

Closing the Child Labor and Forced Labor Evidence Gaps

Randomized Controlled Trial Impact Evaluation of the Young Potential Development Program in Ecuador



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PROJECT

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Randomized Controlled Trial Impact Evaluation of the Young Potential Development Program in Ecuador

TASK & DELIVERABLE

Impact Evaluation Final Report

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Abstract

In 2014, the U.S. Department of Labor’s Bureau of International Labor Affairs (ILAB) selected IMPAQ International, LLC, to design and implement a number of randomized controlled trial evaluations of the effectiveness of child-labor interventions. In Ecuador, IMPAQ is evaluating Young Potential Development (YPD), a one-year program implemented in municipal schools in Quito that targets at-risk youth between the ages of 15 and 25 years who have dropped out and have missed up to three years of the equivalent to middle school. These youth are often at greater risk of being engaged in hazardous child labor (HCL) and face substantial challenges, such as teen pregnancy, domestic violence, gang activities, migration, and substance abuse. The objective of the YPD program is to develop the interpersonal, career-oriented, and socio-emotional skills of the youth being served to prepare them for higher education, productive work, and entrepreneurship. For this impact study, we randomly assigned minor students age 15 to 17 to treatment and control classrooms and administered surveys, reviewed administrative records, and conducted key informant interviews and focus group discussions. This report discusses the fidelity of YPD implementation during the 2016–2017 school year and presents the impact estimates at the end of the YPD program. The findings indicate that while, for the most part, the YPD program was perceived as a positive experience by students, the program did not generate the anticipated positive effects in terms of improved socio-emotional skills, school and labor outcomes, educational aspirations, and youth avoidance of other risky activities. As a teacher training program, YPD’s main mechanism of change was through improving teacher’s pedagogical practices; however, most teachers reported that they did not perceive any changes in their teaching.

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Executive Summary

OVERVIEW

In 2014, IMPAQ International, LLC, was awarded a grant to conduct evaluations of child-labor-mitigation programs in Ecuador, Costa Rica, India, Rwanda, and Malawi for the U.S. Department of Labor’s Bureau of International Labor Affairs (ILAB). This report discusses the fidelity of implementation of the Young Potential Development (YPD) program in Ecuador during the 2016–2017 school year and presents the impact estimates at the end of the intervention.

The YPD program is an add-on school curriculum and teacher professional development initiative implemented in several municipal schools in Quito, Ecuador. YPD is part of the Ciclo Básico Acelerado (CBA), a municipal initiative of the Quito Secretariat of Education that targets at-risk youth between the ages of 15 and 25 years who have dropped out and have missed up to three years of the equivalent to middle school. The CBA program is designed to allow at-risk youth to complete the equivalent of middle school, with the goal of encouraging them to continue later with their high school studies. What distinguishes the YPD program from the rest of the CBA curriculum is its focus on strengthening the socio-emotional (also known more broadly, as non-cognitive) skills of these at-risk youth.

Specifically, YPD’s goal is to help CBA teachers innovate in their daily classroom practices by fostering an engaging learning environment and promoting student interaction. The YPD program trains and supports teachers to adopt interactive teaching methods that foster students’ socio-emotional skills. As described in detail in this report, this evaluation assesses the extent to which focusing on the socio-emotional skills of at-risk youth can generate changes in both school and labor outcomes.

RESEARCH QUESTIONS

To identify the impact of the YPD intervention, the evaluation team studied the effects of the intervention on socio-emotional skills, hazardous child labor (HCL), education, and other outcomes. The research questions are listed below:

- Does the YPD program improve beneficiaries’ social skills (conflict resolution, communication skills, and assertiveness)?
- Does the YPD program improve beneficiaries’ self-efficacy?
- Does the YPD program improve the beneficiaries’ perception of school climate?
- Does the YPD program affect the likelihood of beneficiaries participating in HCL?
- Does the YPD program affect the likelihood of beneficiaries working or not?
- Does the YPD program affect the beneficiaries’ number of hours worked?
- Does the YPD program affect the likelihood of beneficiaries participating in irregular employment?

- Does the YPD program affect the number of hours working in household chores and likelihood of doing chores at night?
- Does the YPD program affect the types of activities youth are involved in outside the school, including potentially risky and illicit activities?
- What is the impact of the YPD program on beneficiaries' education and career aspirations?
- What is the impact of the YPD program on beneficiaries' disciplinary infractions?
- What is the impact of the YPD program on beneficiaries' school attendance/absences?
- Do CBA students exposed to the YPD program have higher completion rates than regular CBA students?
- What is the impact of the YPD program on beneficiaries' test scores?

The main confirmatory research question is HCL. The other research questions are exploratory. Because the minimum working age in Ecuador is 15, the "child labor" definition does not fully apply to our target population (i.e., child labor other than HCL). However, since the minimum age for working under hazardous conditions is 18, we are studying the prevalence of HCL among students aged 15 to 17. To measure the prevalence of HCL, the evaluation team used measures based on International Labour Organization (ILO) guidelines that are integrated into Ecuadorian legislation, focusing on minors younger than 18 years of age.¹

EVALUATION DESIGN

To evaluate the YPD program, we implemented a randomized controlled trial study in seven municipal schools in Quito, the capital of Ecuador. We randomized a total of 806 younger students (15–17 years of age) to different classrooms within each school, assigning 403 to treatment classrooms and 403 to control classrooms. The treatment group and the control group of students each included 11 classrooms. We also stratified students by gender in order to have balanced representation for boys and girls in the treatment and control groups.

As part of the evaluation activities, IMPAQ, together with our field data collection partner, Opinión Pública Ecuador (OPE), conducted a baseline (during fall 2016) and a follow-up (during summer 2017) student survey to collect information on students and whether they were involved in hazardous (child) labor. We further collected administrative records from the Secretariat of Education on school outcomes (during summer 2017). Finally, we conducted key informant interviews and focus group discussions with program implementers and beneficiaries (during November 2017 – February 2018).

¹ We adjusted the HCL definition for a small number of the students who were 17 at baseline but who had turned 18 by the follow-up. More details are provided in the body of the report and in the Appendix A. Youths who were already aged 18 to 25 at baseline were not included in this study.

FINDINGS

Qualitative data collected after the end of YPD implementation reveal that the YPD program did not have the expected results in changing teacher’s pedagogical practices. Since YPD is a teacher training program, the main mechanism through which the YPD program is expected to affect students’ socio-emotional skills is through changes in teacher pedagogical practices, such as teacher’s teaching style or perceptions of their own teaching practices. Yet most teachers felt the training provided was not sufficient to meet this objective and did not perceive any changes in their teaching practices. The YPD program was implemented during the cultural and artistic education class (ECA for its Spanish acronym). The biggest disappointment for some teachers seems to have been the perceived inability to transfer YPD techniques to subjects other than ECA. While a minority of teachers did mention using “bits and pieces” of YPD in other subjects, the majority expressed that this was not feasible. In addition, inadequate program fidelity, as documented by the analysis of implementation data, may have impacted the time students had available to spend on a given learning dynamic across schools.

While, for the most part, the YPD program was perceived as a positive experience by students, who felt YPD helped to keep them motivated to pursue their objectives, the one-year findings suggest that the program had not generated the anticipated positive effects in terms of improved socio-emotional skills, school and labor outcomes, educational aspirations, and youth avoidance of risky activities. In particular, the one-year findings from the survey data suggest that the program had little or no effects on the three socio-emotional skills constructs analyzed in the evaluation (self-efficacy, social skills, and school climate). While small and positive effects were observed for social skills and school climate, the results were surprisingly negative for self-efficacy. Evidence from the qualitative findings, however, suggest that students liked the YPD activities, with some students finding that certain activities helped them in their self-efficacy, for example, as they were encouraged to write down the steps they need to take to achieve both short- and long-term objectives. The qualitative findings also suggest that students, especially females, liked all activities related to the development of communication skills.

The confirmatory outcome of this study is HCL. The data show no statistically significant effects on the likelihood of being in HCL for the treatment group students, nor in the various aspects of HCL (referred throughout as HCL components) including whether, for example, students work at night or are exposed to dangerous substances at work. As described by the logic model developed for the evaluation, the main mechanisms through which labor market outcomes changes were expected to occur is through changes in students’ socio-emotional skills. We generally found no impacts on socio-emotional skills that could translate into changes in labor outcomes.

We also analyzed impacts on students’ educational aspirations and involvement in other risky activities. The results indicate positive and not statistically significant effects on youth educational aspirations. The lack of effects on educational aspirations can be partly explained by the qualitative findings. Student participants in the focus group discussions reported that, although they wanted to continue their education, they had had these aspirations before joining the CBA program; that is, their aspirations were not a result of YPD. Instead, the YPD acted as additional support and reinforced motivation. The remainder of our data analysis focused on academic outcomes obtained by the Secretariat of Education – graduation,

test scores, behavior marks, and attendance. We generally find no statistically significant effects on academic outcomes. In addition to the previously-discussed limitation in the lack of effects on socio-emotional skills, which were expected to drive changes in school outcomes, it is important to keep one point in mind: it appears that the administrative data may be subject to “inflation” in measuring achievement, attendance, behavior, and graduation and may thus lack sufficient variation to capture meaningful differences between treatment and control students.

Although our study is not generally powered to detect effects by subgroup, we implemented an exploratory analysis to investigate patterns by gender, if any. By looking at separate results for female and for male students, we found small, positive but not statistically significant effects on females’ self-efficacy and social skills and a small, negative but not statistically significant effect on female perception of school climate. The results for males are of opposite sign and indicate a statistically significant lower self-efficacy for male students in the treatment group relative to male students in the control group; a small, negative but not statistically significant effect on social skills; and a small, positive but not statistically significant effect on school climate. We also found some positive and statistically significant effects on the likelihood of working longer hours for boys but negative, not statistically significant effects for girls. These results need to be interpreted with caution given the small sample sizes. Nevertheless, these results provide some suggestive evidence that male and female students may have been affected differently by the intervention.

RECOMMENDATIONS

Based on the evaluation team’s findings and the specific context in which the program was implemented, we provide below a set of recommendations for future evaluations of similar programs.

- Perform a needs assessment to help understand the context of a given intervention, its targeted groups, and whether the intervention needs to be tailored to the specific context (e.g., schools), as well as to assess feasibility for a full-scale experimental evaluation of its effectiveness.
- Randomize at the school level to minimize contamination within schools and reduce the likelihood that control teachers adopt reactive behaviors, undermining the true program impacts.
- Include subgroup analysis with sufficiently large sample sizes to estimate program impacts by gender and provide further insight into how boys and girls respond to such interventions.
- Expand the study with a sufficient sample size of teachers to measure the intermediary program effects on teacher pedagogical practices, socio-emotional skills and predisposition to teaching such skills to their students.

In addition, based on IMPAQ’s collaboration with YPD in conducting the evaluation, we provide a number of suggested recommendations for program implementation to help improve the program in the future. The recommendations based on our findings are described in more detail below:

- Restructure the teacher training component of the intervention to give CBA teachers more time and support before they are expected to implement learning dynamics with students.

- Incorporate YPD into other subjects of the CBA curriculum to help reinforce the program and its message to teachers and students.
- Prioritize mastery experiences that are familiar to teachers to accelerate teachers' acceptance of the intervention and to help them recognize it as inherently valuable.
- Alternatively, have experienced YPD captains deliver the intervention directly to students without conducting the teacher training.

Chapter 1: Study Background

1.1 INTRODUCTION

According to the International Labour Organization (ILO), an estimated 152 million children were engaged in child labor worldwide in 2016, with 73 million performing hazardous forms of work on a daily basis.² A substantial body of evidence documents the detrimental effects of child labor on children's health, development, education access and attainment, and economic outcomes.³ Regardless, insufficient evidence is available on the types of policy interventions that are most effective in mitigating harmful practices and in eliminating child labor. The paucity of rigorous randomized controlled trial studies exacerbates the knowledge gap.

To help close this gap, the U.S. Department of Labor's Bureau of International Labor Affairs (ILAB) awarded a grant to IMPAQ International, LLC (IMPAQ) in 2014, to conduct impact evaluations of programs in Costa Rica, Ecuador, India, Malawi, and Rwanda. The goal of the program evaluations is to generate evidence about the relevance, efficacy, and integrity of these interventions in achieving their intended program outcomes. This report focuses on the evaluation of the Young Potential Development (YPD) program in Ecuador.

This report is organized as follows: this chapter describes the policy context, provides a high-level overview of the program, and introduces the research questions; Chapter 2 describes the study design and methodology; Chapter 3 describes the YPD program and the fidelity of its implementation during the study; Chapter 4 presents the findings at the end of the program and discusses study limitations; and Chapter 5 provides a summary and recommendations.

1.2 POLICY CONTEXT AND PRIOR RESEARCH

1.2.1 Child Labor Terminology: Common Definitions

The International Labour Organization defines "child labor" as any type of "work that is mentally, physically, socially or morally dangerous and harmful to children, and interferes with children's education by: (i) denying them an opportunity to attend school, (ii) obliging them to leave school prematurely, or (iii) requiring them to attempt to combine school attendance with excessively long and heavy work."⁴

At the time of the study, Ecuador had ratified ILO's major conventions on minimum working age and worst forms of child labor (138 and 182, respectively) as well as the United Nation's Convention on the Rights

² International Labour Organization, Global Estimates of Child Labour. Results and Trends 2012-106. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_575499.pdf

³ Lyon, S., Rosati, F. C., & Guarcello, L. (2008). Child labour and education for all: An issues paper. Retrieved from http://www.ucw-project.org/Pages/bib_details.aspx?id=11772&Pag=4&Year=-1&Country=-1&Author=-1.

⁴ ILO. What is child labor: defining child labor. Retrieved from <http://www.ilo.org/ipec/facts/lang--en/index.htm>.

of the Child. The relevant national legislation regulating work prohibited to minors are the Ecuador's Labor Code (LC, 2005), the Childhood and Adolescence Code (C&A, 2003), and Resolution 16 of the National Council for Childhood and Adolescence (CNNA16, 2008).

Our review of the national legislation found no detailed terminology to define the different categories of child employment or child labor, like "light work" or "hazardous household services." However, Ecuador labor laws provide sufficient information on the obligatory components set forth in the relevant international treaties, such as defining the basic minimum working age and the minimum age for hazardous work, limits on hours and conditions for working adolescents, and the abolition of the worst forms of child labor (see Appendix A for further details on each of these elements).

In addition, Ecuador's Labor Code (art. 138) provides a framework for the types of work that are prohibited to minors by incorporating ILO's description of what constitutes the worst forms of child labor, and provides a brief list of work that "by its nature or conditions" may be harmful to the health, security, or morality of minors. The C&A Code and CNNA 16 also provide a list of the types of work that are prohibited for adolescents; this list is closely related to the hazardous child labor list in the Labor Code. These lists operationalize the definition of hazardous child labor which are set forth in ILO's Recommendation 190.

For the purpose of this evaluation, we apply the ILO child labor measurement framework criteria to the minor population of the study, students between the ages of 15 and 17 years.⁵ Because the minimum working age in Ecuador is 15, child labor that is not considered hazardous does not apply to our target population of 15- to 17-year-olds. Thus, in the context of this evaluation, adolescents between the ages of 15 and 17 were considered to be in child labor if they are in hazardous child labor (HCL). Specifically, adolescents are considered to be engaged in HCL if they are working in designated hazardous industries; in hazardous occupations; working long hours or at night or under hazardous working conditions, such as being exposed to dangerous substances or working at heights (please see Section 4.2 for more details).

We defined students as "minors" based on their age at baseline, at the time of random assignment. During the school year when the program was implemented, some 17-year-olds turned 18, and we no longer consider them minors. For these students, we applied the same hazardous work definitions used for students aged 15 to 17, with one minor exception. This is described in further detail in Chapter 4 and also in Appendix A.

1.2.2 The Role of Socio-emotional Skills

There is no consensus on the main determinants of child labor and, by extension, on the best policies to combat it. Importantly, most approaches to combat child labor are multi-faceted approaches that attempt to deal with several different determinants at the same time. Broadly speaking, one school of thought considers poverty and economic destitution to be the principal drivers of child labor. According to this line of reasoning, poverty alleviation schemes such as provision of cash transfers to families and youth are the

⁵ See http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_223907.pdf.

most appropriate remedy. Another school of thought attributes equal, if not paramount importance to social and cultural norms in shaping attitudes and beliefs about the permissibility of child labor practices and low student enrollment. In this view, educational interventions such as compulsory schooling or the provision of quality education and rights-awareness training can dramatically alter perceptions about the special protections that should be accorded to children.⁶ These approaches focus on external factors affecting labor outcomes of children.

Child labor research offers important insights into the complexities of the child labor problem but still leaves many questions unanswered. This evaluation examines internal factors that may be affecting child labor outcomes. It contributes to the evidence base on interventions to alleviate child labor and thus helps to narrow the knowledge gap by specifically focusing on the role of individual socio-emotional skills in improving youth outcomes among disadvantaged adolescents. Socio-emotional skills are described in the literature as “those attitudes, behaviors, and strategies which facilitate success in school and workplace, such as motivation, perseverance, and self-control.” They are termed “socio-emotional skills” – or “social, emotional, and affective skills” – to differentiate them from cognitive or academic skills.⁷

Economists and psychologists have explored a broad range of personal and social attributes and much of the work in this area has focused on personality traits, particularly the “Big Five” or five factor model of personality. The “Big Five” personality factors that have been extensively researched by industrial–organizational psychologists since 1990. The Big Five framework is currently being used by the Organization for Economic Co-operation and Development (OECD) for the Study on Social and Emotional Skills (SSES), which is a new international three year study (started in mid-2017) that assesses 10- and 15-year-old students in a number of cities and countries around the world.⁸

The Big Five personality factors are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism/emotional stability.⁹ Within this broad framework, we can map the socio-emotional skills targeted by the YPD program— in particular self-efficacy, conflict resolution, communication, and assertiveness. Within the educational literature, self-efficacy has emerged as

⁶ Hazarika, G., & Bedi, A. S. (2006). Child work and schooling costs in rural northern India. Bonn, Germany: Institute of Labor Economics (IZA) Working Paper; Basu, K. (1999). Child labor: Cause, consequence, and cure, with remarks on International Labor Standards. *Journal of Economic Literature*, 37(3), 1083–1119; Edmonds, E. V., & Pavcnik, N. (2005). Child labor in the global economy. *Journal of Economic Perspectives*, 19(1), 199–220.

⁷ Gutman, L. M. & Schoon, I. (2013). The impact of noncognitive skills on outcomes for young people: Literature review. Report prepared for the Education Endowment Foundation. London, England: Institute of Education, University of London.

⁸ OECD EDU/WKP (2018)9. Social and Emotional Skills for Student Success and Well Being: Conceptual Framework for the OECD Study on Social and Emotional Skills. OECD Working Paper Series.

⁹ Openness refers to the tendency to be open to new aesthetic, cultural and intellectual experiences. Conscientiousness indicates the tendency to be organized, responsible and hardworking; extraversion indicates orientation to one’s interests and energies toward the outer world of people and things rather than the subjective world of inner experience; agreeableness indicates the tendency to act in a cooperative unselfish manner; emotional stability refers to the predictability and consistency in emotional reactions with absence of rapid mood changes (definitions based on American Psychological association as reported by Heckman et al., 2014).

complementary to the Big Five personality factors because it predicts academic performance, but also because its operational content identifies pathways that lead to improved performance and successful outcomes, in that it pinpoints specific goal setting, regulated behaviors, investment of effort, persistence and resilience in effort and processing previous mastery experiences within the academic setting.¹⁰ Among the Big Five, agreeableness is most closely associated with processes and outcomes during interpersonal conflict and conflict resolution skills.¹¹ Assertiveness abilities are associated with agreeableness and extraversion.¹²

1.2.3 Prior Research

Socio-emotional skills have largely been overlooked in international development programming until recently. However, research evidence indicates that socio-emotional skills often predict meaningful life outcomes with as much power as (or more power than) cognitive skills. In a seminal work, Heckman, Stixrud and Urzua (2006)¹³ analyzed data from the 1979 United States National Longitudinal Survey of Youth which included measures of social and emotional skills, specifically, indicators of loss of control and self-esteem. The authors found that both cognitive and non-cognitive skills are equally important to determine a variety of economic and social outcomes including schooling, work experience, occupational choice and participating in a range of risky behaviors.

Heckman and Kautz (2012)¹⁴ analyzed the interplay between personality and cognitive skills using data from the General Educational Development (GED) program. The authors find that that GED graduates, when compared to regular high school graduates, have very similar levels of cognitive skills but poorer social and emotional skills. On the other hand, they have better cognitive skills than other high school dropouts, but social and emotional skills are equally poor among both groups of high school dropouts. In comparison with regular high school graduates, GED graduates had much lower graduation rates from college; shorter spells of employment; lower hourly wages; higher divorce rates; worse health; a higher propensity for smoking, drinking, violent and criminal behavior; and a greater chance of being imprisoned.

These papers have been particularly influential and have alerted economists of the potential significance of socio-emotional skills to contribute to economic success. In fact, socio-emotional skills may not only have strong positive effects on improving academic learning, but can also be associated with positive

¹⁰ McIlroy, D., K. Poole, O.F. Ursavas, & A. Moriarty. (2015). Distal and proximal associates of academic performance at secondary level: A mediation model of personality and self-efficacy. *Learning and Individual Differences*, 38. pp. 1-9. ISSN 1041-6080

¹¹ Jensen-Campbell, L. & W. Graziano. (2001). Agreeableness as a Moderator of Interpersonal Conflict. *Journal of Personality*, 69. Pp. 323-362

¹² Kammrath, L. K., McCarthy, M. H., Cortes, K., & Friesen, C. (2015). Picking one's battles: How assertiveness and unassertiveness abilities are associated with extraversion and agreeableness. *Social Psychological and Personality Science*, 6(6), pp. 622-629.

¹³ Heckman, J., J. Stixrud and S. Urzua (2006), "The effects of cognitive and non-cognitive abilities on labor market outcomes and social behavior", *Journal of Labor Economics*, Vol. 24, pp. 411-482.

¹⁴ Heckman, J. and T. Kautz (2012), "Hard evidence on soft skills", *Labour Economics*, Vol. 19, pp. 451-464.

effects in later life, such as improving health and labor outcomes and reducing crime rates.^{15,16} Cognitive and socio-emotional skills are complementary and mutually reinforcing. The various skills cross-fertilize each other to enable human development and performance improvements.^{17,18}

The research also points out that socio-emotional skills are not set in stone at birth, as indicated by Bandura's pioneer research on social cognitive theory.¹⁹ In addition, although there is evidence that investment in early childhood programs tends to have higher rates of return than investment in adolescent programs, there are advantages to remediation in later years as well. In fact, during the adolescent years, socio-emotional skills tend to be more malleable than cognitive skills because new aspects of socio-emotional skills tend to emerge with maturity.²⁰ As a result, if the early years have been compromised, it is generally more effective during the adolescent years to focus on developing socio-emotional skills to remediate early-life skill deficits rather than trying to boost cognitive skills.²¹

The evidence on the effectiveness of remediation interventions for adolescents is scarcer than the evidence on early-childhood interventions. Different authors classify adolescent's remediation programs into different categories. Kautz et. al (2014)²² classify adolescent remediation interventions into four categories: (1) mentoring programs for at-risk youth; (2) residential-based education programs for school dropouts; (3) in-school professional training; and (4) incentives for student performance. Several of the studies indicate short-term benefits; however, very few adolescent interventions have had long-term follow-up to assess whether these effects persist. The authors also note that most adolescent intervention programs measure fewer outcomes and focus mainly on schooling and employment.

