         |           | -8.401    |     |

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$