The YPD program is an in school-program that focuses on teaching socio-emotional skills through a variety of activities conducted in a classroom setting. YPD was designed to help youth develop an identity, communication skills and self-efficacy based on accomplishments. Such interventions motivate acquisition of work-relevant skills among disadvantaged youth while providing them with discipline and guidance. This is particularly important in the contexts of at-risk youth included in the evaluation where many might come from families in which such guidance is missing.

¹⁵ Kautz, T., et al. (2014). *Fostering and measuring skills: improving cognitive and non-cognitive skills to promote lifetime success*. NBER Working Paper No. 20749. Cambridge, MA: National Bureau of Economic Research.

¹⁶ Farrington, C.A., et al. (2012). *Teaching adolescents to become learners. The role of non-cognitive factors in shaping school performance: A critical literature review*. Chicago: University of Chicago Consortium on Chicago School Research.

¹⁷ Ibid.

¹⁸ Borghans, L., Meijers, H., & ter Weel, B. (2008). The role of non-cognitive skills in explaining cognitive test scores. *Economic Inquiry*, 46 (1), 2-12.

¹⁹ Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

²⁰ Farrington, C.A., et al. (2012). *Teaching adolescents to become learners. The role of non-cognitive factors in shaping school performance: A critical literature review*. Chicago: University of Chicago Consortium on Chicago School Research.

²¹ Kautz, T. et al. (2014). *Fostering and measuring skills: improving cognitive and non-cognitive skills to promote lifetime success*. NBER Working Paper No. 20749. Cambridge, MA: National Bureau of Economic Research.

²² Kautz, T., et al. (2014). *Fostering and measuring skills: improving cognitive and non-cognitive skills to promote lifetime success*. NBER Working Paper No. 20749. Cambridge, MA: National Bureau of Economic Research.

There are number of studies examining the impact of different kinds of school-based interventions to enhance students' social and emotional learning. Durlak et al. (2011) conducted an extensive meta-analysis of 213 school-based social and emotional learning (SEL) programs involving 270,000 students from kindergarten to high school and found a moderately high standardized effect size for social and emotional skill development when comparing treatment groups to controls.²³

Some literature suggests that school-based interventions are less optimal venue for adolescents because, especially in developing countries, many youth and young adults are not in school, they operate in many contexts, schedules are varied, students change classrooms and teachers regularly, and the influence of peers increases dramatically (Guerra et al., 2014).²⁴ It is also important to consider that while interventions in schools may take various forms, the effect on students' socio-emotional skills is generally mediated by the teacher in the classroom.

The Guerra et al. study describes how school-based interventions can involve: (1) training teachers to possess social-emotional skills that they can model in the classroom, (2) classroom lessons and activities to improve classroom climate, (3) social-emotional skills curriculum taught as a school subject, (4) teaching practices that incorporate social-emotional learning into the methodology for teaching academic content, and (5) after-school enrichment programs. The YPD intervention shares some of the same features, in particular as described in point (4). Thus, the extent to which the intervention can affect students' socio-emotional skills depends on how teachers adjust their teaching practices to incorporate socio-emotional learning. This aspect is analyzed in detail in Chapter 3.

This impact study of the effectiveness of the YPD program contributes to the research literature in several ways. The evaluation design provides causal evidence on youth outcomes. Because YPD targets adolescents, our study helps expand the evidence base on effective adolescent remediation programs. Furthermore, to begin to understand the mechanisms of change, we investigate a much more comprehensive set of outcomes than previous research has examined. These outcomes include cognitive skills, as measured by test scores; self-reported measures of socio-emotional skills and behavioral indicators that can be considered proxies for socio-emotional development, such as school attendance, program completion, and disciplinary infractions; and labor market outcomes, such as likelihood of working, likelihood of participating in hazardous work, number of hours worked, likelihood of participating in irregular employment, and likelihood of participating in other risky activities. Finally, we also explore the main mechanisms of change through a rich set of qualitative research questions that can help shed light on the identified changes (or lack thereof).

²³ Durlak et al. (2011). "The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions", *Child Development*, 82, 405-432.

²⁴ Guerra, Nancy, Kathryn Modecki, and Wendy Cunningham (2014). *Developing Socio-emotional skills for the Labor Market*. Policy Research Working Paper 7123, The World Bank.

1.3 PROGRAM DESCRIPTION

1.3.1 The CBA Program and ECA Curriculum

The Educación Básica Superior Extraordinaria—Ciclo Básico Acelerado (CBA) is a large-scale alternative education program implemented in municipal schools in Quito targeting 15- to 25-year-olds who have not completed their basic general education requirements. Young people who dropped out of the school system during the final three years of their basic education (8th, 9th, and 10th grades which correspond to the equivalent of middle school in the U. S.) are eligible to enroll. The CBA enables them to complete their education in an accelerated 11 months. Students who graduate are then qualified to continue to the next educational level, Bachillerato General Unificado (high school equivalent), either in its regular or accelerated form. The Quito Secretariat of Education initiated the CBA program in 2009; since then, about 12,000 youth have successfully graduated.²⁵

During the 2016–2017 school year, the Secretariat of Education implemented CBA in 15 municipal schools in Quito and surrounding areas, covering approximately 1,800 students. Classes took place during the afternoon, usually from 2:00 p.m. to 6:45 p.m., when regular students do not use the school buildings. It was free of charge and included educational materials, school supplies, and uniforms for students. The CBA curriculum included seven subjects: Spanish language and literature, mathematics, English language, natural sciences, social studies, physical education, and cultural and artistic education (ECA for its Spanish acronym). At the end of the school year, students take standardized final exams for each subject. To complete the CBA and graduate, students need at least 7 out of 10 points to pass each subject and must have fewer than 25 unjustified absences.

In a continuous effort to improve the effectiveness of the CBA program, the Secretariat of Education contracted in 2014 with Young Potential Development Ecuador (YPDE), a local social enterprise, to pilot a training program for some of its teachers, called YPD program.²⁶ In previous years, the CBA director had made arrangements with YPDE coordinators to implement YPD in only a few of the municipal schools. Over the years, more schools were added to receive this training. What distinguishes the YPD training program from the rest of the CBA curriculum is its focus on strengthening the socio-emotional skills of these at-risk youth. Specifically, YPD’s goal is to help CBA teachers innovate in their daily classroom practices by fostering an engaging learning environment and promoting student interaction. The YPD program trains and supports teachers to adopt interactive teaching methods that foster students’ socio-emotional skills. More details about the YPD program and main activities are included in Section 1.3.2.

After discussions between YPDE and Secretariat staff, it was decided that for the 2016–2017 school year, the YPD training program would be implemented as part of the ECA subject, which had just been added to the CBA curriculum that same year. The general objectives of the ECA curriculum were to “encourage

²⁵ See <http://www.educacion.quito.gob.ec/index.php/98-inscripciones-extraordinarias-para-el-cba-hasta-el-15-de-septiembre>

²⁶ To avoid confusion, we refer to the program as YPD and to the implementing organization as YPDE.

the knowledge of artistic creations and cultural heritage (local and universal); facilitate understanding of the roles that art and culture play for the individual and for society; and develop and use artistic skills in daily or professional activities, either through individual creations or participation in collective projects.”²⁷ The ECA class was meant to foster students’ personal and aesthetic development, creativity, conflict resolution, and critical thinking. As such, the focus of this subject is less on predetermined content and more on developing a set of soft skills that will help students “enjoy, appreciate, and understand the products of art and culture, as well as express themselves through various artistic languages.”

1.3.2 YPD Program and Main Activities

The YPD program is based on a teacher training model that seeks to develop interpersonal and career-oriented skills to prepare these youth for higher education, productive work, and entrepreneurship. The YPD program is implemented in one academic year during the ECA class for two consecutive class periods of 45 minutes each week.²⁸

The main YPD program goals are to:

- Introduce project-based learning strategies and innovative activities that are career-oriented and serve as relevant introductions to higher education and work. This goal is accomplished through training of teachers. Teachers incorporate the program activities into daily school lessons, teaching plans, and classroom activities, thus making school interesting, engaging, and valuable for students; preventing dropouts; and improving school climate through improved teacher–student interactions.
- Promote better self-perceptions and positive and proactive attitudes among at-risk youth, so they become empowered to contribute to society through higher education, entrepreneurship, and citizenship. The team-building project-based exercises are intended to enhance self-efficacy, communication, and other socio-emotional skills among students.
- Equip youth with problem-solving skills and greater empathy.
- Promote interaction among trained teachers who are empowered to effect change in the interpersonal relationships in their schools, in the school climate, and in teaching practices in both the short term and the medium term.

Through a year-long curriculum, supported by weekly one-on-one coaching, teachers implemented the YPD program. Each treatment teacher received the YPD Box, an important classroom preparation toolkit consisting of a series of DVDs with more than 80 hours of content that present the basis for experiential

²⁷ General Basic Education curriculum adaptation for CBA. See https://educacion.gob.ec/wp-content/uploads/downloads/2017/10/Adaptaciones-Curriculares_EGBS_BGU.pdf

²⁸ The Cultural and Artistic Education class covers a range of topics (music history, theater, and the like) in lecture style. During the first two years of implementation, the YPD intervention was implemented during the Citizenship Education class, which covered diverse topics at the discretion of teachers and to some extent in an ad-hoc fashion. Topics might include sexuality, intra-family violence, ethics and values, human rights and democracy, political participation, and civic engagement.

learning. The YPD Box included 25 "learning dynamics," or experiential learning topics, targeted at different teacher and student learning styles with the objective of developing personal skills that fall under the general categories of leadership, communication, creativity, and energy. Each learning dynamic consists of a series of video clips that introduce the activity, explain the objective(s), provide guidelines on how to execute the activity, and deliver a conclusion or reflection on the activity.

Teachers could use the videos to introduce a classroom activity or to guide conclusion exercises with their students. In addition, each teacher received a handbook that provided clearly defined objectives and a methodology for each lesson (also called a "challenge"), including practical recommendations on how to set up the classroom for better student–teacher interaction, how to address students' questions, or how to offer constructive feedback.

The weekly YPD activities included a one-on-one class preparation between the YPD captain and the teacher and the delivery of the in-class learning dynamics during two consecutive 45-minute periods. In a usual week, the YPD captain emailed the teacher general guidelines in advance. The two met for about half an hour to prepare for next week's class. YPD captains stayed in touch with teachers by telephone to arrange any logistics or answer questions. The in-class portion of the activities consisted primarily in YPD captains first conducting the learning dynamic themselves in one classroom, with teachers mainly observing and offering support. This was meant to serve as a model of how the learning dynamic should be carried out. Teachers were then expected to repeat what they had just observed in the next classroom. As the teachers became more familiar with the YPD methodology, the captain would slowly transition the teachers to a more active role in the dynamics, ultimately reversing the roles.

In addition, YPD staff organized four separate group trainings with all treatment teachers every two months to ensure teachers had the time to reflect on their progress and provide feedback. The group training consisted of personal work with a YPD learning dynamic and other recreational activities. This was also meant to help the teachers better understand what it is like for their students to receive the training and develop empathy. For two of these group trainings, the school coordinators were also invited to attend. A fifth training session was provided to the staff of the Secretariat.

In Chapter 3, we provide additional detail about the CBA and YPD programs and discuss how the YPD was implemented during the academic year 2016–2017. Appendix B provides more detailed information about the YPD curriculum.

1.4 PROGRAM LOGIC

The main objective of this evaluation is to estimate the effect of the YPD program on several youth outcomes listed in Section 1.5. To better understand the causal pathways through which we expect these effects to be generated, we developed a program logic model to guide the evaluation (Exhibit 1).

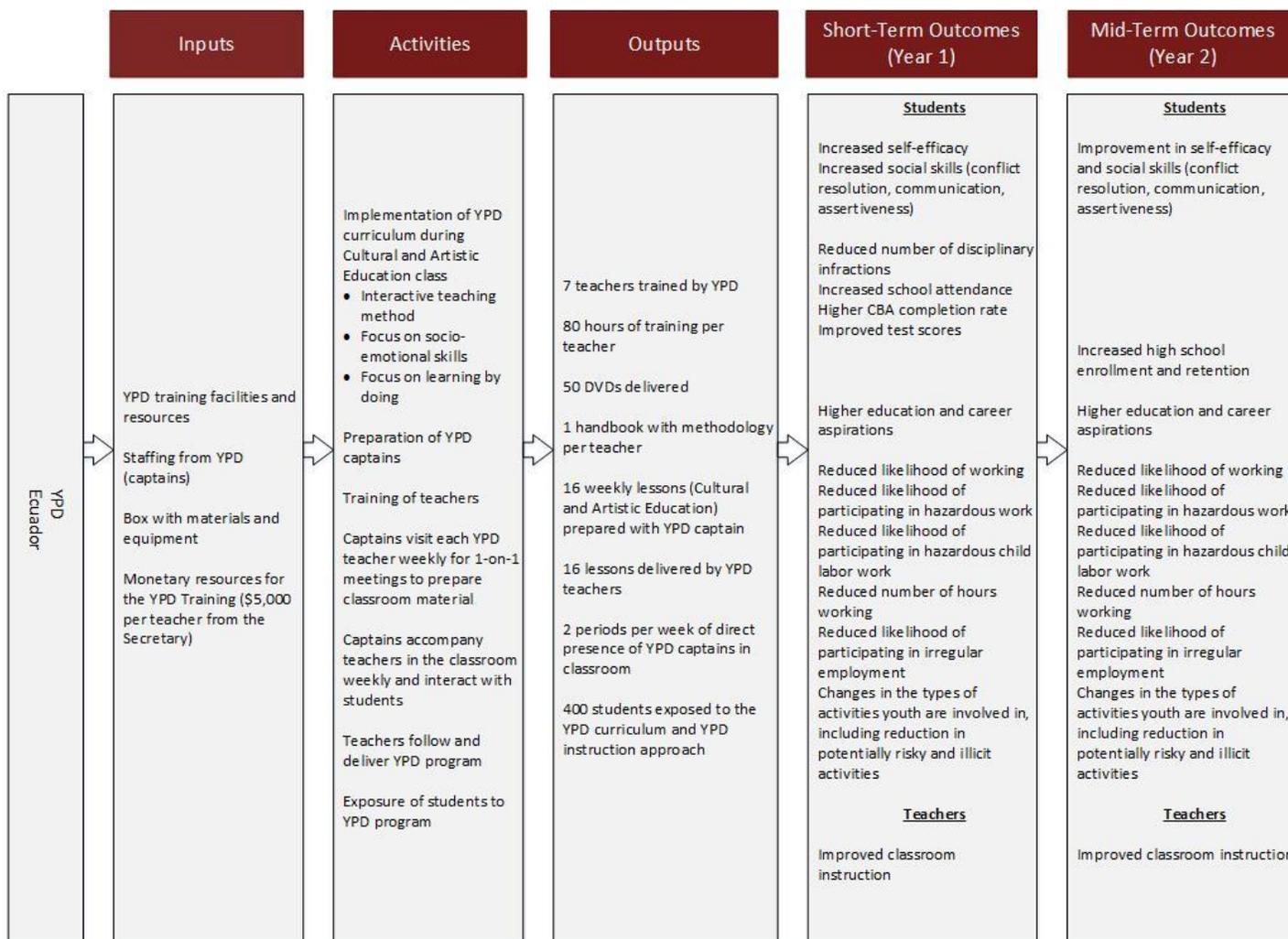
The inputs are defined as the financial, human, and material resources provided by YPD implementers to support the program activities. The activities comprise the actions taken by the YPD implementers (leadership staff and captains) and by the YPD-trained teachers to convert the inputs into outputs (e.g.,

number of hours of YPD training, number of students exposed to the YPD program, etc.). The outputs are the things that were “produced” by the YPD program used by the target population to achieve the intended results. Finally, the short- and mid-term outcomes are the expected effects of the program on participating students and teachers. Understanding the relationships among inputs, activities, and outputs is critical for understanding the mechanisms through which the program generates impacts on the outcomes experienced by beneficiaries.

We next discuss the mechanisms that drive the change in the outcomes that are hypothesized to materialize. While YPD students are exposed to direct learning of socio-emotional skills during the cultural and artistic education classes taught by YPD-trained teachers, the YPD effect may extend further for two reasons. First, once students improve their socio-emotional skills, they are likely to become more engaged in school overall which might improve their engagement and attention in other subjects. In this case, we would expect students to do better in all classes, not only the YPD classes (ECA). Second, the YPD teachers, who usually teach Cultural and Artistic Education, are likely to use some of the same YPD teaching methods in the other subjects they teach, even without the direct support of an YPD captain in those classes. The YPD teaching method is focused on a teaching approach that is, at least in part, transferable across teaching subjects, although its direct application might be more evident in classes like ECA. Therefore, students would also benefit from improved and more engaging classroom instruction in other classes taught by the YPD trained teachers. Overall, YPD is expected to positively affect other school outcomes such as reduced disciplinary infractions, increased school attendance, higher CBA completion rate, and improved test scores.

Additionally, the improved self-efficacy coupled with positive school outcomes could lead to higher education and career aspirations which students would have not been able to achieve for themselves in absence of the program. Finally, the increased self-efficacy and enhanced social skills may enable youth to make different labor market choices leading to a reduced likelihood of working, a reduced likelihood of participating in hazardous (child labor) work, a reduced number of hours working, a reduced likelihood of participating in irregular employment, and changes in the types of activities youth are involved in, including a reduction in potentially risky and illicit activities.

Exhibit 1. Logic Model for the YPD Intervention



Contextual Factors: Institutional collaboration, CBA staffing and financial resources, school infrastructure, household/parental support, crime rates, teen pregnancy, distance to school.

Overall, the logic model shows that students are expected to rejoin the school system, receive a high quality education tailored to their needs, and be more likely to further continue their education and find a higher-paying occupation after completion of the program. The expectation is that adolescents who previously dropped out of middle-school and were working (most likely employed in an unsafe and/or underpaid occupation) will have a better chance to successfully reintegrate into the formal education system. These students would not only receive an accelerated curriculum that will allow them to catch up, but also receive complementary education through the YPD program. As a result of YPD program, participants are potentially more likely to improve their self-efficacy, communication, conflict resolution, and assertiveness abilities, to achieve higher school outcomes and improve their labor market outcomes.

1.5 RESEARCH QUESTIONS

The main goal of this study is to determine whether the YPD intervention is successful in mitigating HCL among at-risk youth enrolled in the YPD program (confirmatory outcome). Moreover, we examine the program’s effects on additional (exploratory) outcomes beyond the prevalence of HCL, such as educational outcomes, socio-emotional skills, aspirations, and types of (risky/illicit) activities in which youth are involved in line with our logic model.

Exhibit 2 lists the specific research questions we address in the impact evaluation and outcomes of interest measured in this study using quantitative data. All outcome variables for the impact analysis, except for the school outcomes, are obtained from student survey data. School outcomes are based on administrative records obtained from the Quito Secretariat of Education. Additional details about the data sources are provided in Section 2.5. How each of the outcome variables is constructed is presented in Chapter 4.

Exhibit 2. Impact Research Questions and Outcomes

| Research Question | Outcome | Outcome Type |
|---|--|--------------|
| SOCIO-EMOTIONAL SKILLS | | |
| 1. Does YPD improve beneficiaries’ self-efficacy? | Average self-efficacy score | Exploratory |
| 2. Does YPD improve beneficiaries’ social skills (conflict resolution, communication skills, and assertiveness)? | Average social skills score | Exploratory |
| 3. Does YPD improve beneficiaries’ perception of school climate? | Average school climate score | Exploratory |
| LABOR OUTCOMES AND HOUSEHOLD CHORES | | |
| 4. Does the YPD program affect the likelihood of beneficiaries participating in hazardous (child) labor? ^(a) | Prevalence of youth in hazardous (child) labor | Confirmatory |
| 5. Does the YPD program affect the likelihood of beneficiaries working or not? | Prevalence of youth in employment | Exploratory |
| 6. Does the YPD program affect the beneficiaries’ number of hours worked? | Average hours worked last week | Exploratory |
| 7. Does the YPD program affect the likelihood of beneficiaries participating in irregular employment? | Prevalence of youth in irregular employment | Exploratory |

| Research Question | Outcome | Outcome Type |
|--|--|--------------|
| 8. Does the YPD program affect the number of hours working in household chores? | Average hours spent on household chores last week | Exploratory |
| 9. Does the YPD program affect the likelihood of doing chores at night? | Prevalence of youth doing household chores at night | Exploratory |
| EDUCATION AND CAREER ASPIRATIONS AND OTHER ACTIVITIES | | |
| 10. What is the impact of the YPD program on beneficiaries' educational aspirations? | Prevalence of youth with higher expectations | Exploratory |
| 11. Does the YPD program affect the likelihood of currently being part of a gang? | Prevalence of youth currently participating in gangs | Exploratory |
| 12. Does the YPD program affect the likelihood of ever using drugs? | Prevalence of youth ever used drugs | Exploratory |
| SCHOOL OUTCOMES | | |
| 13. Do CBA students exposed to YPD have higher completion rates than regular CBA students? | Prevalence of youth completing the program | Exploratory |
| 14. What is the impact of the YPD program on beneficiaries' behavioral score? | Prevalence of youth with disciplinary infractions | Exploratory |
| 15. What is the impact of the YPD program on beneficiaries' school number of days in attendance? | Average school attendance | Exploratory |
| 16. What is the impact of the YPD program on beneficiaries' test scores? | Average test scores | Exploratory |

^(a) We also analyze the various components of hazardous child labor, i.e., whether the youth work in hazardous industries or occupations, for long hours, at night, or under other hazardous working conditions that expose them to dangerous substances or extreme cold, heat, noise, and so on; to injuries or illnesses; or to physical, emotional, or sexual harassment.

We supplemented the impact evaluation with a fidelity of implementation evaluation to provide more in-depth information on how the program was rolled out, how and why changes occurred as a result of the program, as well as to explore further the mechanisms of those changes. The qualitative research questions are organized into two thematic areas: (1) program implementation, including the fidelity with which the program activities are implemented and potential for treatment spillovers and contamination; and (2) mechanisms of change, including qualification of student success and understanding how the program activities enabled the results (see Exhibit 3). All qualitative data were obtained through key informant interviews, focus group discussions, and administrative records (refer to Section 2.4 for additional details on data sources).

Exhibit 3. Qualitative Research Questions

| Program Implementation |
|---|
| 1. According to program stakeholders and teachers , were program activities implemented as planned? What types of challenges were faced during program implementation? What types of program modifications were made, if any? |
| 2. How did the YPD program influence treatment teachers' pedagogical practices, their perceptions of classroom climate, student performance, attendance, and socio-emotional skills? |
| 3. What additional supports or activities should be included in this intervention to augment or increase expected outcomes? |

| |
|---|
| 4. To what extent have treatment teachers shared YPD pedagogical practices and resources with control teachers ? To what extent have treatment teachers used YPD pedagogical practices and resources when teaching other subjects (i.e., other than the Cultural and Artistic Education subject)? |
| 5. Were repeating treatment teachers and/or first-time treatment teachers affected equally or differently by the intervention? |
| Mechanisms of Change |
| 6. To what extent did students modify their education and career aspirations as a result of the program? How did they make their education plans and choices? What factors contributed to their decision-making? |
| 7. For students currently continuing their education, did they make their schooling choices as a result of the program? How did they make their schooling choices? What factors contributed to their decision-making? |
| 8. For students currently working, did they make their work choices as a result of the program? How did they make their occupation choices? What factors contributed to their decision-making? |
| 9. To what extent did students feel they gained additional skills, tools, and strategies to help their decision-making process as a result of the program? To what extent did students view their self-efficacy, conflict resolution, communication, and assertiveness skills as a result of the program? Did they improve? |
| 10. Did the benefits and impacts of the intervention vary by gender? What was the effect of intervention dosage level on program effects? |

Chapter 2: Study Design and Methodology

2.1 STUDY DESIGN

2.1.1 Study location and participants

During the 2016–2017 school year, the Secretariat of Education implemented the CBA in 15 municipal schools in Quito and the surrounding areas, targeting at-risk youth who missed one to three years of schooling or lagged more than three years behind in school.²⁹ Eleven of those schools were designated by the Secretariat to receive the YPD program. Only seven of the largest schools with YPD were eligible to participate in the study because they each had two teachers teaching the ECA class, whereas smaller schools had only one teacher for that subject. The schools with two ECA teachers allowed us to carry out an experiment where one teacher received the YPD training, and the other did not. This school-eligibility criterion was necessary to be able to compare students in classrooms with a YPD-trained teacher and those in classrooms with a regular teacher. Thus, we included a total of seven schools and 14 teachers in the impact evaluation study. All minor students in the study schools were included as study participants.

The seven study schools were geographically spread out across Quito and the surrounding areas. Exhibit 4 shows the location of the participating schools in red and the rest of the CBA schools, which are excluded from the study, in green. The location of the seven municipal schools suggests that at-risk youth from all parts of Quito could potentially find a geographically close school to attend and could be included in the study.

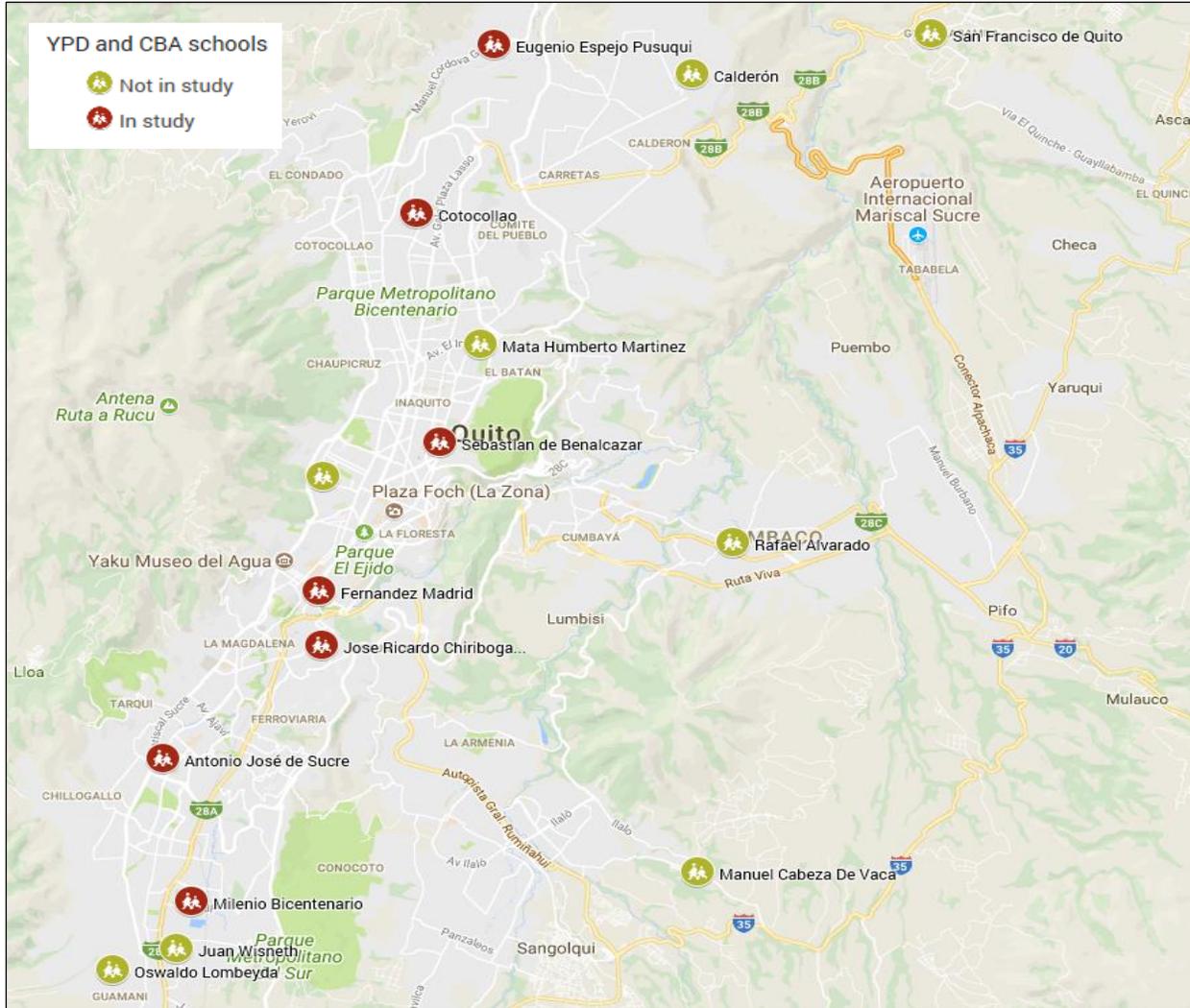
At the cornerstone of the evaluation is the use of an experiment to randomly allocate students to classrooms taught by a YPD-trained teacher (i.e., treatment group) and students randomly assigned to classrooms taught by a regular teacher (i.e., control group). We implemented the randomization process during the last two weeks of October 2016. Using student lists provided by the Secretariat, the IMPAQ evaluation team assigned 806 students, aged 15 to 17 at that time, into classrooms using a computerized lottery to ensure that students were assigned to classrooms randomly. Students in the treatment group were assigned to classrooms with a YPD-trained teacher, while students in the control group were assigned to classrooms with a regular ECA curriculum taught by a non-YPD-trained teacher.

Our randomization process included two stratification steps. As the population of CBA students included some who were aged 18–25 years, we first stratified the student lists by age because Ecuadorian law prohibits minors from being in the same classroom with older students. Furthermore, we stratified the

²⁹ Students in Ecuador who repeat a grade more than three times lose their right to enroll in the regular schools for the following year.

student lists by gender because the Secretariat requires a balanced number of boys and girls in all the classrooms in each school.

Exhibit 4. Location of YPD and CBA Schools in Quito



School capacity constraints were an additional determinant in the randomization process. Each school had a per-classroom capacity limit somewhere between 35 and 40 students. However, our initial random allocation resulted in several classrooms for minor students exceeding the maximum capacity at their schools. Therefore, with the approval of the Secretariat, to stay within the classroom capacity limits, a few 17-year-olds who were about to turn 18 were grouped with the older students. In other words, we moved

18 of the oldest minor students in the treatment group and 15 of the oldest minor students in the control group into classrooms with older students.³⁰

Exhibit 5 presents a visual flowchart of the evaluation design with the number of schools, classrooms, and students involved in the study. After we assessed the eligibility of 15 municipal schools, we retained seven to be included in the study. In those schools, a total of 806 students were randomly assigned to 22 classrooms: 403 students were randomly assigned to 11 classrooms taught by the 7 YPD-trained teachers (these comprise the treatment group); 403 students were randomly assigned to 11 classrooms taught by 7 regular teachers (i.e., the control group). As mentioned above, some older students, aged 18–25, were also enrolled in our study schools. However, because fewer than 25 percent of enrolled students were over 18, they were grouped into a single classroom in most schools.³¹ Because random assignment was not possible for older students, this evaluation is focused only on the minor cohort for which randomized assignment was possible (i.e., students aged 15 to 17 at the time of randomization).

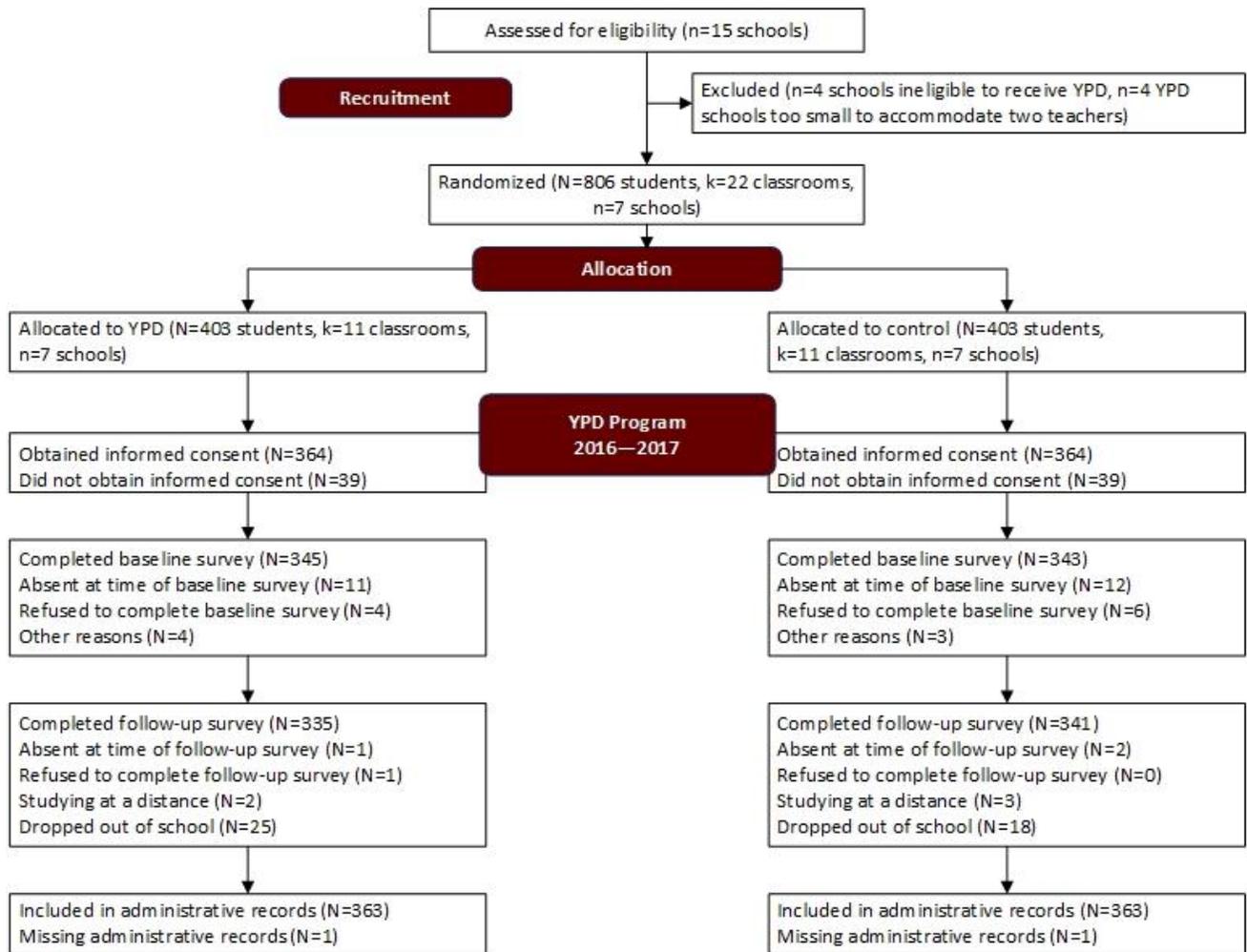
The rest of the diagram describes in further detail the size of our analytical samples. From the total of 806 students who were randomly assigned, 728 provided parental consent and assented to participate in the study (364 in the treatment group and 364 in the control group). At baseline, a total of 688 students out of the 728 with consent (345 in treatment and 343 in control) filled out the baseline survey. We were unable to collect a baseline survey from 40 students for various reasons: they were absent the day of the baseline (11 in treatment and 12 in control), refused to take the baseline survey (4 in treatment and 6 in control), or for other reasons (4 in treatment and 3 in control). At follow-up, a total of 676 students (335 in treatment and 341 in control) filled out the follow-up survey. We were unable to collect a follow-up survey from 52 students for various reasons: they were absent the day of the follow-up (1 in treatment and 2 in control), refused to take the follow-up survey (1 in treatment), were studying remotely³² (2 in treatment and 3 in control), or had dropped out of school (25 in treatment and 18 in control). Finally, we received administrative records for a total of 726 students (363 in treatment and 363 in control). Only one treatment student and one control student were missing in the school records obtained from the Secretariat of Education. Further details about the analytic samples are provided in Section 2.2.

³⁰ The average age of those moved to the older classrooms was 17.7 years.

³¹ In Fernández Madrid (the largest school), there were enough older students for two classrooms. We randomly assigned them to one treatment and one control classroom there.

³² Some students did not attend classes regularly for various reasons, such as health issues or legal problems. These students continued the program remotely and had homework assigned to them but had to turn in homework and take their exams at school.

Exhibit 5. CONSORT Flow Diagram of the Randomized Trial



2.1.2 Timeline of the Study

Exhibit 6 summarizes the timeline of the intervention and evaluation. As described above, the cohort of students recruited for the study is the one that enrolled in the CBA program for the 2016–2017 academic year. The Quito Secretariat of Education recruited the eligible students by conducting neighborhood outreach campaigns during the summer. To allow more students to enroll in the program and ensure a larger sample size for the evaluation, the Secretariat extended the school registration period until September 15, 10 days later than the official school start date for the CBA program.

In September and October 2016, enrolled students participated in orientation and diagnostic activities, including a behavioral test (*período propedéutico*, i.e., preparatory period). Because the CBA program accepts students aged 15 to 25, school coordinators initially organized classrooms according to students' ages, with the understanding that students would be reassigned after the preparatory period to comply with the experimental study design. At the end of the preparatory period, the Secretary reassigned the students according to randomized electronic lists provided by the IMPAQ evaluation team.

The baseline data collection took place in the fall of 2016. The same students were surveyed again at follow-up at the end of the academic year in the summer of 2017. Interviews and focus groups discussions were conducted between the fall of 2017 and early 2018. More details about the follow-up data collection and implementation activities can be found in section 2.4 and chapter 3, respectively.

Exhibit 6. Timeline of YPD implementation and evaluation

| | Date | Event |
|-------------|--------------------|---|
| 2016 | End of July/August | CBA recruits students for their upcoming academic year |
| | August | Cognitive testing of the survey instrument |
| | Mid-September | CBA academic year starts |
| | September/October | CBA preparatory period |
| | October | Pilot testing of baseline survey instrument |
| | End October | Randomization |
| | November 1-17 | Students' baseline data collection |
| | Mid-November | YPD implementation starts |
| 2017 | July | Pilot testing of follow-up survey instrument |
| | Mid-July | YPD implementation ends |
| | End July | CBA academic year ends |
| | July-August | Obtained school administrative data from the Secretary of Education |
| | July-September | Students' follow-up data collection |
| | End November | Focus groups with teachers |
| | Early December | Interviews with YPD staff |
| 2018 | January– February | Focus groups with students (only on weekends) |

2.1.3 Random Assignment Implementation

To balance the number of treatment and control classrooms across all schools, we worked with the Secretariat of Education and the school coordinators to assign schools and classrooms to arrive at a total of 11 treatment classrooms and 11 control classrooms. Except for Fernández Madrid school, the study schools had three classrooms of minor students apiece, so there could not be an equal number of treatment and control classrooms in each school. Instead, in Bicentenario, J.R. Chiriboga, and Cotocollao, we assigned one classroom to the treatment group and two classrooms to the control group (Exhibit 7). In Benalcázar, Espejo, and Sucre, we assigned two classrooms to the treatment group and one classroom to the control group. In Fernández Madrid, we assigned two classrooms to the treatment group and two classrooms to the control group.

Although it was not feasible to assign teachers to classrooms randomly (as discussed in Section 3.2), we assigned all minor students randomly to classrooms. The specific distribution of treatment and control classrooms among schools was determined in coordination with the Secretariat of Education for the following reason. At the time of random assignment, teacher schedules and classroom schedules had already been determined, so teachers knew what day of the week they would be teaching and in which

classroom, but they did not know which students would be assigned to their classrooms. Additionally, the Secretariat knew at the time of randomization which of the two ECA teachers in each school would receive the YPD training. In other words, the choice of which classrooms were in the treatment or control conditions was not random, because classroom assignment had to reflect the prior teacher assignment. Once the schools had established teacher and classroom schedules, changing that allocation in late October would have led to significant disruptions for the students and schools and to potential conflicts in teacher schedules. One limitation of not being able to assign teachers randomly to classrooms is that it is difficult to separate the effect of the program from the effect of the teacher and differences between treatment and control classrooms could reflect quality of individual teachers (please refer to section 4.6 for a more detailed discussion).

Exhibit 7. Treatment and Control Assignment of Classrooms by School

| School | Number of Classrooms | Treatment/Control Classroom Assignment |
|------------------------|----------------------|--|
| Bicentenario | 3 | 1T + 2C |
| Jose Ricardo Chiriboga | 3 | 1T + 2C |
| Cotocollao | 3 | 1T + 2C |
| Benalcázar | 3 | 2T + 1C |
| Espejo | 3 | 2T + 1C |
| Sucre | 3 | 2T + 1C |
| Fernández Madrid | 4 | 2T + 2C |
| TOTAL | 22 | 11T + 11C |

At the end of the school year, we verified the integrity of the random assignment by checking whether students were actually in the classrooms we assigned them. A total of 19 students (2 percent of the overall 806 initial sample, and 1 percent of the treatment group and 4 percent of the control group) were found at follow-up in a classroom different than the one to which they were originally assigned at baseline. Given the small number of students that moved across classrooms, we do not consider noncompliance a threat to the internal validity of the experiment.

Therefore, by design, the random assignment of minor students to classrooms enables us to estimate the effects of the YPD program on students by comparing the average student outcomes of the treatment classrooms with the average student outcomes of the control classrooms. Because both treatment and control group students are enrolled in the CBA, the estimated effects will reflect the marginal effect, for a representative minor CBA student, of participating in the YPD program.

2.2 ANALYTIC SAMPLE

This section describes the construction of the analytic samples, i.e., the samples used in the impact analysis results presented in this report (Exhibit 8). The first analytic sample for the survey-based outcomes includes students who completed the follow-up survey (676 students, Sample C). The second analytic sample for the survey-based outcomes includes students who filled out both the baseline and the

follow-up survey (638 students, Sample D). The availability of baseline survey information allows us to estimate regression models controlling for baseline values of students' demographic characteristics (e.g., race, parental education) and/or baseline values of the outcomes, potentially increasing the precision of our estimates.

Exhibit 8. Sample Size in Treatment and Control Groups

| Sample | Treatment | Control | Total | Difference (percentage points) |
|--|-------------|-------------|-------------|--------------------------------|
| A. Randomized students | 403 | 403 | 806 | N/A |
| B. Students with baseline survey* | 345 (85.6%) | 343 (85.1%) | 688 (85.4%) | 0.5 |
| C. Students with follow-up survey* | 335 (83.1%) | 341 (84.6%) | 676 (83.9%) | -1.5 |
| D. Students with both baseline and follow-up survey* | 316 (78.4%) | 322 (79.9%) | 638 (79.2%) | -1.5 |
| E. Students in administrative data* | 363 (90.1%) | 363 (90.1%) | 726 (90.1%) | 0.0 |
| F. Students in administrative data and with baseline survey* | 344 (85.4%) | 342 (84.7%) | 686 (85.1%) | 0.7 |

Note: Numbers in parentheses are percentages (%) computed based on the initial randomized sample. (*) Indicates that there are no statistically significant differences in percentages between treatment and control group.

Similarly, for the administrative-data-based outcomes (e.g., test scores), the first analytic sample consists of students included in the administrative dataset obtained from the Secretariat of Education (726 students, Sample E). The second analytic sample includes students with administrative data who also filled out the baseline survey (686 students, Sample F).

The actual sample sizes of each analytic sample is often smaller than those indicated in Exhibit 8, depending on whether follow-up-outcome or administrative-outcome variables have missing values. Appendix C reports the number and percentage of missing values for each of the investigated outcomes and analytic samples, as well as whether the percentage of records with missing values is similar between treatment and control groups. The data indicate that the percentage of missing values ranges between 0 and 15 percent for the survey-based outcomes and between 0 and 23 percent for the school-based outcomes. There are generally no statistically significant differences in the percentage of missing values between treatment and control groups, except for the prevalence of youth using drugs.

The analytic samples discussed above are a subset of the number of minor students initially randomized to the treatment or control classrooms (806 students, Sample A). Loss of sample, i.e., attrition, can arise for several reasons, including refusal to participate in data collection, being absent or unavailable on the day of data collection, not returning a consent form signed by a parent, dropping out of school during the year, and data collection staff's inability to locate student participants. We next examined overall and differential attrition after one year of implementation. Differential attrition between treatment and control groups can potentially be a threat to the validity of the randomized design.

The overall attrition ranges between 10 percent for Sample E and 16 percent for Sample C, both within the expected levels of attrition assumed in our initial power analysis when designing the study.³³ Furthermore, the differential attrition is very low in all considered analytic samples, ranging between 0 and 1.5 percentage points, suggesting little attrition bias (Exhibit 8).

We further investigated the correlation between some key baseline characteristics and student attrition status.³⁴ Even if the percentage of observations lost due to attrition (attritors) is similar between treatment and control groups, there could still be concern that the characteristics of attritors are different from those of the non-attritors, implying that the composition of the analytic samples changed compared to the initially randomized samples. (This would happen, for example, if boys dropped out at a higher rate than girls.)

As shown in Exhibit 8, a total of 130 students were lost due to attrition between the initially randomized sample (806) and the largest analytic sample for survey-based outcomes (i.e., non-attritors, Sample C, 676 students). The data indicate that the age and sex distribution is similar between these two groups: attritors and non-attritors are 16.2 and 16.1 years old on average, respectively. In addition, 36 percent of attritors are girls compared to 39 percent of non-attritors (the differences are not statistically significant). Similarly, a total of 80 students were lost due to attrition between the initially randomized sample (806) and the largest analytic sample for school-based outcomes (i.e., non-attritors, Sample E, 726 students). The data indicate that attritors and non-attritors are 16.2 and 16.1 years old on average, respectively, and that 40 percent of attritors are girls, versus 38 percent of non-attritors (the differences are not statistically significant). Together with the findings that levels of attrition are similar between treatment and control groups, the similarity in characteristics between the initial randomized sample and the follow-up analytic samples adds further confidence and reduces concerns about potential attrition bias.

Although attrition bias is of little concern, attrition still reduces the analytical sample size and thus the power to detect program impacts. We updated the power calculations for the main outcome of interest (HCL) and the socio-emotional skills using the final analytical sample size available. We assessed that with the current sample size we can detect reasonably small changes in self-efficacy and social-skills. The computed Minimum Detectable Effects indicate that we can detect a 4.2 percent and 4.4 percent change relative to the mean.³⁵ For HCL we can detect larger changes, i.e., about a 27 percent change (refer to Appendix D for more details).

³³ In our evaluation design plan, we assumed 16 percent attrition based on the 2014–2015 student dropout rate.

³⁴ We analyzed age and sex at baseline since these were two variables available for all attritors.

³⁵ These changes are equivalent to 0.23 to 0.30 effect sizes. Similar studies of the impacts of programs on students' socio-emotional outcomes typically achieve effect sizes of 0.30 or higher suggesting that our study will have sufficient statistical power to detect moderate program effects should they exist. See, for example, Blackwell, L., K. Trzesniewski, & C. S. Dweck, (2007) Implicit Theories of Intelligence Predict Achievement Across an Adolescent Transition: A Longitudinal Study and an Intervention. *Child Development*, 78(1):246–263; Durlak, J., R. Weissberg, & M. Pachan (2010). A Meta-Analysis of After-School Programs That Seek to Promote Personal and Social Skills in Children and Adolescents. *American Journal of Community Psychology*, 45(3-4):294–309. The effects on HCL are indirect in our study setting. Therefore, it is more difficult to find comparable references to assess the plausibility of the estimated MDEs.

2.3 BASELINE EQUIVALENCE

The follow-up analytic samples for the survey-based outcomes do not completely overlap with the analytic sample that was used to assess baseline equivalence (i.e., baseline analytic sample). In particular, the baseline analytic sample included 634 minors who returned the consent form and completed the survey at baseline. A total of 50 students from the baseline analytic sample could not be interviewed at follow-up because they dropped out of the program during the school year or could not be found at the time of follow-up data collection for other reasons. In addition, we were able to retrieve consent forms from 54 additional students at the time of follow-up data collection who were not included as part of the baseline analytic sample.³⁶ This yields a total of 638 students (634 - 50 + 54) for whom we received a signed consent form and who filled out the baseline survey, which is analytic Sample D in previous Exhibit 8.

Analytic Sample C (N = 676) includes an additional 38 students who filled out the follow-up survey but did not complete the baseline for various reasons (e.g., were absent the day of baseline survey administration).

Similarly, the follow-up analytic samples for the administrative-based outcomes do not completely overlap with the analytic sample used to assess baseline equivalence. In particular, 632 students from the baseline analytic sample were also part of the 686 students in the follow-up analytic Sample F.³⁷ The difference (686 – 632 = 54) are students for whom the consent form was retrieved at the time of follow-up data collection. Sample E includes an additional 40 students who were included in the administrative data but did not fill out the baseline survey (for a total of 726 students).

While we established baseline equivalence at baseline for most outcomes and demographic variables, there may be concern that baseline equivalence might be compromised if the analytic sample at follow-up is substantially different from the one at baseline, and that the members of the treatment and control groups used in the follow-up impact analysis may not have had similar characteristics at baseline. However, per What Works Clearinghouse (WWC) guidelines, given the combinations of moderate overall and low differential attrition, it is expected that our data will exhibit a low level of bias due to attrition, and we need not report again baseline equivalence for these new analytical samples.³⁸ For the sake of completeness, Appendix E presents a summary of baseline equivalence results for the main outcome variables from the baseline analytic sample, as described in the baseline report previously submitted to ILAB.

³⁶ These students verbally agreed to participate in the baseline survey but did not return the signed consent form that was distributed some days before data collection. The consent forms for these students were retrieved at the time of follow-up. Data for these students were analyzed only after retrieving their consent forms.

³⁷ Two students were in the baseline analytic sample but missing in the school records.

³⁸ See https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_v3_0_standards_handbook.pdf, TABLE III.1. The overall attrition rate is 16% for the sample of 676 students with follow-up survey data. Based on WWC guidelines, we can tolerate a differential attrition of up to 5.9%, under the more conservative assumptions. Similarly, the overall attrition rate is 21% for the sample of 638 students with both baseline and follow-up survey data, and we can tolerate a differential attrition of up to 5.3%, under the more conservative assumptions. In both cases, we meet this threshold.

2.4 FOLLOW-UP DATA COLLECTION

We collected several types of data for the evaluation during follow-up, i.e., student survey data, school administrative data and implementation tracker data, key informant interview data, and focus group discussion data. Each of these data sources is described in further detail below.

2.4.1 Student Survey Data

The follow-up student survey instrument (included in Appendix F) was based on the baseline tool with several modifications. The changes compared to the baseline survey included: (1) removing the section on demographic characteristics as it was not necessary to collect these again at follow-up, and (2) clarifying some language in several questions.

In collaboration with the YPDE and the Secretariat of Education, our data collection partner OPE piloted the follow-up survey in July 2017 in one CBA school that was not part of the evaluation to test the final version of the questionnaire, the survey protocols, and the logistic plans with school coordinators and teachers. During the pilot, the entire survey protocol was deployed just as it would be if the survey were being fielded. The pilot survey was administered to 20 respondents in a classroom during regular class time.

Consequently, there were no recommendations of major changes to the instrument except for several clarifying points, such as simplifying examples in some response options, simplifying some questions that were too long, implementing minor language edits using synonyms of existing words with which students might be more familiar. This was expected as the tool had already been cognitively tested and piloted once before baseline. Additionally, we instructed the proctors administering the survey in the classrooms to read key labor questions aloud and guide the pace of the survey administration to facilitate student comprehension of the questions.

The follow-up survey was administered to all minor students who had consented in a classroom setting at the end of the school year just before the final exam week (July 17–25, 2017). This step resulted in 607 out of 676 completed surveys.³⁹

To reach the minimum desired response rate of 84 percent, OPE continued data collection for two additional months and applied the survey in settings other than the classroom to another 69 students.⁴⁰ Specifically, during the last week of July, 34 students completed the survey either in OPE offices, in a classroom, or in the school yard or parking lot near the school. For 35 students whom OPE was unable to meet in person to administer the questionnaire, OPE conducted the survey by telephone between the

³⁹ There were no statistically significant differences in response rates between treatment and control groups.

⁴⁰ These students were not found in the classroom either because they had dropped out during the school year (37 students); were absent at the time of the survey (19); or were studying remotely because of health issues, legal issues, or other circumstances (13).

end of July and early September.⁴¹ For students not in classrooms at the time of the scheduled school visits, OPE made an average of 5 attempts to contact these students – using the previously collected telephone numbers for students, parents, friends, and relatives – either to agree on a location to administer the survey or to administer the survey by telephone.⁴²

2.4.2 Administrative and Implementation Tracker Data

The evaluation team obtained a range of administrative data from YPD implementers and the Secretariat of Education (see Exhibit 9).

Exhibit 9. Review of Administrative Records

| YPD Records | Secretariat Records | Teacher Records |
|---|--|---|
| <ul style="list-style-type: none"> ▪ YPD implementation tracker ▪ YPD Box and learning dynamics | <ul style="list-style-type: none"> ▪ School administrative records ▪ ECA curriculum ▪ Timetable of YPD activities | <ul style="list-style-type: none"> ▪ Teacher characteristics |

Between July and August 2017, the Secretariat of Education, with YPD support, provided us with school administrative records for each student covering the 2016–2017 school year. The school administrative records included final test scores, overall and by subject; an indicator of whether the student had graduated or not; number of attendance days; number of absences; and number of days the student was late. The administrative data were obtained in a standard format (Excel file) for all schools except one school that only had information on final test scores.

In addition, the evaluation team collected and reviewed the YPD implementation tracker to obtain routine information on YPD implementation. This Excel tool, filled out by each captain on a monthly basis, provided basic summary information of the planned and implemented learning dynamics for each class. It also provided a simple yes/no rating to track whether the teacher demonstrated adequate preparation or understanding of the YPD learning dynamic they were teaching. We also examined program materials like the YPD Box, the ECA curriculum, and the timetable of ECA-YPD activities to gather background information and improve our understanding of how the YPD and the ECA curricula were coordinated and implemented.

Finally, we collected demographic and background information on the 14 participating teachers, including their age, gender, highest level of completed education, number of years teaching, number of years of teaching in CBA schools, and whether or not they had previously received the YPD program.

⁴¹ There were no statistically significant differences in telephone response rates between treatment and control groups.

⁴² Administering two different survey modes could potentially affect responses. For example, sensitive questions could prompt underreporting and socially acceptable responses when there is an interviewer involved compared to when the survey is self-administered in the classroom. However, it is unlikely that the survey mode would have an effect on estimated program impacts since there were no statistically significant differences in survey mode rates between treatment and control groups.

2.4.3 Key Informant Interviews

The evaluation team conducted semi-structured interviews with key informants to obtain stakeholders' perspectives on the YPD program's implementation. The team developed interview protocols adapted to each informant and covered implementation aspects such as perceived level of success in reaching its stated goals; possible contamination; operational aspects of the YPD intervention, including how the YPD program was integrated into the CBA curriculum; and lessons learned from implementation.

To ensure input from the perspectives of all main stakeholders, the team interviewed the CBA's program coordinator at the Secretariat of Education, who directly supervised integration of the YPD intervention into the CBA program; YPD's Chief Executive Officer (CEO), the manager in charge of implementing YPD in CBA schools; and all the YPD captains assigned to treatment schools. All interviews were audio-recorded with the consent of participants and were conducted by an experienced IMPAQ qualitative expert and a qualified note-taker between November and December 2017. Exhibit 10 includes a summary of the number of key informant interviews held.

2.4.4 Focus Group Discussions

We conducted focus group discussions to assess the project's mechanism of change outlined in the program logic model, which is that teachers will update their teaching techniques and instruction methods to engage students in their classes and influence the students' decision-making processes. For this, the evaluation targeted the three main groups: (1) treatment teachers who received the YPD training intervention, (2) control teachers who did not receive the training intervention, and (3) minor students who benefited from the YPD intervention. All focus groups were conducted by an experienced IMPAQ qualitative expert and a qualified note-taker and were audio-recorded with the consent of participants (and their parents for minor students).

Exhibit 10. Participants in Focus Group Discussions and Key Informant Interviews

| Focus Group Discussions | | | Key Informant Interviews | |
|-------------------------|------------------------|------------------------|--------------------------|------------------------|
| Focus Group Discussions | Number of Focus Groups | Number of Participants | Key Informant Interviews | Number of Participants |
| Control teachers | 2 | 6 | Secretariat staff | 1 |
| Treatment teachers | 1 | 7 | YPD managers | 2 |
| Female students | 3 | 11 | YPD captains | 4 |
| Male students | 4 | 10 | | |

Focus groups with control and treatment teachers were arranged with the assistance of the Secretariat and were held in the Secretariat's offices in November 2017, as this was the most convenient location for all teachers.

The IMPAQ team proceeded to arrange the student focus groups with the goal of achieving student representation from all schools, gender balance, and a combination of education and work activities. Treatment students who received the program during 2016–2017 were recruited to participate in

separate male and female focus groups. Since most participants were only able to participate on a weekend, focus groups were convened at OPE’s offices. The focus groups were initially scheduled for January 2018; however, due to a low student participation rate, additional smaller⁴³ focus groups were held in February 2018 to achieve representation from all schools. To encourage participation, OPE revised the incentives provided to students. In the end, OPE offered participants a combination of cash incentives and a light snack and arranged a transportation service to pick them up from their homes and take them back after the meeting.

As Exhibit 11 shows, despite this final incentive arrangement, the evaluation team was unable to reach the desired number of 2 boys and 2 girls per school. However, we were able to reach a minimum representation from all schools as well as gender balance. In total, we interviewed 21 treatment students, 11 females and 10 males. Among the 21 students who participated in the focus group discussions, 14 reported that they were only studying, 3 were only working, 1 was both studying and working, and 3 were neither studying nor working or were helping at home at the time of the focus groups.

Exhibit 11. School Representation in Focus Group Discussions

| School | Female Students | Male Students |
|------------------------|-----------------|---------------|
| Benalcázar | 2 | 2 |
| Bicentenario | 1 | 1 |
| Jose Ricardo Chiriboga | 1 | 0 |
| Cotocollao | 1 | 3 |
| Espejo | 2 | 1 |
| Fernández Madrid | 1 | 2 |
| Sucre | 3 | 1 |
| TOTAL PARTICIPANTS | 11 | 10 |

2.5 DATA ANALYSIS

2.5.1 Impact Analysis of Youth Outcomes

This section describes the analytic strategy used to examine the confirmatory and exploratory impacts on student outcomes. The randomization should, on average, equalize any measured and unmeasured baseline differences between treatment and control groups that could confound impact estimates. Nevertheless, we tested the robustness of the results to account for student and school characteristics in the analytic models, and we ran different regression models for robustness checks.

The different regression models vary in the number of control variables included in the regression and in the analytical sample used for the estimation. For the survey-based outcomes, we first ran regressions

⁴³ Minimum of 3 participants per male and female focus group.

starting from the largest analytic sample of students who filled out the follow-up survey (this is Sample C in Exhibit 8 in Section 2.2). The first regression model (i.e., Model 1) included as control variables the treatment group indicator, age of the youth at baseline and sex, which are two demographic variables available for all students.⁴⁴ Model 1 also included school fixed effects aimed at controlling for time-invariant school characteristics that could also affect outcomes and accounting for the fact that randomization was stratified by school (please refer to Appendix G for a more detailed description of Model 1 as well as the other regression models).

We used Sample D (which includes students who filled both the follow-up and baseline survey, in Exhibit 8) to include additional controls for other baseline demographic characteristics, such as ethnicity and parental education, which were available only for students who also filled out the baseline survey (we refer to the regression model using these additional demographic characteristics as Model 2). We also use Sample D to add controls for baseline values of the outcome variable (Model 3). For example, if the outcome of interest is ‘hazardous child labor’, we controlled for baseline values of HCL.

Finally, because baseline values of demographic characteristics and outcome variables have missing values, using Sample C, we also tested the robustness of estimates with imputed values of baseline demographic characteristics and baseline outcome variables (Model 4). Exhibit 12 summarizes the regression models we estimated on each analytic sample for the survey-based outcomes.⁴⁵

Exhibit 12. Regression Models and Analytic Samples (Survey-Based Outcomes)

| Model Specifications | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---------|---------|---------|---------|
| Sample size for analyzing survey outcomes | C | D | D | C |
| Regression Variables | | | | |
| Treatment indicator | Yes | Yes | Yes | Yes |
| Age and sex at baseline | Yes | Yes | Yes | Yes |
| School fixed effects | Yes | Yes | Yes | Yes |
| Other baseline demographic characteristics | No | Yes | Yes | Yes |
| Baseline outcome | No | No | Yes | Yes |
| Missing values of baseline outcome and demographics imputeded | No | No | No | Yes |

Similarly, for administrative-data-based outcomes, we first ran regressions starting from the largest analytic sample of students for whom we have administrative data (Sample E in Exhibit 8). The first regression model included the treatment group indicator, age of the youth at baseline, sex, and school fixed effects (Model 5). We used Sample F (which includes students with administrative data and who also filled the baseline survey, from Exhibit 8) to include controls for other baseline demographics like race,

⁴⁴ Baseline age and sex are available for all students who have been randomized, regardless of whether or not they filled out the baseline survey.

⁴⁵ We also ran additional regression models, including a model with only the treatment indicator, as well as another model with the treatment indicator plus age and sex at baseline (without school fixed effects), but only the four main models are reported in the appendix for a more concise presentation.

ethnicity, and parental education that were available only for students with administrative data who also filled out the baseline survey (Model 6). Because baseline values of demographics might have missing values, using Sample E, we also tested the robustness of estimates using imputed values of baseline demographic variables (Model 7). We were unable to run a model that controls for baseline values of the administrative outcomes because administrative data were not available at baseline, as students were previously dropouts and not enrolled in formal schooling. Exhibit 13 summarizes the regression models we estimated on each analytic sample for the administrative-data-based outcomes.

Exhibit 13. Regression Models and Analytic Samples (Administrative-Based Outcomes)

| Model Specifications | Model 5 | Model 6 | Model 7 |
|---|----------------|----------------|----------------|
| Sample size for analyzing school outcomes | E | F | E |
| Regression Variables | | | |
| Treatment indicator | Yes | Yes | Yes |
| Age and sex at baseline | Yes | Yes | Yes |
| School fixed effects | Yes | Yes | Yes |
| Other baseline demographic characteristics | No | Yes | Yes |
| Missing values of baseline demographics imputed | No | No | Yes |

We chose regression Model 1 and Model 5 as the main regression models because they rely on the largest samples and are preferred to the other models for reasons outlined below.

- Model 1 is preferred to Models 2 and 3 and Model 5 is preferred to Model 6. While we may improve the precision of estimates by adding demographic information, we are at the same time losing sample size by controlling for demographics and past values of the outcomes. Since we have already shown that baseline characteristics were balanced between the treatment and control groups, adding these additional variables implies a loss of sample size rather than a gain in precision of the estimates, in particular because there are missing values on both demographic characteristics and past outcomes.
- Model 1 is preferred to Model 4, and Model 5 is preferred to Model 7. While imputation of missing values aimed at filling in the missing data points helps with the loss of sample size, imputation itself can also introduce some noise and make estimates less precise.

In the next chapter, we present the results of Model 1 for the impact estimates on survey outcomes and the results of Model 5 for the impact estimates on school-administrative outcomes. All detailed regression-model specifications for each outcome are reported in Appendix G, as robustness checks. While we present the main results from Model 1 and Model 5, our estimates are generally robust to the different model specifications.

2.5.2 Implementation Fidelity and Mechanisms of Change

Our implementation evaluation design combines: (1) a review, analysis, and synthesis of program data and documents; and (2) a qualitative rapid-assessment approach using semi-structured key informant interviews and focus group discussions. To analyze the qualitative data gathered during interviews and

focus group discussions, the evaluation team used a framework-analysis approach to identify meaningful patterns and themes relevant to the research questions. To illustrate our approach, we mapped the research questions for the implementation evaluation, key themes, and data sources to facilitate interpretation and analyze major topics across multiple participants (Appendix I). This preliminary mapping structure was further refined during the initial familiarization with the raw data and as other sub-themes and categories emerged.

The qualitative data gathered during note-taking were reviewed, cleaned, revised as necessary, and arranged in a structured form (Microsoft Word table) organized by interview question. These data were further summarized and entered into a Microsoft Excel master sheet, where it was combined into matrices with information from the same type of participants, arranged by themes and source of information. For example, in the YPD captain's Excel sheet, emerging themes were added in rows, and each interviewee's responses were shown in separate columns. Next, responses were also compared across participant types to capture different perspectives. For example, captains' responses about student skills were compared to teachers' and students' responses on the same topic. This approach facilitated comparison across multiple participants and ensured that any important similarities and key differences were systematically captured.

For the research questions focused on program implementation, the evaluation team analyzed administrative documents provided by the Secretariat and YPD, such as the YPD implementation tracker, and compared them against information gathered from interviews and focus group discussions to assess the extent to which certain teachers/schools may have been behind with the curriculum or needed additional hours of training. For the research questions focused on mechanisms of change, in addition to the above data sources, we triangulated analysis with impact estimates on student labor outcomes, schooling outcomes, educational aspirations, and socio-emotional skills from the student survey.

Chapter 3: Program Implementation and Fidelity

3.1 OVERVIEW OF 2016–2017 IMPLEMENTATION

3.1.1 CBA and YPD Rollout

The CBA program started in mid-September with the “preparatory period,” while the YPD program started in mid-November. The YPD program was delayed due to delays in implementation activities and accommodations for the random assignment necessary for the impact evaluation. Because the CBA school year was extended until August 2017,⁴⁶ the delay in starting the YPD program was compensated for with the added summer months to allow all YPD activities to be implemented as designed. However, interviews with captains and focus groups with students and teachers revealed that students across schools were upset with the disruption caused by the randomization process. All students clearly remembered being re-assigned to different classrooms after the preparatory period, and most of them referred to it as a negative experience because the process separated them from friends they made during the first month. While most of these students also explained that after a few weeks of being re-assigned they were able to make new friends, a small minority reported that they were never able to fully adapt to the new classroom. In addition, one captain also reported feeling unable to adequately deal with teachers’ questions when asked about the randomization since most captains did not understand it themselves.

At the beginning of the school year, YPD staff worked with the Secretariat of Education to incorporate the YPD curriculum into the CBA curriculum. As described earlier, it was decided that the most appropriate class to implement the program would be the new ECA class. YPD staff aligned the YPD contents of the ECA curriculum to match with the most relevant learning dynamics and then planned the YPD activities accordingly.

3.1.2 School Characteristics

Teachers and YPD captains reported certain differences in characteristics among the seven participating schools that may have influenced program implementation. Since schools were in different parts of the metropolitan area, the context for each school varied widely from the context for the other schools. A common perception was that students from schools in the south were generally easier to work with and more respectful of authority compared to the students from the north of the city. In addition, although most schools had approximately the same number of students in the CBA program, the school infrastructure varied considerably across sites. Some teachers mentioned that obtaining certain resources needed to implement YPD, like a projector, was more complicated in the smaller schools than in the larger ones. Exhibit 14 provides an overview of some similarities and differences across schools, such as location and size that may have influenced YPD program implementation.

⁴⁶ The decision to extend the school year was an internal decision, unrelated to YPD or the impact evaluation.

Exhibit 14. General School Characteristics

| School | Location | Number of Students in CBA | School Infrastructure Size | School Received YPD in the Past | Other School Characteristics |
|------------------|-----------------|---------------------------|----------------------------|---------------------------------|--|
| Benalcázar | Center | 145 | Large | No | Students respectful and easier to work with. |
| Bicentenario | South | 143 | Large | No | Coordinator cooperative. |
| Chiriboga | South | 146 | Small | No | Located near high-risk areas. |
| Cotocollao | North | 139 | Small | Yes | Located in high-risk area. |
| Espejo | North | 150 | Large | No | Student body more disruptive. Coordinator not cooperative. |
| Fernández Madrid | Historic center | 226 | Medium | Yes | Located near high-risk areas. Students harder to work with (disrespectful). Coordinator was not organized. |
| Sucre | Historic center | 143 | Large | No | Located near high-risk areas. United student body. Coordinator cooperative. School organized. |

Note: Data compiled from key informant interviews and focus group discussions.

3.2 TEACHER ASSIGNMENT AND CONTAMINATION

As teachers were the main vehicle for delivering the program, we reviewed their characteristics and looked for differences that could influence program implementation. Overall, teachers in both treatment and control groups shared similar demographic characteristics in terms of age, number of years teaching in general and in CBA in particular, and educational background (Exhibit 15). The main difference between the two groups was that there were more female teachers in the treatment group than in the control group. Furthermore, four out of the seven treatment teachers had received the intervention in previous years, whereas no teachers among the control group had prior exposure to YPD. To minimize contamination in the impact evaluation, the Secretariat made sure that no CBA teachers who had received YPD training in the past were assigned to the control group.

Exhibit 15. Teacher Characteristics

| Characteristic | Treatment Teachers | Control Teachers |
|---|--|--|
| Number of female teachers | 6 out of 7 teachers | 3 out of 7 teachers |
| Average age | 44 years old | 42 years old |
| Average number of years teaching | 17 years | 18 years |
| Average number of years in CBA | 4 years | 3 years |
| Most common educational degree | Licenciado en Ciencias de la Educación | Licenciado en Ciencias de la Educación |
| Number of teachers who received YPD in the past | 4 out of 7 teachers | 0 out of 7 teachers |

Note: Data compiled from implementation tracker.

To accommodate the experimental evaluation, the Secretariat created two versions of the ECA subject for the 2016–2017 school year: one regular version for the control students taught over three periods per

week and an abridged version for the treatment students taught over one period per week. This arrangement was intended to ensure that all students received at least one period of the ECA content. Treatment students were to receive the YPD program for two periods per week by a YPD-trained teacher alongside a YPD captain and the abridged ECA class taught by the same teacher for one period per week. The control students were to receive the regular ECA subject for all three periods per week by a control teacher. Exhibit 16 shows the assignment of teachers to YPD classes, abridged ECA, regular ECA, and other subjects in each school.

Exhibit 16. Teacher Assignments to Classrooms and Subjects Taught, 2016–17

| School | Teacher Assignment | Subjects Taught | | | |
|------------------|--------------------|---------------------------|------------------------------------|---------------------------------|--|
| | | YPD to Treatment Students | Abridged ECA to Treatment Students | Regular ECA to Control Students | Additional Subjects to Both Treatment and Control Students |
| Benalcázar | Treatment | ✓ | ✓ | ✓ | Natural sciences |
| | Control | | | ✓ | Physical education |
| Bicentenario | Treatment | ✓ | ✓ | | Social studies |
| | Control | | | ✓ | Natural sciences |
| Cotocollao | Treatment | ✓ | ✓ | | Natural sciences |
| | Control | | | ✓ | Social studies |
| Espejo | Treatment | ✓ | ✓ | | Social studies |
| | Control | | | ✓ | Natural sciences |
| Fernández Madrid | Treatment | ✓ | | | Natural sciences, social studies |
| | Control | | | ✓ | None |
| Chiriboga | Treatment | ✓ | | | Natural sciences, physical education |
| | Control | | | ✓ | Social studies |
| Sucre | Treatment | ✓ | ✓ | ✓ | Social studies |
| | Control | | | ✓ | Natural sciences, physical education |

Note: Data compiled from information provided by Secretariat and focus group participants.

While all seven schools received the YPD program for two consecutive class periods taught by both the YPD captain and their assigned teacher, our review of the YPD program’s delivery during the school year revealed some deviation from the above described arrangement in four schools. In particular:

- In two schools (Fernández Madrid and Chiriboga), the treatment students did not receive the abridged ECA class from either treatment or control teachers, which has no implications for YPD program fidelity.
- In two schools (Benalcázar and Sucre), the treatment teacher was also asked to teach one period of the regular ECA curriculum to the control students, leading to possible contamination.

Contamination across classrooms could occur under two possible scenarios. First, the treatment teachers in those two schools could have applied aspects of the YPD intervention while teaching regular ECA to the control students. Second, all treatment teachers were in regular contact with the control students through other subjects like social studies or natural sciences. This was because teachers in all seven schools had

to teach more than one subject, due to teacher shortages. It could be expected that treatment teachers learned and applied the new YPD teaching techniques in those other subjects. This would mean that the control students could have benefitted from the intervention through other subjects, despite not having received YPD directly.

The evaluators discussed these potential scenarios with treatment teachers during focus groups. For the first scenario of possible contamination, treatment teachers reported that they did not use YPD-specific materials when teaching the regular ECA to control students, thus contamination in this regard was unlikely. For the second scenario, the majority of teachers reported that it was not feasible to “apply YPD techniques” in other traditional subjects, like mathematics or Spanish language and literature, because teachers perceived that the YPD activities were not transferable. Teachers also indicated it would not be possible to introduce a specific YPD dynamic (video, activity, and conclusion) in a traditional subject. When pressed further, however, two out of seven teachers admitted that they have used “bits and pieces” of a YPD dynamic in other subjects like natural sciences. Thus, for the second scenario, focus group findings suggest that treatment teachers in at least two schools likely introduced some YPD material to control students while teaching other subjects, an indication of possible contamination.

Finally, another issue emerged during focus group discussions with control teachers. At least one teacher said that he realized YPD was part of a study to determine which teaching method worked better. He explained that this motivated him to work harder to prove that his traditional methods were also effective. This points to another threat to the internal validity of the experiment stemming from a possible John Henry effect⁴⁷ introduced by reactive behavior of the control group.

3.3 IMPLEMENTATION OF THE YPD ACTIVITIES

For the 2016–2017 curriculum, the Secretariat of Education and YPDE agreed to implement 16 of the 25 YPD learning dynamics included in the YPD box (refer to section 1.3 for a more detailed description of the YPD box). Exhibit 17 summarizes the 16 pre-selected as well as two additional learning dynamics that ended up being implemented in the study schools together with the main socio-emotional skills targeted in each dynamic (see Appendix B for a brief description of the curriculum).

In Section 1 we describe in detail the type of training and activities the teachers engage in a weekly basis. During the focus group discussions, teachers from Bicentenario, Cotocollao, and Chiriboga reported that the one-on-one preparation was not sufficient for them. Since it was their first time receiving YPD, they reported “feeling lost” and unprepared to implement the dynamics. Even after they delivered the program, most teachers felt that they still did not understand what the objectives of YPD were. For the teachers who had already received the YPD training in previous years, YPD captains tried to implement a given dynamic in a different way to show teachers there is room to be creative and to keep them

⁴⁷ For a description of this effect see, for example, Duflo, Esther, Rachel Glennerster, and Michael Kremer. 2008. “Using Randomization in Development Economics Research: A Toolkit.” T. Schultz and John Strauss, eds., *Handbook of Development Economics*. Vol. 4. Amsterdam and New York: North Holland.

motivated. This, however, was not always successful, and most teachers who had received YPD in previous years described being tired of having to repeat the training. Only one teacher reported feeling enthusiastic about receiving one additional year of the training.

Exhibit 17. YPD Learning Dynamics and Targeted Skills

| YPD General Category | Learning Dynamics | Main Skills | | | | | | | | | | |
|----------------------|--------------------------------------|---------------------------|------------------|----------------------------|------------------------------|-----------------------------|---------|-----------|------------------|------------|-----------------------|-------------------------------|
| | | Analysis/ Problem-solving | Entrepreneurship | Goals/ Objectives-oriented | Self-reflection/ Empowerment | Communication/ Presentation | Empathy | Team Work | Results-oriented | Creativity | Manage feelings/ Fear | Self-confidence/ Self-control |
| Leadership | The Brand | | | | X | | | | | | | |
| | The Molecule | | | | X | | | X | | | | |
| | Challenge of the Future of Education | X | | | | X | | X | | X | | |
| | The List of My Life | | | | X | | | | | | | |
| | Business Plan | | X | | | | | | | | | |
| | The Map of My Life | | | X | X | | | | | | | |
| Communication | Clic | | | | | X | X | | | | | |
| | Adagio | | | | | X | X | | | X | | |
| | The Shakespeare Experience | | | | | X | | X | X | X | X | |
| | The Debate | | | | | X | | X | | | | |
| | TV News | | | | | X | | X | | | | |
| | The Weather Man** | | | | | X | | | | | | |
| | Effective Presentations | | | | | X | | | | | | |
| Creativity | Modelling a Speaker* | | | | | X | | | | | | |
| | The Architecture of an Idea | | | | | X | | X | | X | | |
| Energy | Cartoon Experience | | | | | | | X | X | X | | |
| | Rhythm and Movement | | | | X | | | | | | X | |
| | Pop Star Experience | | | | X | X | | | | | X | X |

Note: (*) Implemented in two schools only. (**) Implemented in one school only. Data compiled based on information provided by YPD staff.

Implementation of Learning Dynamics

While 16 learning dynamics were pre-selected by the Secretariat to be implemented in the treatment classrooms, some variation occurred across schools in the composition and number of learning dynamics that ended up being planned and implemented. Overall, over 90 percent of the pre-selected learning dynamics were implemented during the school year, but there were some deviations in what the

implementation looked like. First, some of the dynamics implemented were not among those pre-selected by the Secretariat. As an example, three schools replaced one of the dynamics with another one from the YPD Box that had not been pre-selected – two of these schools had planned this modification in advance and one did not. Second, schools originally planned to implement fewer dynamics than agreed upon with the Secretariat but managed to implement more and vice versa. Only one school (Sucre) planned to implement all 16 dynamics pre-selected by the Secretariat, although it fell short by one dynamic.

Variation in the number of learning dynamics carried out is likely due to variation in class time available for YPD. Exhibit 18 summarizes the number of classes scheduled (in days) and the percentage of cancelled classes per school. On average, schools scheduled about 27 days to implement YPD. Cotocollao had the least number of days scheduled (24), and Fernández Madrid had the most days scheduled (31). Of these scheduled days, about 4 days were cancelled on average for various reasons. The most common reasons were school-wide or Secretariat-mandated events, such as field trips or teacher meetings. Across all schools, these cancellations represented on average about 16 percent of all YPD classes being cancelled, with Espejo, Sucre, and Cotocollao being the schools with the highest percentage of classes cancelled (31, 24, and 17 percent, respectively). Although YPD captains still managed to implement most of the planned dynamics, these findings suggest that the YPD curriculum was implemented with substantial disruptions in some schools and without sufficient time to deliver the activities as intended.

Exhibit 18. YPD Class Schedules and Cancellations (in Days)

| Schools | Classes Scheduled | Classes Cancelled | Percentage of Cancelled Classes |
|------------------|-------------------|-------------------|---------------------------------|
| Benalcázar | 27 | 2 | 7% |
| Bicentenario | 27 | 3 | 11% |
| Chiriboga | 28 | 3 | 11% |
| Cotocollao | 24 | 4 | 17% |
| Espejo | 26 | 8 | 31% |
| Fernández Madrid | 31 | 4 | 13% |
| Sucre | 29 | 7 | 24% |
| Average | 27.4 | 4.4 | 16% |

Note: Data compiled from YPD Implementation Tracker.

As cancellations reduced the number of effective days YPD teachers and captains had to implement the dynamics, those conducting the lessons likely made adjustments either in the number of dynamics being implemented, or in the amount of time they had to devote to each dynamic, or a combination of both. We created an ‘intensity’ indicator as an approximation of the trade-off between available days and number of implemented dynamics, which provides a quick reference to the time spent on each dynamic. Indeed, schools not only varied in the number of implemented learning dynamics, but also varied considerably in time spent on each dynamic, ranging from 1.2 to 1.7 days (Exhibit 19).

Exhibit 19. Effective YPD Classes and Intensity

| Schools | Effective YPD Days per Classroom | Number of Implemented Dynamics | Intensity (Days per Dynamic) |
|------------------|----------------------------------|--------------------------------|------------------------------|
| Benalcázar | 25 | 16 | 1.6 |
| Bicentenario | 24 | 15 | 1.6 |
| Chiriboga | 25 | 15 | 1.7 |
| Cotocollao | 20 | 14 | 1.4 |
| Espejo | 18 | 15 | 1.2 |
| Fernández Madrid | 27 | 16 | 1.7 |
| Sucre | 22 | 15 | 1.5 |

Note: Data compiled from YPD Implementation Tracker.

Other YPD Activities

In addition to the regular YPD activities, YPD captains in four schools also reported postponing up to two scheduled YPD days at the request of teachers because teachers needed to “catch up” with the ECA content. A common concern among both treatment and control teachers was that they did not have adequate instructions on what to teach for the ECA class. Since this was a new subject for all of them, they felt that the guidelines provided by the Secretariat were not detailed enough. In some cases, teachers admitted feeling at a loss as to how to proceed with researching a new topic to teach in ECA class. The treatment teachers felt the YPD captains were especially supportive of them during this process. This helped strengthen the relationship between YPD captains and teachers, who recognized the value of having extra assistance during class.

3.4 CHANGE IN TEACHER PEDAGOGICAL PRACTICES

One of the main objectives of the YPD program is to improve teachers’ pedagogical practices so that they become less lecture-style transmission-based and instead create opportunities for students to interact more with the lesson material. A transmission approach to learning emphasizes teacher-centered explanations, often in lecture form, delivered to the entire class. This traditional approach expects that students will acquire concepts and skills through listening, writing down text, memorizing facts and figures, and practicing sets of similar problems. The Secretariat representative explained that most teachers adopt a transmission approach to teaching because that is how they themselves have been trained.

In line with the literature on teacher pedagogical practices, we have focused our discussion in this section on three categories of teaching practices and views targeted by the YPD program for this analysis: (i) types of tasks given to students; (ii) teacher’s general teaching style; and (iii) teachers’ perceptions of their own teaching practices.⁴⁸ Each of these categories is discussed further below.

⁴⁸ Becker, H. J. & Ravitz, J. (1999). The influence of computer and Internet use on teachers’ pedagogical practices and perception. *Journal of Research on Computing in Education*, 31(4), 356–384.

Types of tasks given to students. By and large, teachers were open to and favored activities that resembled work in the real world, for instance, implementing the Business Plan learning dynamic. These types of tasks given to students contrast with the traditional approach to teaching in that it requires students to use different skills, and planning and decision-making are the student's responsibility, not the teacher's.

Teacher's general teaching style. YPD requires that teachers assume a more active role than is the case with a traditional, lecture-based teaching style. To help guide the treatment teachers in adopting a more active teaching style, YPD captains modelled the level of energy expected from the teachers for the new style, while also encouraging student initiative and having students work in collaborative teams. According to some captains, changing a teacher's teaching style was the most difficult aspect of the training. At least two teachers did not feel comfortable implementing the YPD learning dynamics that require teachers to assume a more active role, such as in the Shakespeare Experience. In addition, a captain reported that one teacher was often unwilling to complete the conclusion phase of the learning dynamic, where teachers are meant to reflect on the activity implemented, because of a fear of appearing vulnerable to the class. Although both teachers eventually accepted a more active role in leading the dynamics toward the end of the school year, their discomfort with certain aspects of the program were never fully overcome, according to both captains and teachers.

The other two emerging aspects of the new teaching style—encouraging student initiative and working in groups—were more readily adopted by all teachers. Most teachers viewed them as something that could be incorporated into other subjects, beyond ECA. In addition, two teachers reported that they have applied at least one of the learning dynamics in teaching other subjects, even after the program was completed and they were no longer teaching ECA. One teacher, who was particularly excited about the program, reported trying to show the YPD Box to the school's 2017–2018 ECA teacher in case the new teacher thought it would be helpful.

Teachers' perceptions of their own teaching practices. The program was less successful in changing the teachers' perceptions of their own teaching practices. There was a sharp contrast between the YPD captain's assessments of the change in a given teacher's teaching practices compared to the teacher's own assessment of the program's influence. For example, a captain described one of the teachers trained as "empowered" by the YPD program; however, this same teacher felt that her main disappointment in the program was that it was not relevant for teaching other subjects. In another example, the captain described a teacher as a "star teacher," explaining that the teacher's creative nature fit well with the program. In contrast, this same teacher reported feeling disappointed with the YPD program, largely because "it didn't go far enough." Almost all teachers echoed this sentiment, expecting YPD to be a more "real" or "tangible" life project for the students. When asked if there were aspects of YPD that could be applied to other subjects, most said no, even though earlier they had acknowledged that working in groups and encouraging student initiative would be useful in other subjects as well.

In general, teachers did not view YPD necessarily as an intervention also meant to target their own teaching practices, repeatedly noting that the program fell short of their expectations. When asked about their expectations for the program, teacher responses revolved around the aspiration of YPD training

students in a technical skill, which is why most teachers enjoyed the Business Plan learning dynamic. This prompted teachers to engage in a debate that reflected how difficult it was for them to assess the program's ultimate effectiveness and what outcome is considered 'success.' One teacher brought up the case of a former CBA student whom she met shining shoes in the city center (a form of HCL) and who had crafted his own shoe box out of a tomato crate. Some teachers used this as an example of how YPD in particular and CBA in general are falling short, because ideally the former student should have continued his education. In contrast, other teachers were more optimistic, explaining that the former student is both an immigrant and a former drug user, so that his sobriety and initiative to work should be valued and seen as a sign that "something changed in him [for the better]."

Chapter 4: Study Findings

This chapter presents the findings from both the quantitative and the qualitative analyses using data collected at follow-up. We begin with the impact results obtained using the survey and school-records data. We then discuss the contextual findings and provide more in-depth understanding using data from the key informant interviews and focus group discussions. In line with our program logic, we begin with the impacts on socio-emotional skills, followed by impacts on labor outcomes, and end with impacts on educational aspirations and academic outcomes. We finish the chapter with a discussion of the study limitations.

For the impact findings, we present the results from the main regression model run for all outcome variables (i.e., Model 1 for survey-based outcomes and Model 5 for academic outcomes).⁴⁹ Alternative model specifications for each outcome are presented in Appendix G. Although we are not powered to conduct any subgroup analyses, we also ran some exploratory regression results separately for males and females to explore whether there are differential patterns between the two groups.⁵⁰

Each table of results is structured in the manner next described. The coefficient on the treatment indicator is the main parameter of interest, which measures the difference in the average outcome variable between treatment and control groups, conditional on other characteristics controlled for in the regression. Most of the outcome variables analyzed in this report are measured as indicators (e.g., working or not working) and the coefficient on the treatment indicator represents a percentage-point difference between the treatment- and control-group-outcome prevalence. Each exhibit also shows in brackets the regression coefficient divided by the mean of the control group, to give the reader a sense of the magnitude of the estimated effect.

4.1 IMPACTS ON SOCIO-EMOTIONAL SKILLS

This section presents the regression results for the group of outcomes related to socio-emotional skills. We present these results first since, according to our program logic, changes in socio-emotional skills would lead to changes in the other outcomes. We analyzed three types of socio-emotional scales: self-efficacy, social skills, and school climate.

We constructed the **self-efficacy measure** by asking students to indicate the extent to which they agreed or disagreed with 10 statements capturing aspects such as, for example, how difficult it is to solve problems and whether they have the capacity to stay calm when they are in trouble. Each response option

⁴⁹ All results are obtained by clustering standard errors (S.E.) at the classroom levels using the Moulton adjustment factor, an approach preferable in cases with a small number of clusters. We also tested using the Stata ‘cluster’ command, and without using any clustering, and the results are generally robust to these alternative specifications.

⁵⁰ These results are available upon request.

was scored on a scale from 1 (strongly disagree) to 4 (strongly agree). We then aggregated the points for all 10 statements.⁵¹ Higher values indicate a higher measure of self-efficacy.

Similarly, we obtained an **overall measure of social skills** by asking students to indicate the extent to which each of 12 statements was false or true. The statements captured, for example, whether respondents can easily start a conversation with someone they do not know or whether they help when friends have a fight. Each response option was scored on a scale from 1 (totally false) to 4 (totally true). We then aggregated the points for all 12 statements.⁵²

For the **school-climate construct**, we obtained an overall measure by asking students to indicate the extent to which they agreed or disagreed with 16 statements capturing aspects such as, for example, whether the professors or other adults working in the school treat the students with respect, whether students in the school mistreat each other, whether the schools try to include families in various activities, etc. Each response option was scored on a scale from 1 (strongly disagree) to 4 (strongly agree).⁵³ We then aggregated the points for all 16 statements.

Before estimating program impacts on socio-emotional skills, we implemented a more detailed psychometric analysis of these measures to assess whether they are internally consistent (Appendix H). The results of our analysis indicate that the 'self-efficacy' and 'school-climate' constructs resulted in large Cronbach alpha coefficients (greater than 0.70), indicating strong item homogeneity and suggesting that these two domains of interest have been adequately captured by the survey data. For the 'social-skills' scale, we performed further analysis by eliminating items that were causing the scale to have lower internal consistency reliability. The revised social-skills scale is reduced to include 7 items reaching an acceptable level of internal consistency. However, the three subscales of social skills (communication, assertiveness, and conflict resolution) resulted in unacceptably low coefficient alpha, even after item elimination, suggesting that these subscales were not reliable in measuring the desired concepts and should be dropped from further analysis.

The results of the impact on the socio-emotional skills are presented in Exhibit 20.

⁵¹ For data analysis of these skills, an individual score was created for every student with a valid response to at least one item in the scale. The summative score was then divided by the number of items over which the sum is calculated. This approach allowed us to use all data, including those with missing values on some scale items.

⁵² Two negative statements were scored in reverse before being combined with the rest of the statements.

⁵³ Two negative statements were scored in reverse before being combined with the rest of the statements.

Exhibit 20. Impacts on Self-Efficacy, Social Skills, and School Climate

| Variable | Self-Efficacy | Social Skill | School Climate |
|---------------------|--------------------|------------------|------------------|
| Treatment Indicator | -0.059 [-1.90%] | 0.008 [0.29%] | 0.005 [0.16%] |
| Standard Error | 0.047 | 0.041 | 0.033 |
| N | 675 | 676 | 676 |
| Control Group Mean | 3.109 | 2.681 | 2.944 |
| R ² | 0.021 | 0.039 | 0.073 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

The results in Exhibit 21 indicate that the treatment effects were not statistically significant for all three constructs considered. While the effects are small and positive for social skills and school climate, the results are surprisingly negative for self-efficacy. Specifically, students in the treatment group exhibited about 0.059 lower self-efficacy than students in the control group (which represents a 1.90 percent decline relative to the average self-efficacy in the control group of about 3.1 points). The effect is not statistically significant across all different model specifications reported (see Exhibit 40 in Appendix G). This is true also for the other two constructs.

Although our study is not generally powered to detect effects by subgroups, we implemented an exploratory analysis to investigate whether there appear to be any patterns by gender (Exhibit 21).

Exhibit 21. Impacts on Socio-Emotional Skills, by Gender

| Variable | Self-Efficacy | Social Skill | School Climate |
|---------------------|---------------------|--------------------|--------------------|
| Females | | | |
| Treatment Indicator | 0.023 [0.76%] | 0.048 [1.75%] | -0.007 [-0.22%] |
| Standard Error | 0.075 | 0.068 | 0.052 |
| N | 259 | 260 | 260 |
| Control Group Mean | 3.056 | 2.728 | 3.004 |
| R ² | 0.043 | 0.035 | 0.076 |
| Males | | | |
| Treatment Indicator | -0.111* [-3.53%] | -0.008 [-0.32%] | 0.014 [0.47%] |
| Standard Error | 0.051 | 0.052 | 0.039 |
| N | 416 | 416 | 416 |
| Control Group Mean | 3.140 | 2.654 | 2.908 |
| R ² | 0.038 | 0.050 | 0.065 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

It is important to note that about 60 percent of the sample were male students, thus sample sizes for females were particularly small. The separate results by male and female students show small positive but not statistically significant effects on self-efficacy and social skills and a small, negative but not statistically significant effect on school climate for females. The results for males are of opposite sign and

indicate a statistically significant lower self-efficacy for male students in the treatment group relative to male students in the control group; a small, negative but not statistically significant effect on social skills; and a small, positive but not statistically significant effect on school climate. The statistically significant negative effect on self-efficacy is surprising. However, we need to keep in mind that these results need to be interpreted with caution given the small sample sizes. Overall, they provide some suggestive evidence that male and female students' socio-emotional skills may be impacted differently by the intervention.

The lack of significant impacts on socio-emotional skills needs to be interpreted in the context of the implementation findings described in Chapter 3 as well as our findings from the qualitative data about the mechanisms of change discussed in Section 4.6. In particular, there are several reasons why we may not see effects on socio-emotional skills. Primarily, as discussed earlier, the analysis of implementation data suggested that the YPD curriculum was implemented with disruptions, whereby some schools canceled up to one-third of the classes (Exhibit 18). Deviation from program fidelity may have led to students having less time to spend on the curriculum needed to affect their socio-emotional skills (Exhibit 19).

Additionally, because YPD is delivered as a teacher professional development program, an important mechanism through which the YPD program is expected to affect students' socio-emotional skills is through change in teacher pedagogical practices. For such change to occur, teachers would need to be clear on the objectives of the program, be receptive to the changes they need to make, and feel they have the resources and training to make those changes. The interviews with the teachers indicated that several of them faced some difficulties with one or more of these aspects.

In particular, while students engaged in activities aimed at directly strengthening their self-efficacy, this engagement may have been weakened by the fact that, as emerged in the qualitative interviews, in some cases the teacher was unwilling to complete the wrap-up discussion or final reflections of the learning dynamic or s/he would not embrace a more active role as required by the dynamic. These would be important aspects to guide the students through the task, motivate them to make their best effort to succeed at the task, and internalize lessons learned to reinforce their self-efficacy. Although there is evidence from the qualitative findings that students found certain activities helped them in their self-efficacy by encouraging them to write down the steps they need to take to achieve both short- and long-term objectives, the effects may be weak. If student exposure to activities aimed at reinforcing self-efficacy was not as intense as expected, the effects on self-efficacy would be attenuated, and small effects may not be estimated with confidence using quantitative data.

Furthermore, the social-skills survey construct captures aspects related to communication, assertiveness, and conflict resolution, which were the focus of most of the 16 YPD dynamics (through YPD activities focused on team work, for example). To measure these aspects adequately, we would need to analyze separately the three subscales (communication, assertiveness, and conflict resolution). However, as described in additional detail in Appendix H, the three subscales resulted in unacceptably low coefficient alpha in each survey administration, even after item elimination, suggesting that these subscales are not reliable in measuring the desired concepts and should be dropped from further analysis (Exhibit 64). This has precluded us from being able to tease out impacts on the subscales with quantitative data. However,

the qualitative findings suggest that students, especially females, liked all activities related to the development of communication skills.

Finally, while most of the program was designed to boost student engagement and improve teacher-student relationships, only one of the YPD dynamics discussed aspects directly related to the school environment.⁵⁴ This suggests that the school-climate construct may not overlap well with aspects emphasized by the YPD learning dynamics. This is particularly evident from the fact that teacher embraced dynamics such as development of business plan, where they can deliver specific knowledge, rather than dynamics aimed at softer skills leading to improved perceptions of school climate.

4.2 IMPACTS ON LABOR MARKET OUTCOMES AND HOUSEHOLD CHORES

Exhibit 22 presents the one-year impact results for the prevalence of youth in hazardous child labor, which is the main confirmatory labor outcome, and Exhibit 23 presents results for each of the HCL components. As described in Chapter 1, according to the abridged ILO-Ecuador definition of "hazardous child labor" used in this evaluation, minor youth are considered in HCL if they work:

- In hazardous industries,⁵⁵
- In hazardous occupations,⁵⁶
- At night, 7 p.m. to 6 a.m.,
- More than 30 hours a week, or
- Under hazardous conditions that expose them to dangerous substances or extreme cold, heat, noise, etc.; to injuries or illnesses; or to physical, emotional, or sexual harassment.

In this study, HCL statistics combine data from the last week and the past six months. Specifically, the survey asked about the number of hours worked, the time during which work was performed, and the types of activities with reference to the past week. However, to capture the exposure to hazardous conditions that may not occur weekly, youth were asked if they had been injured, abused, or mistreated in the past six months. This allowed us to account for all cases when a child who was not abused, exposed to dangerous substances, or injured last week might have been exposed to such hazardous conditions in the past. A more detailed description of key concepts is presented in Appendix A.

⁵⁴ This the "Challenge of the future of education" dynamic. Please refer to Appendix B for a more detailed description of the different dynamics.

⁵⁵ Hazardous industries, according to Ecuador legislation, include construction, mining, and agriculture (specifically production of banana, flowers, palm oil, and timber).

⁵⁶ The following occupations reported by youth are considered hazardous: miner, car repair handyman, carpenter, construction worker, domestic worker (living in the house), packer, street worker, waiter or bartender in a bar/cantina, taxi/motorcar driver, custodian or security guard, social-club worker, recycler of waste and garbage collector, brick maker, glazier, locksmith, aluminum worker, electrician, welder.

We adjusted the HCL definition for a small number of the students who were 17 at the time of baseline but who had turned 18 by the time of follow-up. The main difference in the way we measured hazardous labor for youth 18 years of age or older is that we consider it "hazardous work" if the youth worked more than 43 hours a week instead of the 30 hours a week used for the minor population.⁵⁷

Exhibit 22. Impact on Hazardous Child Labor

| Variable | Hazardous Child Labor |
|---------------------|-----------------------|
| Treatment Indicator | 0.015 [2.98%] |
| Standard Error | 0.041 |
| N | 623 |
| Control Group Mean | 0.487 |
| R ² | 0.044 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Impacts are in percentage-point change.

The data show no effects on the likelihood of being in HCL for the treatment group students (the positive 1.5 percentage-point difference, which represents about a 3 percent change relative to the overall HCL prevalence in the control group, is not statistically significant).

We next analyzed each of the HCL triggers to investigate if there were any significant program impacts in any of the HCL components (Exhibit 23). We found negative but not statistically significant effects on HCL triggers, including likelihood of working in hazardous occupations, at night, in hazardous working conditions, and suffering injuries at work. We found a positive but not statistically significant effect on likelihood of working in hazardous industries, likelihood of working long hours, and suffering harassment at work. These positive effects on likelihood of working in hazardous industries and likelihood of working long hours are significant across some model specifications (Exhibit 44 and Exhibit 46). While the relative effect seems large, it is important to keep in mind that the percentage of youth working in hazardous industries or youth working is generally quite low. Thus even a small percentage-point difference will result in large relative effects.

While the data suggest treatment youth may be working longer hours, it seems this increase is not associated with working in hazardous conditions, such as being exposed to dust, fumes, or other hazardous working circumstances.

⁵⁷ The 43-hours threshold corresponds to about the mid-point of normal hours of work stipulated in many national legislations, mostly in the range of 40 to 44 (ILO Global Child Labor Trends, 2008–2012).

Exhibit 23. Impacts on Hazardous Child Labor Components

| Variable | Hazardous Industries | Hazardous Occupations | Long Hours | Night Work | Hazardous Working Conditions | Harassment | Injuries |
|---------------------|----------------------|-----------------------|-------------------|--------------------|------------------------------|------------------|--------------------|
| Treatment Indicator | 0.035 [59.77%] | -0.003 [-1.13%] | 0.034 [60.28%] | -0.002 [-8.72%] | -0.011 [-3.48%] | 0.008 [4.11%] | -0.032 [-9.24%] |
| Standard Error | 0.021 | 0.036 | 0.022 | 0.013 | 0.039 | 0.033 | 0.040 |
| N | 648 | 652 | 600 | 612 | 597 | 582 | 581 |
| Control Group Mean | 0.059 | 0.292 | 0.056 | 0.026 | 0.330 | 0.183 | 0.343 |
| R ² | 0.033 | 0.071 | 0.019 | 0.009 | 0.051 | 0.026 | 0.045 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Impacts are in percentage-point change.

The next exhibit presents the results of the following labor outcome variables: (1) an indicator for whether the youth is working or not; (2) the total number of hours worked in the past week; and (3) an indicator for whether the youth is in irregular employment.

The first indicator captures youth in employment who were engaged in any productive economic activity falling within the production boundary in the System of National Accounts, which excludes household chores. Following this criterion, employed youth were those who worked, for pay or not, during the last week. Employment includes running or engaging in any kind of business, such as selling goods, driving a taxi or other form of transport, shining shoes, and so on; working for a wage, salary, or commission in either a regular job or casual work; serving as a domestic worker; helping with the family business; or performing any other work activity, whether for pay or not for pay.

The irregular employment indicator captures youth involved in work activities that are more or less stable and that can lead to more productive employment opportunities. Irregular employment is defined by ILO to include vulnerable workers, casual workers, or temporary workers (refer to Appendix A for a more detailed definition).

The results in Exhibit 24 indicate that students in the treatment group were 1.7 percentage points less likely to work compared to students in the control group, which represents a 3.26 percent decrease relative to the prevalence of working youth in the control group (51.2 percent). However, this effect is not statistically significant. Results in the second column indicate that treatment students worked on average about 1.3 additional hours a week more than control students, which represents a 17.22 percent increase relative to the control group mean of about 7.4 hours a week. The data also show that there is a reduction (1.8 percentage points) in the likelihood of being involved in irregular employment. However, these effects are also not statistically significant. The results for these three outcomes remain not statistically significant also across all the other model specifications presented in Appendix G (Exhibit 51 through Exhibit 53).

Exhibit 24. Impacts on Labor Outcomes

| Variable | Working | Number of hours worked | Irregular employment |
|---------------------|--------------------|------------------------|----------------------|
| Treatment Indicator | -0.017 [-3.26%] | 1.271 [17.22%] | -0.018 [-3.63%] |
| Standard Error | 0.040 | 1.060 | 0.040 |
| N | 671 | 602 | 657 |
| Control Group Mean | 0.512 | 7.381 | 0.492 |
| R ² | 0.028 | 0.040 | 0.027 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Except for the number of hours, impacts are in percentage-point change.

Although child labor definitions used in this evaluation do not include household chores, we also investigated the impacts on the number of hours spent on household chores and whether youth perform those chores at night. The results are presented in

Exhibit 25. We found a positive but not statistically significant effect on the number of hours spent on household chores and a negative but also not statistically significant effect on the likelihood of doing chores at night.

Exhibit 25. Impacts on Household Chores

| Variable | Number of hours spent in household chores | Households chores done at night |
|---------------------|---|---------------------------------|
| Treatment Indicator | 0.264 [2.49%] | -0.004 [-1.46%] |
| Standard Error | 0.673 | 0.038 |
| N | 658 | 586 |
| Control Group Mean | 10.627 | 0.264 |
| R ² | 0.040 | 0.022 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Except for the number of hours, impacts are in percentage-point change.

As described in the previous section, although our study is not generally powered to detect effects by subgroups, we implemented an exploratory analysis to investigate whether there appear to be any patterns in labor outcomes by gender (Exhibit 26). We generally observed not statistically significant effects in labor market outcomes in both groups, as expected given the small sample sizes. However, we found a positive large and statistically significant effect for the likelihood of working longer hours for male students in the treatment group relative to the male students in the control group (a 7.5-percentage-point difference). We find that females in the treatment group are 3.1 percentage points less likely to work long hours than females in the control group, although the effect is not statistically significant.

Exhibit 26. Impacts on Working Long Hours, by Gender

| Outcome/Regression Variable | Females | Males |
|-----------------------------|---------------------|---------------------|
| Long Hours | | |
| Treatment Indicator | -0.031 [-42.88%] | 0.075* [159.20%] |
| S.E. | 0.029 | 0.030 |
| N | 231 | 369 |
| Control Group Mean | 0.073 | 0.047 |
| R ² | 0.039 | 0.048 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Impacts are in percentage-point change.

As depicted in the logic model developed for the evaluation, the main mechanisms through which labor market outcome changes were expected to occur is through changes in students' socio-emotional skills. As discussed earlier, we generally found no impacts on these skills that could, in turn, translate into changes in labor and other outcomes.

4.3 IMPACTS ON EDUCATIONAL ASPIRATIONS AND OTHER YOUTH OUTCOMES

We also analyzed impacts on students' educational aspirations (Exhibit 27). Students were asked about the level of education they desire or hope to achieve and the level of education they realistically think they can achieve. Comparing responses to the two questions, we created an indicator measuring whether students expected realistically to achieve their desired level of education or higher. The results indicate a positive but small and not statistically significant effect on youth educational aspirations.

In addition, our implementing partners suggested that many of the youth targeted by the YPD program were exposed to the worst forms of hazardous activities, such as gang violence, drug trafficking, and prostitution. Though the CBA and YPD interventions do not have removing students from these activities as a goal, we still gathered data on these youth activities. However, the results on the last two outcomes need to be interpreted with caution since it is unlikely that participation in gangs and drug use are being truthfully reported by youth. The data show a reduction in the likelihood of being part of a gang and using drugs (an 18.9-percent and a 9.7-percent decline relative to the mean of the control group, respectively), but the results are not statistically significant.

Exhibit 27. Impacts on Educational Aspirations and Other Youth Outcomes.

| Variable | Educational Aspirations | Part of Gang | Used Drugs |
|---------------------|-------------------------|---------------------|--------------------|
| Treatment Indicator | 0.001 [0.12%] | -0.014 [-18.87%] | -0.027 [-9.72%] |
| Standard Error | 0.036 | 0.021 | 0.038 |
| N | 669 | 663 | 577 |
| Control Group Mean | 0.715 | 0.072 | 0.274 |
| R ² | 0.011 | 0.034 | 0.026 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Impacts are in percentage-point change.

The lack of effects on educational aspirations can be partly explained by the qualitative findings. As described in additional detail in Section 4.6, while all student participants in the focus group discussions reported that they wanted to continue their education, they had had these aspirations before joining the CBA program; that is, they were not a result of YPD. Instead, the YPD acted as additional support and motivation. This suggests that the YPD “incremental” effect relative to the CBA, if any, was likely too small to be detected in the available survey data.

4.4 IMPACTS ON ACADEMIC OUTCOMES

This section presents the regression results for the group of academic outcomes. We analyzed the following academic outcomes: whether the student graduated at the end of the school year, the student’s final grade, the behavior mark, and number of days in attendance. Information on final grade was available for all schools,⁵⁸ while graduation status, behavior mark, and number of days in attendance were available for all but one school.^{59 60}

The final grade was an average of first and second semester grades across all 8 subjects taught during the year. The indicator for behavior mark measured whether the student received a very satisfactory rating for behavior.⁶¹ The analysis showed positive but small and not statistically significant effects on final grades and attendance, and negative but small and not statistically significant effects on graduation rates and behavior marks with no statistically significant differences between treatment and control group members across the various academic outcomes (Exhibit 29). We did not find any statistically significant effects across all of the various model specifications presented in Appendix G (Exhibit 59 through Exhibit 62).

⁵⁸ In each school, the final grade as well as the behavior mark is generally available only for those who graduated.

⁵⁹ For one school (Espejo) we imputed the graduation status based on the availability of the final grade (i.e., we considered a student graduated as long as s/he had a final grade). This was based on the analysis of the relationship between final grade and graduation status in all the other school records.

⁶⁰ Administrative data had other available variables, such as number of justified and unjustified absences and number of days the student was late, but those variables had a large number of missing values and thus were not analyzed.

⁶¹ The behavior mark was measured on a three-letter scale: A= very satisfactory, B= satisfactory, C= little satisfactory.

Exhibit 28. Impacts on School-based Outcomes.

| Variable | Graduation Status | Final Grade | Behavior Mark | Attendance |
|---------------------|--------------------|------------------|--------------------|------------------|
| Treatment Indicator | -0.010 [-1.09%] | 0.023 [0.28%] | -0.001 [-0.27%] | 1.475 [0.74%] |
| Standard Error | 0.023 | 0.041 | 0.047 | 1.485 |
| N | 726 | 659 | 555 | 617 |
| Control Group Mean | 0.904 | 7.946 | 0.241 | 198.151 |
| R ² | 0.021 | 0.187 | 0.412 | 0.814 |

Note: Numbers in brackets are effect sizes relative to the mean in the control group. ***, **, * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. Except for the final grade and attendance, impacts are in percentage-point change.

In addition to the previously discussed lack of effects on the socio-emotional skills, which were expected to be the main drivers in changes in school outcomes, it is important to keep in mind another important limitation of the academic outcomes data when considering these results. Specifically, it appears that the administrative data may have been subject to “inflation” in measuring achievement, attendance, behavior, and graduation. As explained by the YPD implementers, most students who completed the CBA program had their final grades adjusted to meet the average required to pass graduation. This is in line with the fact that CBA is a remedial program for youth who had previously dropped out of regular schools, and the program’s mission was to be more inclusive and encouraging than regular schools. In addition, there appears to be no consistent recording of attendance and absences. This means that the academic outcome data may be “inflated” and thus lack sufficient variation to capture meaningful differences between treatment and control students.

4.5 MECHANISMS OF CHANGE

In this section, we discuss the findings from key informant interviews and focus group discussions on the possible mechanisms of change to facilitate the interpretation of impact results.

4.5.1. Student Program Perceptions and Relationships with Teachers and Captains

Students were asked to discuss what they learned and valued from the ECA/YPD activities. All students in the focus groups enjoyed watching the videos and most of the tasks they were given, particularly more interactive ones, like The Shakespeare Experience or The Architecture of an Idea. Only one student said that she did not like a dynamic where they had to listen to classical music and write down their thoughts, mainly because she did not like the music; another student did not like the “karate activity” because it was too embarrassing.

While there was an overall positive perception of the YPD program, students across most schools reported that there was always a small minority of students (3 or 4) who did not like receiving YPD. Generally, students seem to have had a good relationship with both teachers and captains. Students used positive adjectives to describe how they viewed the captains, such as “kind”, “accessible”, “caring”, and “warm.” Some YPD captains also reported that their students often seek them out on Facebook to add them as contacts, but captains wait until after the end of the CBA program to accept their requests. Most students

also had a positive opinion of their ECA and CBA teachers in general. They thought the teachers were “supportive” of their goals, empathetic, and showed concern for them. One student mentioned that every time a student dropped out of the CBA program, the ECA teacher would always talk to them about the importance of their education and encourage them to finish. Most male students mentioned valuing the camaraderie with YPD captains and “being able to joke with” teachers. In addition, two students who continued their education in a regular high school mentioned that CBA teachers were “more understanding” compared to their current ones, whom they also described as “more strict and angry.” Secretariat staff also corroborated this, explaining that their CBA students may sometimes feel scared to join a regular high school.

As another way to gauge what students thought of the YPD captains’ role and contributions, students were asked what they thought of having the YPD captain in other classes. Most students thought it would be beneficial and gave various reasons, such as that it would help with their self-esteem, it would foster responsibility in them, and it would help them pay attention to their activities and help make the classes less monotonous. A few students suggested that classes like Math would be a good option because these were more difficult.

4.5.2. Changes in Socio-emotional Skills

Students also discussed the skills that were targeted by the YPD program. Learning communication skills featured most prominently in their responses. About one-half of the students, most of them female, said that they valued learning to speak in public, as well as acquiring and portraying a general attitude of confidence (“learning to express with ease”). They explained that this skill had never been expected of them, especially not in a class setting. This view was also reinforced during focus groups with treatment teachers, who highlighted that their students learned to speak in public and that by the end of the year they would present in front of their class with ease. A few students also mentioned certain activities that helped them in their self-efficacy, such as “The Map of My Life”, where students were encouraged to write down the steps they need to take to achieve both short- and long-term objectives.

While students did not address any issues related to other skills, such as conflict-resolution or assertiveness, evaluators learned from YPD captains and treatment teachers of conflict situations that took place. One captain reported helping the treatment teacher with discipline in the class in a case where some students had belonged to a gang and initially tried to intimidate other students and teachers. The captain explained how she was able to gradually gain the trust of these students by being accessible and understanding yet also commanding discipline from students. This captain also reported counselling a student with regard to his girlfriend’s pregnancy and offering to accompany him to the school’s counselor. Another captain reported having to break up a physical fight between two female students, as well as consoling and counselling one of the students who was too upset to engage in the class. Finally, a treatment teacher acknowledged that the YPD captain was particularly supportive in helping her manage the classroom of younger students, who tended to be the most disruptive. However, as none of the students in the focus groups reported on similar situations, it is difficult to know the extent to which this type of learning was taking place.

4.5.3. Students' Decision-Making Related to Current Schooling and Working

Although evaluators tried to organize focus groups with a balanced mix of students who were either working or studying, the majority of students who participated were only studying and not working. Family support appeared to be one of the most influential factors contributing to student decision-making. Treatment students reported that their families were an important influence in their decision to attend the CBA and to continue studying. Most participants reported that either a parent or a close relative had urged them to continue their education. The few young women who already had a small child wanted to study to get a better job and offer better opportunities to their children. While they acknowledged that raising a child and studying was a challenge, they had their family's support to continue their education.

In addition, while the YPD program did not substantively change student's educational goals, most students felt YPD helped to keep them motivated to pursue their objectives. In this sense, the YPD captains acted as another source of support and advice for students. This was particularly important to the few students who reported not having the support of their families. YPD learning dynamics such as "The Map of My Life" likely provided additional structure and reinforced the students' previously held views and intentions.

4.5.4. Students' Future Educational and Career Aspirations

During focus groups with treatment students, participants were asked about their educational and career aspirations beyond CBA. Almost all participants reported that they wanted to continue their education, and the majority were presently attending a regular public or vocational high school. Two students had interrupted their studies after graduating from CBA for personal or health reasons but were planning on restarting their studies the following school year. In terms of career aspirations, students were interested in pursuing various activities, such as nursing, information technology, police or military service, gastronomy, architecture, or owning their own business. Overall, students reported having these educational or career aspirations before joining the CBA program and asserted that these plans were not affected by YPD. Instead, students alluded to the fact that the YPD program acted as additional support and motivation for them. Although some students were more certain than others of their possible career paths, most joined the CBA program as a concrete step toward achieving their career objectives.

4.6 STUDY LIMITATIONS

This study benefits from the robustness of a randomized controlled trial design, which randomly assigned minor students to treatment and control groups. However, some potential limitations are noted below.

A key challenge for this study is the possibility of contamination effects from the treatment classrooms to the control classrooms due to the fact that treatment teachers often taught additional subjects to control students. Though schools provided two teachers for the ECA class, school capacity and teacher shortages dictated that YPD-trained teachers also taught social studies or natural sciences to control students. This issue was explored further with treatment teachers during focus group discussions. Indeed, two out of seven teachers admitted that they have used "bits and pieces" of a YPD dynamic in other subjects like

natural sciences. This suggests that treatment teachers in at least two schools likely introduced some YPD material to control students while teaching other subjects, which indicates possible contamination. This can lead to an underestimation of the true effects of the treatment.

Another issue emerged during focus group discussions with control teachers. At least one control teacher said he realized that YPD was part of a study to see which teaching method worked better. He explained that this made him feel even more motivated to work hard to prove that his more traditional methods were also effective. This points to another threat to the internal validity of the experiment stemming from a possible John Henry effect introduced by reactive behavior of the control group. This can also contribute to an underestimation of the true treatment effects.

A related limitation of the study was the difficulty of separating the effect of the program from the effect of the teacher, since we could not assign teachers randomly to classrooms. Random assignment of students ensured that the average baseline characteristics of students in the treatment and control group classrooms are similar. However, this design did not remove differences in the quality of individual teachers. While we indicated that treatment and control teachers were very similar in terms of most observable characteristics (Exhibit 15), they might differ in unobservable aspects such as motivation, teaching ability, or predispositions that can affect student outcomes regardless of the YPD training. Furthermore, several treated teachers had previously participated in YPD implying that treated teachers were differentially exposed to the program at the start.

The fact that minor students can “age out” during the intervention also presents a limitation of the study. Random assignment was possible only for the group of students aged 15 to 17. During the school year, some 17-year-olds turned 18 and are no longer considered minors. Therefore, they were not subject to the same regulations limiting hazardous child labor. As described above, some 17-year-olds who turned 18 during the school year were already grouped with the older students at baseline, thus reducing the number of students who will age out. For the remainder of the students who were aged 18 and above at the time of follow-up, we used the same child labor definitions, except for a different threshold on the number of hours worked to determine whether a youth worked long hours or not.

Furthermore, it is important to keep in mind that the sample of the seven schools included in the evaluation is not necessarily representative of the 11 schools where the YPD program was implemented during the 2016–2017 program year. As described in Chapter 2, only the largest schools were selected, since they could accommodate two ECA teachers and thus the randomization for the impact evaluation. Thus the (lack of) program impacts estimated for the 7 schools cannot be extrapolated to the rest of the YPD schools, which are smaller and likely to be very different along a series of other characteristics that can influence the effectiveness of the YPD program. Although the specificity of the population and schools targeted by the program and by the evaluation means that the results of this study may not be readily applicable to other contexts, the issues raised are potentially relevant in many contexts.

Another limitation of the study is related to the difficulty of tracking students after the end of the school year. While the majority of the students were still in the classroom at the end of the school year, a substantial proportion of students had dropped out and were very difficult to track and reach to

administer the survey in other settings. While OPE was able to administer the survey to some dropouts, the majority of them could not be contacted even after trying multiple telephone numbers and other contact information.

While the final attrition rate was in line with what was initially estimated, this reduced the sample size available to detect program impacts. The power calculations based on the final sample size indicate that the sample is powered to detect relatively small changes in socio-emotional skills (i.e., about 4.2 percent-4.5 percent or higher). Regarding the confirmatory HCL outcome, the power analysis indicate we can detect larger changes in HCL (i.e., 27 percent or higher). The estimated impacts for the socio-emotional skills are small and not statistically significant (and below the MDE). The estimated HCL impacts are also smaller than the MDEs. If the true impacts on the socio-emotional skills are so small that are unlikely to affect more outcomes downstream (as suggest by the implementation findings), it is unlikely that they could be detected even with larger sample sizes.

For the qualitative analysis, there were two main limitations when gathering student perspectives on the YPD intervention: (1) the difficulty in recruiting students, which translated into smaller than anticipated focus groups, and (2) the fact that the students who agreed to participate in the focus group could have been more likely to have had a positive experience with the intervention. As mentioned earlier, the evaluation team had to make multiple attempts to reach adequate representation from all 7 schools.

In addition, the evaluation design was also limited by the evaluator's ability to collect information regarding changes in teacher's teaching practices and in-classroom implementation. During initial discussions with CBA and YPD coordinators, it was agreed that having an evaluator in the class would not be appropriate for the intervention. While data sources like interviews with YPD captains and focus groups with teachers yielded relevant information regarding teacher's practices, the evaluators only collected this information several months after the end of the program implementation and not during the academic year.

Finally, in interpreting the results of this evaluation, it is important to keep in mind that the evaluation assessed the impact of the YPD program as it was implemented, with the limitations described in the program implementation and fidelity sections, rather than as it was initially designed.

Chapter 5: Summary and Recommendations

5.1 SUMMARY OF FINDINGS

This report presents the findings from the one-year impact evaluation of the YPD program, an add-on school curriculum and teacher professional development initiative implemented in several municipal schools in Quito, Ecuador, targeting at-risk youth between 15 and 25 years of age who dropped out of middle school. The YPD program focused on strengthening the socio-emotional skills of these at-risk youth. This evaluation assesses the extent to which focusing on the socio-emotional skills of at-risk youth can generate changes in both school and labor outcomes.

To evaluate the YPD program, we implemented a randomized controlled trial study in seven municipal schools in Quito. We randomized a total of 806 younger students 15–17 years of age to different classrooms within each school, assigning 403 to treatment classrooms (taught by a YPD-trained teacher) and 403 to control classrooms (taught by a regular teacher). As part of the evaluation activities, IMPAQ, together with our field data collection partner OPE conducted a baseline (during fall 2016) and a follow-up (during summer 2017) student survey to collect information on students and whether they were involved in hazardous (child) labor. We further collected administrative records from the Secretariat of Education on school outcomes (during summer 2017). Finally, we conducted key informant interviews and focus group discussions with program implementers and beneficiaries (during November 2017 – February 2018).

While, for the most part, the YPD program was perceived as a positive experience by students, who felt YPD helped keep them motivated to pursue their objectives, the one year findings suggest that the program had not generated the anticipated significant positive effects in the student outcomes of improved socio-emotional skills, school and labor outcomes, educational aspirations, and youth avoidance of other risky activities.

- While small and positive effects exist for social skills and school climate, the results are surprisingly negative for self-efficacy. All three impact effects were not statistically significant. Evidence from the qualitative findings, however, suggested that students liked the YPD activities and, especially females, liked all activities related to the development of communication skills.
- We found no statistically significant effects on the likelihood of being in HCL, nor in the HCL components. We found negative and not statistically significant effects on the likelihood of working in hazardous occupations, at night, in hazardous working conditions, and suffering injuries at work. We found positive but not statistically significant effects on likelihood of working in hazardous industries, working long hours, and suffering harassment at work. We also found no significant effects on additional labor outcomes such as likelihood of working, number of hours worked, and likelihood of engaging in irregular employment.

- We found positive but not statistically significant effects on students' educational aspirations, which can be partly explained by aspirations the students had before joining the CBA program (i.e., not a result of YPD). Rather, the YPD acted as additional support and motivation for existing aspirations. The data show a reduction in the likelihood of being part of a gang and using drug, but the results are not statistically significant.
- We generally find no statistically significant effects on academic outcomes such as graduation, test scores, behavior marks, and attendance. The analysis showed positive and not statistically significant effects on final grades and attendance and negative and not statistically significant effects on graduation rates and behavior marks, with no statistically significant differences between treatment and control group members across the various academic outcomes.
- Although our study is not generally powered to detect effects by subgroups, we implemented an exploratory analysis to investigate whether any patterns emerged by gender. By looking at separate results by female and male students, we found small, positive but not statistically significant effects on females' self-efficacy and social skills, and a small, negative not statistically significant effect on female perception of school climate. The results for males are of opposite sign and indicate a statistically significant lower self-efficacy for male students in the treatment group relative to male students in the control group, a small, negative and not statistically significant effect on social skills, and a small, positive but not statistically significant effect on school climate. We also found some positive and statistically significant effects on the likelihood of working longer hours for boys but a negative and not statistically significant effect for girls. These results need to be interpreted with caution given the small sample sizes. Nevertheless, these results provide some suggestive evidence that male and female students may have been affected differently by the intervention.

This impact study of the effectiveness of the YPD program contributes to the research literature in several ways. The evaluation uses an RCT design which provides causal evidence on youth outcomes. Because YPD targets adolescents, our study helps expand the relatively scarce evidence base on adolescent programs targeted at youth, especially in developing countries. Furthermore, we investigate a comprehensive set of outcomes. These outcomes include cognitive skills, as measured by test scores; self-reported measures of socio-emotional skills and behavioral indicators school attendance, program completion; labor market outcomes and likelihood of participating in other risky activities.

This study also contributes to the literature by integrating survey and administrative data with a rich set of qualitative information which helped assessed program fidelity and the mechanism of change in program outcomes. In particular, since YPD is a teacher training program, the main mechanism through which the YPD program is expected to affect students' socio-emotional skills is through changes in teacher pedagogical practices. Yet, the results of our implementation data suggest that the program was not always implemented as expected and the qualitative analysis found that most teachers felt the training provided was not sufficient to meet this objective and did not perceive any changes in their teaching practices. This highlight the importance to have good implementation data to help "unpack" observed program impacts (or lack- thereof). Recommendations for program implementation and evaluation of similar programs are included below.

5.2 RECOMMENDATIONS

We next discuss some recommendations we have formulated based on this study. The recommendations below are based on the evaluation team's findings and conclusions and are influenced by the specific context in which the program was implemented.

5.2.1 Recommendations for Future Evaluations of Similar Programs

- **Perform needs assessment.** An initial rich needs assessment with descriptive quantitative and qualitative data collection could help us understand the context of an intervention, its targeted groups, whether the intervention needs to be tailored for the specific context (e.g., schools), as well as providing other useful information to assess feasibility for a full-scale experimental evaluation of its effectiveness. For example, a better understanding of teacher expectations and needs in terms of training and their current pedagogical practices could have helped better align teacher expectations about the types of YPD dynamics to be implemented in the schools as well as the amount of training needed by the teachers.
- **Randomize at the school level.** While it was not feasible for this study, which was designed as a randomized controlled trial of students to different classrooms within schools, an alternative that can minimize contamination involves random assignment at the school level (provided there are a sufficient number of eligible schools). Furthermore, it would have minimized the chances that control teachers would adopt reactive behaviors after learning that YPD was part of a study to see which teaching method worked better. A randomization at the school level, rather than within school, would limit these effects since it would limit contact between treatment and control groups and would likely leave the comparison group unaware of the existence of a treatment group. However, a school level randomization requires larger sample sizes and resources.
- **Include subgroup analysis by boys and girls.** As described in our results sections, although we are generally not powered to do a rigorous analysis by gender given the sample sizes, we found some suggestive evidence that male students can be impacted differently than female students by these types of interventions. It would be important for future studies to have large enough sample sizes to estimate program impacts by gender and provide greater insight into how boys and girls respond to such interventions.
- **Expand the study with impacts on teacher outcomes.** As teachers are the main vehicle to transmitting the program to students, a sufficient sample size of teachers can allow to measure the intermediary program effects on teacher pedagogical practices, their own socio-emotional skills and predisposition to teaching such skills to their students. Teacher surveys and classroom observation data collection can enable further investigation into the mechanisms of change.

In addition, based on IMPAQ's collaboration with YPD in conducting the evaluation, we provide a number of suggested recommendations for program implementation to help improve the program in the future. The recommendations based on our findings are described in more detail below:

5.2.2 Recommendations for Program Implementation

- **Restructure the teacher-training component of the intervention.** One of the objectives of the YPD program was to change teacher teaching practices. However, most teachers felt the training provided was not sufficient to meet this objective, and they did not perceive any changes in their own teaching practices. Given the unique context of the CBA’s accelerated format, and based on focus group discussions with teachers, we recommend restructuring the teacher-training component of the intervention to provide CBA teachers with more time and support before they are expected to implement learning dynamics with students. For example, CBA teachers could begin the YPD training a few weeks before the official start of the school year and continue during the students’ preparatory period, which usually lasts a month. This would give teachers at least 5 to 6 weeks of preparatory training before they implement a YPD dynamic with their students. Additionally, the restructured training could include a focus on reinforcing the teachers’ own socio-emotional skills. Evidence-based interventions in which teachers foster socio-emotional skills among their students by incorporating those skills into the classroom, require teachers first to possess those skills themselves.⁶²
- **Incorporate YPD into other subjects of the CBA curriculum.** Although YPD managers believe the YPD methodology can be implemented in other subjects because it is not content-specific, treatment teachers repeatedly stated that this was not the case. To resolve this discrepancy, part of the teacher training could include a more straightforward demonstration of how YPD can be applied to other subjects. Instead of confining YPD to only a single subject within CBA, YPD captains could instead actively help teachers incorporate the YPD dynamics, or important components or messages of the dynamics, into a regular subject like social studies or natural sciences. This, in turn, will help clarify YPD’s objectives and prove to teachers the importance of the messages and reflections underlying the YPD dynamics. Moreover, whole-school approaches where all school staff are engaged in socio-emotional learning are likely to be more effective than isolated program-based interventions.⁶³
- **Prioritize mastery experiences that are familiar to teachers.** Treatment teachers showed a strong preference for learning dynamics that emphasized what they described as “tangible skills”, such as the Business Plan dynamic. Emphasizing these types of dynamics early on could accelerate teachers’ acceptance of the intervention since they would see their students succeed at the type of tasks that are more familiar to them and that they already recognize as inherently valuable.⁶⁴ It is unlikely that this change in approach would alter students’ acceptance of the program since

⁶² Guerra, N., Modecki, K., & Cunningham, W. (2014). Developing social-emotional skills for the labor market. Policy Research Working Paper 7123. Washington, DC: World Bank Group.

⁶³ Hamedani, M., & Darling-Hammond, L. (2015). Social emotional learning in high schools: how three urban high schools engage, educate, and empower youth. Stanford, CA: Stanford Center for Opportunity Policy in Education.

⁶⁴ Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.

they did not seem to have a clear preference for a specific type of dynamic and enjoyed almost all the dynamics.

- **Deliver intervention directly to students.** An alternative approach would be to remove the teacher-training component from the YPD program and instead have YPD captains themselves deliver all dynamics to students. The Secretariat staff and some teachers favor this approach because it would remove the pressure most teachers felt to complete both their assigned subject and the YPD activities. In this scenario the YPD program would become a type of extra-curricular activity, but it is not clear if students would be required to participate. Another option would be to integrate it in a different subject of the school curriculum – teachers suggested physical education class as an option. While this is less ideal than a whole-school approach, a direct delivery by the experienced captains has the potential to be an effective model.

The original evaluation design plan for the impact evaluation of YPD included a second follow-up to estimate long-term program effects. However, given that the short-term program effects did not materialize, there is little evidence to suggest that longer terms effects will and thus there is little evidence in support of moving forward with a second follow-up.

5.3 OTHER INFORMATION: INSTITUTIONAL REVIEW BOARD REGISTRATION AND EXEMPTION

To ensure that our evaluation study adheres to ethical guidelines for conducting research involving human subjects, during the follow-up survey data collection, we submitted a modification to our previously determined exempt institutional review board (IRB) protocol to Advarra (formerly Chesapeake) IRB (Pro00018617). The modified IRB protocol included a revised parental consent form to allow for verbal consent from parents and to allow for the follow-up student survey to be administered in settings other than school classrooms, in person or by telephone. IMPAQ received approval from Advarra IRB on September 5, 2017 (MOD00226278).

Additionally, we submitted a new IRB protocol for the qualitative data collection for the implementation evaluation, and we included the focus group discussion guides, key informant interview protocols, and consent forms in both Spanish and English for review. We received approval from Advarra IRB on November 15, 2017 (Pro00023558).

Appendix A: Child Labor Definitions

As described in Chapter 1, Ecuador national legislation does not include detailed terminology to define the different categories of child employment or child labor, such as ‘light work’ or ‘hazardous household services’. However, it codifies in its labor laws the obligatory components set forth in the relevant international treaties, such as defining the basic minimum working age and the minimum age for hazardous work, limits on hours and conditions for working adolescents, and the abolition of the worst forms of child labor.⁶⁵ This appendix provides a high-level description of Ecuador’s national definitions, followed by a description of the definitions used in this evaluation.

NATIONAL DEFINITIONS

Worst Forms of Child Labor

Ecuador’s Labor Code (art. 138) provides a framework for the types of work that are prohibited to minors by incorporating the International Labour Organization’s (ILO) description of what constitutes the worst forms of child labor. The Labor Code includes a brief list of work that “by its nature or conditions” may be harmful to the health, security, or morality of minors; such work is further defined in ILO’s Recommendation 190 as hazardous child labor (HCL). The Childhood and Adolescence Code (C&A, 2003) also provides a list of the broad types of work that are prohibited for adolescents; this list is closely related to the HCL list in the Labor Code. The National Council for Childhood and Adolescence is the government body in charge of maintaining the detailed list of work activities prohibited to minors (CNNA16), which expands on the C&A Code list.⁶⁶

Minimum Legal Age

The Constitution of Ecuador sets the minimum working age for adolescents at 15 years of age.⁶⁷ According to the C&A Code, adolescents between 15 and 17 years old may work under protected conditions described below.⁶⁸ The required minimum age for hazardous work is 18.⁶⁹

⁶⁵ The following documents inform our definition and measurement of child labor: ILO’s Minimum Age Convention of 1973, No.138 (C138); ILO’s Convention on the Worst Forms of Child Labour, No. 182 (C182); ILO’s Recommendation to C182. No. 190 (R190); ILO’s 18th International Conference of Labour Statisticians of 2008 (ICLS18); ICLS18-RII: Resolution II, Resolution concerning statistics of child labor, adopted in the 18th ICLS, and ILO’s 19th International Conference of Labour Statistics Resolutions of 2012 (ICLS19); Ecuador Código de la Niñez y Adolescencia (Childhood and Adolescence code, C&A code, 2003); Consejo Nacional de la Niñez y Adolescencia (CNNA), Resolución 16 (Resolution 16 of the National Council for Childhood and Adolescence, 2008); Ecuador Labor Code (LC, 2005).

⁶⁶ This is in line with ILO’s recommendation that “[t]he types of work referred to under Article 3(d) [hazardous child labor] shall be determined by national laws or regulations or by the competent authority ... ” (C182, art. 4).

⁶⁷ ILO, Constitution of Ecuador; and C&A Code, 2003. Any individual under 18 years of age is considered a minor by the Constitution of Ecuador.

⁶⁸ The C&A Code treats individuals who turn 18 years old as adolescents under certain exceptional circumstances.

⁶⁹ C&A Code, 2003.

Hours and Working Conditions

The Constitution and the Labor Code designate the number of hours and type of work permitted for working adolescents. Adolescents may not work more than six hours a day or 30 hours a week, over a maximum of five days a week. Night work between 7 p.m. and 6 a.m. is prohibited, as are hazardous workplace conditions, activities, or occupations that may endanger adolescents' development or well-being.

Hazardous Unpaid Household Services

Although the number of hours for household chores is not explicitly limited in national laws, Ecuador's National Statistics Office keeps track of children and adolescents aged 5 to 17 who are engaged in household work for more than 14 hours a week. It includes these statistics alongside the reports of children engaged in child labor. The 19th International Conference of Labour Statisticians (ICLS19 Report III, par. 41) notes that children who combine household chores with employment are less likely to be in school. For this evaluation, household chores are not part of the HCL measurement framework, but data on household work are presented separately for descriptive purposes.

DEFINITIONS USED IN THIS EVALUATION

For this evaluation, we apply the child labor measurement framework criteria outlined by the ILO to the portion of the CBA minor population, 15 to 17 years of age.⁷⁰ Because the minimum working age in Ecuador is 15, the child labor definition does not apply to our target population. However, since minimum age for working under hazardous conditions is 18, we are studying the prevalence of HCL among students aged 15 to 17. Specifically, adolescents are considered to be engaged in HCL if they are working in designated hazardous industries; in hazardous occupations; working long hours or at night or under hazardous working conditions, such as being exposed to dangerous substances or working at heights.

As described earlier, some students who were 15 to 17 years of age at the time of the baseline survey had turned 18 by the time of the follow-up survey. For students who turned 18 we still apply the above definitions. The main difference is that we do use a threshold of more than 43 hours a week for them (rather than the 30 hours a week used for minors) as a criterion to define "hazardous work."

Finally, in addition to HCL, we measure "irregular employment," which is the sum of three components: vulnerable employment, casual-wage employment, and temporary (non-casual) employment, each of which is defined below.

- **Vulnerable employment** includes own-account workers and contributing family workers. These groups are often characterized by inadequate earnings, difficult conditions of work that undermine their fundamental rights, or other characteristics of decent work deficits.

⁷⁰ See http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_223907.pdf

- **Casual-wage laborers** mostly include seasonal or occasional jobs or workers in task-based jobs, who usually face employment of a precarious nature and lack of access to social protection.
- **Temporary workers (non-casual)** are paid employees engaged on a contract with a duration of fewer than 12 months.

Exhibit 29 describes how the survey questions have been mapped to each component of the definitions of hazardous child labor.

Exhibit 29. Crosswalk of Survey Questions to HCL Definitions and Irregular Employment ^(a)

| Hazardous (Child) Labor | Irregular Employment |
|--|---|
| Respondents are considered to be in hazardous child labor if they meet any of the following criteria: | Students are considered to be in irregular employment if they meet any of the following criteria: |
| <ul style="list-style-type: none"> ▪ They list as industry in Q16 any of the industries deemed hazardous in Ecuador legislation ^(b) | <ul style="list-style-type: none"> ▪ We proxy vulnerable workers as follows: they answer Q11 in a way that indicates they are working in their own business or unpaid in a family business (options a and d) or are self-employed according to Q18 and Q19 |
| <ul style="list-style-type: none"> ▪ They list as occupation in Q15 any of the occupations deemed hazardous ^(c) | <ul style="list-style-type: none"> ▪ They answer Q18, Q19, or Q20 in a way that indicates they are temporary workers (casual or non-casual) |
| <ul style="list-style-type: none"> ▪ They say in Q12 that they work more than 30 hours a week (or more than 43 hours a week if they are age 18 and above at follow-up) | |
| <ul style="list-style-type: none"> ▪ They say in Q13 that they work at night (7 p.m.–6 a.m.) | |
| <ul style="list-style-type: none"> ▪ They respond “Yes” to any item in Q21 (exposure to dust/fume/noise, etc. at work), Q22 (physical or sexual harassment at work), or Q23 (work-related injuries and health issues) | |

Note:

Estimates related to household chores are presented separately because household chores are not included in the formal definitions of ‘hazardous child labor’.

(a) Unless otherwise noted, the question number refers to the follow-up survey.

(b) ‘Hazardous industries’, according to Ecuador legislation, include construction, mining, and agriculture (specifically production of banana, flowers, palm oil, and timber).

(c) For ‘hazardous occupations’ we rely on the lists of prohibited work provided by National Council for Childhood and Adolescence – Resolution 16,⁷¹ as well as the shorter lists in the Labor Code art. 138, and C&A code art. 87. The activities/occupation in the survey have then been mapped to the legislation. Based on this information, the following occupations have been coded as ‘hazardous’: miner, car repair handyman, carpenter, construction worker, domestic worker (living in the house), packer, street worker, waiter or bartender in a bar/cantina, taxi/motorcar driver, custodian or security guard, social club worker, recycler of waste and garbage collector, brick maker, glazier, locksmith, aluminum worker, electrician, welder.

⁷¹ Compendium for hazardous child labor list and related legislation for selected countries: Ecuador. http://www.ilo.org/ipecc/informationresources/WCMS_382487/lang--en/index.htm

Exhibit 30. Types of Occupations Listed In the Survey and Whether They Are Considered Hazardous

| What kind of work do you usually do in the job/activities you performed last week? | Hazardous List (s) | Hazardous (Y/N) |
|---|---|-----------------|
| Miner | Hazardous according to LC art. 138 list item # (f), C&A art. 87 list item #1; CNNA16 list item # 35 | Y |
| Bread and pastry making | Prevalent occupation among our population but not considered hazardous | N |
| Car repair shop handyman | Hazardous according to CNNA16 list item #47 | Y |
| Carpenter | Hazardous according to CNNA16 list items #17, #43 | Y |
| Cleaning/janitor | Prevalent occupation among our population but not considered hazardous | N |
| Construction worker | Hazardous according to CNNA 16 list item #29 | Y |
| Domestic worker (living in the house) | Hazardous according to CNNA16 list item #74 | Y |
| Domestic worker (living outside the house) | Prevalent occupation among our population but not considered hazardous | N |
| Loading/unloading in markets/Packer | Hazardous according to CNNA 16 list item #86 | Y |
| Street worker, including shoe shining, market vendor, windshield cleaner, street entertainer, bike messenger, trader, car washer, look after cars, bus payment collector or other street work | This is not on any of the LC, C&A, or CNNA16 lists but street-work activities are flagged as hazardous per Ecuador laws or regulations in this document https://www.dol.gov/ilab/reports/child-labor/findings/2014TDA/ecuador.pdf ; Street work will be considered 'hazardous' for our purposes | Y |
| Cook or Waiter/waitress (in restaurants) | Prevalent occupation among our population but not considered hazardous | N |
| Waiter/waitress in bar/cantinas or bartender-serving alcoholic beverages | Considered hazardous according to item in LC art. 138 (k); CNNA16 list item #70 | Y |
| Taxi/motorcar driver | *Not hazardous per se, but if younger than 18 'illegal' will be flagged | Y |
| Custodian or security guard | Hazardous according to LC art. 138 (m); CNNA16 list item #71 | Y |
| Social club worker (in places for gambling, selling of alcoholic beverages, gentlemen's clubs) | Hazardous according to C&A list item #3 | Y |
| Recycler of waste, scrap metal, and nonmetallic waste | Hazardous according to CNNA 16 list items #55, 56 | Y |
| Garbage worker/collector | Hazardous according to CNNA 16 list item #60 | Y |
| Brick maker | Hazardous according to CNNA 16 list items #29, #37, #45 | Y |
| Other (please describe in your own words your main activities or what they make you do) | Students' responses here will be mapped to determine whether hazardous or not | |

Exhibit 31. Types of Industries Listed In the Survey and Whether They Are Considered Hazardous

| What economic sector/industry does your job (or jobs) belongs to? | Hazardous List (s) | Hazardous (Y/N) |
|---|--|-----------------|
| Agriculture (production of banana, flowers, palm oil, timber) | Not on any of the lists, but these are flagged as 'hazardous' per Ecuador laws or regulations in this ILAB document: https://www.dol.gov/ilab/reports/child-labor/findings/2014TDA/ecuador.pdf . Will be considered as 'hazardous' (although we expect very few minors in agriculture) | Y |
| Mining and Quarrying | Considered hazardous according to LC art. 138 (a) , C&A list item #1 | Y |
| Manufacturing | *Not considered hazardous per se in legislation | N |
| Construction | Not on any of the lists, but these are flagged as 'hazardous' per Ecuador laws or regulations in this ILAB document: https://www.dol.gov/ilab/reports/child-labor/findings/2014TDA/ecuador.pdf . | Y |
| Hotels and restaurants | Not considered hazardous per se | N |
| Wholesale and retail trade | Not considered hazardous per se | N |
| Informal or ambulatory sales | Not considered hazardous per se | N |
| Repair of motor vehicles, motor cycles and other machinery | Not considered hazardous per se | N |
| Transportation/storage | Not considered hazardous per se | N |
| Other service activities | Not considered hazardous per se | N |
| Other (please briefly describe) | Students' responses are mapped to determine whether hazardous or not | |

Note: *The CNNA16 hazardous work list includes several activities taking place in the manufacturing industry (e.g., manufacturer of glass); these represent very specific occupations or activities that can expose students to dangerous agents or working conditions. These aspects will be captured in subsequent survey questions about working conditions (Q21–Q23) or if students list specific manufacturing occupations under the “other” option in Q16.

Appendix B: YPD Curriculum

Exhibit 32 provides a description of YPD curriculum activities together with the objectives for each activity.

Exhibit 32. Description of YPD Learning Dynamics

| Learning Dynamics | Description |
|--|--|
| The Brand | The main objective of this dynamic is to: (1) develop students' own brands identifying their personal attributes and understanding the importance of marketing through development of a personal marketing plan; (2) understand that each brand represents the student's characteristics and attributes; and (3) help students self-reflect about their strengths and weaknesses. Through making a list of their personal talents and attributes, students begin to realize which actions they should be boosting in their daily lives to present themselves efficiently as a brand. |
| The Molecule | To develop awareness about the group identity and recognize the importance of the team group is the main goal to achieve in this dynamic. The students should identify their main individual characteristics (Personal Molecules), as well as the group's common characteristics, what unifies them as a group (Group Molecule). Once they do this, they need to decide on a group name, logo, and war cry. |
| The Challenge of the Future of Education | The group of students should identify problems in their school system and present innovative solutions to them. This dynamic develops the analytic, problem-solving, and innovative capabilities of the students as well as the team and their communication abilities. This activity teaches techniques of problem-solving and empowerment through self-change, focusing on a social responsibility project. |
| The List of My Life | This dynamic allows participants to become aware of what gives meaning to their lives. After watching some videos, the students must write down a list of concrete actions, situations, or people that give them meaning in their everyday lives. Next, they watch another video and write down things that they wish to do before they die. This emotive dynamic motivates students to take actions and improve their lives through building a sense of empowerment. |
| Business Plan | This lesson is geared toward learning what a business plan is and how to develop one. The students will learn how to transform an idea into a real company project and present their final product in teams in front of their classmates. During this dynamic, the students develop their entrepreneurial spirit and goal/objective orientation, planning, and team work. |
| The Map of My Life | Participants should reflect on their main life objectives and consider what resources they will need to achieve them and what actions they will have to take to obtain those resources. They will present their thoughts in a map of their life, which will determine what actions are necessary to achieve these objectives in the short, medium, and long term. This dynamic helps participants reflect about their lives, develop goal/objective orientation, and specifically determine the differences between what is important and what is urgent. |
| Clic | In this dynamic participants will learn techniques to empathize with others. By discovering the power of nonverbal language, the students learned to "click" with those they are addressing through verbal and nonverbal communication lessons. The main objective is to understand how the communication process works and apply new communication tools through role play in order to empathize and influence, verbal and nonverbal language. |
| Adagio | The students will learn to interpret and express emotions as part of the communication process by listening to Mozart's Concerto N°21. They have the chance to interpret music with written language and express someone else's interpretation using verbal and nonverbal language, words, and gestures. The objective is to develop communication skills, empathy, and creativity in order to transmit emotions while they tell a story. |

| Learning Dynamics | Description |
|-----------------------------|---|
| The Shakespeare Experience | Through the creation of two theater companies and the production, rehearsal and performance of a classic play by Shakespeare, the students must work on their verbal and nonverbal language, while managing and controlling stage fright. The team members should apply all their creativity and display it on stage; they must also plan and organize all the necessary materials and logistics needed for the play. |
| The Debate | The students, in teams, will need to make use of their communication skills in a debate contest. The subjects for this debate will be chosen by the teacher and the students in order to find interesting topics. The teams will have two sessions for this activity. In the first session they must prepare the arguments for or against the subject and prepare a strategy as a team. In the second session, the teams with their communication and persuasion skills must debate cleverly in order to win. All the communications tools learned prior to this dynamic will be very helpful for them. |
| TV News | Understanding the importance of verbal and non-verbal communication is fundamental for this activity since the students will have to present News on a television news set they build themselves. In groups, they should prepare a complete TV News set and a compilation of the latest news, which they then must present in front of their classmates. |
| The Weather Man** | Not available |
| Effective Presentations | The students are divided into teams and will pretend to be an advertising agency that has to design a striking, successful ad presentation. The main objective of this dynamic is to develop skills in preparing and delivering compelling presentations, as well as communicating in a clear and concrete way. |
| Modelling a Speaker* | Not available |
| The Architecture of an Idea | The goal of this dynamic is to develop: student creativity within the team, communication skills, and the ability to work in hostile environments with limited materials. The students are divided into groups and should become architects assigned to build an emblematic skyscraper for a magnate. While they are building it, the captains (Magnates) will set some obstacles or challenges for the whole group, such as dancing while they are building or using just one hand. This should motivate them to be creative and help each other to complete the task. |
| Cartoon Experience | The students in teams will become audiovisual-creativity companies that have to develop a cartoon concept in accordance with the specifications of the animation industry. Each group must develop their cartoon and present it to the executive of an animation studio, which role will be played by the captains. The main objective of this activity is to strengthen the process of developing ideas and results-orientation through a creative process. The fundamental skills learned from this dynamic are the ability to communicate and to work in teams. |
| Rhythm and Movement | The main objective of this dynamic is to develop coordination and a sense of rhythm in participants, while also exercising body language. The ability to listen through the video used in this dynamic is central to achieving the specific goals. Students also practice meditation after all the exercises they do in order to help them realize how they can silence their minds and relax their bodies. |
| Pop Star Experience | The students will become singers and give a musical performance in pairs or groups. They will choose a song to dance to it or sing it, displaying their skills. The main objectives of this activity are to develop self-confidence and self-control in order to communicate effectively and energetically. The passion, energy, and natural skill of transmitting emotions are a major part of the goal achieved in this dynamic. |

Note: Data compiled from YPDE staff documents.

Appendix C: Analysis of Missing Values

Exhibit 33 describes the total number of missing values on each outcome variable for analytic Samples C, D, E, F, and whether there are any statistically significant differences in the incidence of missing values between treatment (T) and control (C) groups.

Exhibit 33. Percentage of Missing Values on Outcomes

| Outcome | Number (%) of missing (1) | Number (%) of missing T Group (2) | Number (%) of missing C Group (3) | T-C (percentage points) (4) | Number (%) of missing (5) | Number (%) of missing T Group (6) | Number (%) of missing C Group (7) | T-C (percentage points) (8) |
|--|---------------------------|-----------------------------------|-----------------------------------|-----------------------------|---------------------------|-----------------------------------|-----------------------------------|-----------------------------|
| Survey-based Outcomes | Sample C (N = 676) | | | | Sample D (N = 638) | | | |
| Prevalence of youth working | 5 (0.740%) | 4 (1.194%) | 1 (0.293%) | 0.901 | 5 (0.784%) | 4 (1.266%) | 1 (0.311%) | 0.955 |
| Average number of hours worked | 74 (10.947%) | 35 (10.448%) | 39 (11.437%) | -0.989 | 68 (10.658%) | 33 (10.443%) | 35 (10.870%) | -0.427 |
| Prevalence of youth in hazardous (child) labor – overall | 53 (7.840%) | 22 (6.567%) | 31 (9.091%) | -2.524 | 51 (7.994%) | 21 (6.646%) | 30 (9.317%) | -2.671 |
| Prevalence of youth in hazardous industries | 28 (4.4142%) | 10 (2.985%) | 18 (5.279%) | -2.294 | 26 (4.075%) | 9 (2.848%) | 17 (5.280%) | -2.431 |
| Prevalence of youth in hazardous occupations | 24 (3.550%) | 8 (2.388%) | 16 (4.692%) | -2.304 | 23 (3.605%) | 7 (2.215%) | 16 (4.969%) | -2.754 |
| Prevalence of youth working long hours | 76 (11.243%) | 36 (10.746%) | 40 (11.730%) | -0.984 | 70 (10.972%) | 34 (10.759%) | 36 (11.180%) | -0.421 |
| Prevalence of youth working at night | 64 (9.467%) | 32 (9.552%) | 32 (9.384%) | 0.168 | 57 (8.934%) | 31 (9.810%) | 26 (8.075%) | 1.736 |
| Prevalence of youth working in dust, fumes, etc. | 79 (11.686%) | 41 (12.239%) | 38 (11.144%) | 1.095 | 72 (11.285%) | 39 (12.342%) | 33 (10.248%) | 2.093 |
| Prevalence of youth working with physical or sexual harassment | 94 (13.905%) | 48 (14.328%) | 46 (13.490%) | 0.839 | 87 (13.636%) | 45 (14.241%) | 42 (13.043%) | 1.197 |
| Prevalence of youths with injuries at work | 95 (14.053%) | 51 (15.224%) | 44 (12.903%) | 2.321 | 87 (13.636%) | 48 (15.190%) | 39 (12.112%) | 3.078 |
| Prevalence of youth in irregular employment | 19 (2.811%) | 9 (2.687%) | 10 (2.933%) | -0.246 | 19 (2.978%) | 9 (2.848%) | 10 (3.106%) | -0.257 |

| | | | | | | | | |
|--|---------------------------|------------------|-----------------|---------|---------------------------|-----------------|-----------------|---------|
| Average hours spent on household chores | 18 (2.663%) | 7 (2.090%) | 11 (3.226%) | -1.136 | 17 (2.665%) | 6 (1.899%) | 11 (3.416%) | -1.517 |
| Prevalence of youth doing chores at night | 90 (13.314%) | 41 (12.239%) | 49 (14.370%) | -2.131 | 86 (13.480%) | 39 (12.342%) | 47 (14.596%) | -2.255 |
| Average self-efficacy score | 1 (0.148%) | 1 (0.299%) | 0 (0.000%) | 0.299 | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 |
| Average social skills score | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 |
| Average school climate score | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 |
| Prevalence of youth equal or higher expectations | 7 (1.036%) | 3 (0.896%) | 4 (1.173%) | -0.277 | 7 (1.097%) | 3 (0.949%) | 4 (1.242%) | -0.293 |
| Prevalence of youth currently in gangs | 13 (1.923%) | 7 (2.090%) | 6 (1.760%) | 0.330 | 12 (1.881%) | 6 (1.899%) | 6 (1.863%) | 0.035 |
| Prevalence of youth ever used drugs | 99 (14.645%) | 39 (11.642%) | 60 (17.595%) | -5.954* | 92 (14.420%) | 35 (11.076%) | 57 (17.702%) | -6.626* |
| School-based outcomes | Sample E (N = 726) | | | | Sample F (N = 686) | | | |
| Prevalence of youth completing the program | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 | 0 (0.000%) | 0 (0.000%) | 0 (0.000%) | 0.000 |
| Average final grade | 67 (9.229%) | 36 (9.917%) | 31 (8.540%) | 1.377 | 61 (8.892%) | 34 (9.884%) | 27 (7.895%) | 1.989 |
| Prevalence of youth with good behavior | 171 (23.554%) | 102 (28.099%) | 69 (19.008%) | 9.091 | 156 (22.741%) | 93 (27.035%) | 63 (18.421%) | 8.614 |
| Average days school attendance | 109 (15.014%) | 71 (19.559%) | 38 (10.468%) | 9.091 | 101 (14.723%) | 64 (18.605%) | 37 (10.819%) | 7.786 |

Note: For survey-based outcomes, percentages in Column (1) are based on the total sample size of 676 students from Sample C. Percentages in Columns (2) and (3) are based on the corresponding T and C group sample sizes in Sample C (335 and 341, respectively, as shown in Exhibit 8). Percentages in Column (4) are based on the total sample size of 638 students from Sample D. Percentages in Columns (5) and (6) are based on the corresponding T and C group sample sizes in Sample C (316 and 322, respectively, as shown in Exhibit 8). For school-based outcomes, percentages in Column (1) are based on the total sample size of 726 students from Sample E. Percentages in Columns (2) and (3) are based on the corresponding T and C group sample sizes in Sample E (363 and 363, respectively, as shown in Exhibit 8). Percentages in Column (4) are based on the total sample size of 626 students from Sample F. Percentages in Columns (5) and (6) are based on the corresponding T and C group sample sizes in Sample F (344 and 342, respectively, as shown in Exhibit 8).

Appendix D: Power Calculations

This appendix reports the power calculations using the final analytical sample size. We perform the analysis for the main confirmatory outcome (HCL) and for the socio-emotional skills since they represent first intermediate outcome we expected to be affected by the intervention based on the theory of change, and the main mechanism through which HCL can change. The results are presented below:

Exhibit 34: Minimum Detectable Effects (MDEs)

| Outcomes | Average Outcome | Variance | MDE |
|--|-----------------|----------|---------|
| Self-efficacy scale | 3.1 | 0.24 | 0.15 |
| Social skills scale | 2.7 | 0.28 | 0.12 |
| Likelihood of participating in hazardous child labor | 49% | 25% | 13.3 pp |

Note: MDEs for HCL are in percentage points (pp).

The average represents the unadjusted control group mean at follow-up.

The power calculations indicate that with the current sample size we can detect a change in self-efficacy of 0.15 points which represents a 4.2 percent effect relative to the control group mean. For the social skills scale we can detect a change of 0.12 points, which represents about a 4.44 percent effect relative to the mean. In general, we can detect relatively small effects for socio-emotional skills. For HCL we can detect a 13.3 percentage point change in the likelihood of being involved in HCL, which re-presents about a 27 percent effect relative to the mean.

We used a formula for an RCT design where we randomized students across classrooms. Following Schochet,⁷² the MDE for this type of design can be expressed as follows:

⁷² Schochet, P.Z. (2005). Statistical power for random assignment evaluations of education programs. Mathematica Policy Research (<http://www.mathematica-mpr.com/~media/publications/PDFs/statisticalpower.pdf>).

$$MDE = (z_{\alpha} + z_{\beta}) \sqrt{\left(\frac{2\rho_2(1 - R^2)}{s(0.5k)} + \frac{2(1 - \rho_2)(1 - R^2)}{s(0.5k)(1 - x)n} \right) \sigma^2}$$

where:

s is the number of schools included in the sample ($s = 7$).

k is the average number of classrooms in the school ($k \cong 3$).⁷³

n is the average number of students per classroom ($n \cong 37$).⁷⁴

$1 - x$ is the fraction of students that can be identified at follow-up (84 percent, see Exhibit 7).⁷⁵

$(z_{\alpha} + z_{\beta}) = 2.8$ for 80 percent power at the 0.05 level of significance for a two-sided test.⁷⁶

$\sigma^2 = P(1 - P)$ for dichotomous outcomes, where P is the prevalence of each outcome

ρ_2 is the intra-class correlation (ICC) at the classroom level.⁷⁷

R^2 is the proportion of the variance that is explained by the regression model.⁷⁸

⁷³ All schools except FM had 3 classrooms. FM had 4.

⁷⁴ We originally randomized 806 students across 22 classrooms, for an average of about 37 students per classroom.

⁷⁵ As described in Exhibit 7, the first follow-up sample includes 676 of the 806 initially randomized students.

⁷⁶ Bloom, H.S. (1995). Minimum detectable effects: A simple way to report the statistical power of experimental designs. *Evaluation Review*, 19(5), 547-556.

⁷⁷ We used an estimated intra-class correlation equal to 0.02 for HCL, and 0.04 for self-efficacy and 0.024 for social-skills.

⁷⁸ We used the R2 from the estimated regression models which is equal to 0.044 for HCL, 0.043 for self-efficacy and 0.035 for social skills.

Appendix E: Baseline Equivalence

In this appendix, we reproduced baseline equivalence results for the main outcome variables reported for the baseline analytic sample of younger students.

Exhibit 35. Socio-emotional Skills

| | Treatment | | Control | | Difference | |
|---------------------|----------------|-----|----------------|-----|------------|----------------|
| | Mean (CV) | N | Mean (CV) | N | Mean | CI (LB, UB) |
| Self-efficacy | 30.139 (0.175) | 252 | 30.626 (0.162) | 278 | -0.487 | (-1.176, .202) |
| Social skills total | 31.273 (0.157) | 275 | 31.271 (0.137) | 273 | 0.002 | (-.862, .865) |
| Communication | 12.134 (0.205) | 284 | 12.206 (0.206) | 291 | -0.072 | (-.522, .377) |
| Assertiveness | 8.426 (0.223) | 303 | 8.460 (0.210) | 302 | -0.035 | (-.445, .376) |
| Conflict resolution | 10.767 (0.244) | 301 | 10.703 (0.223) | 293 | 0.064 | (-.337, .466) |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 36. Hazardous Child Labor Prevalence and Triggers

| | Treatment | | Control | | Difference | |
|---|---------------|-----|---------------|-----|------------|---------------|
| | Mean (CV) | N | Mean (CV) | N | Mean | CI (LB, UB) |
| All hazardous child labor | 0.394 (1.241) | 284 | 0.429 (1.157) | 266 | -0.034 | (-.146, .077) |
| Work in hazardous industries | 0.049 (4.391) | 283 | 0.062 (3.910) | 276 | -0.012 | (-.055, .030) |
| Work in hazardous occupations | 0.185 (2.100) | 286 | 0.215 (1.913) | 288 | -0.030 | (-.112, .052) |
| Work at night [†] | | | | | | |
| Work totaling more than 30 hours a week | 0.036 (5.157) | 275 | 0.055 (4.147) | 272 | -0.019 | (-.059, .021) |
| Exposure to dust, fumes, noise, etc. | 0.241 (1.780) | 291 | 0.273 (1.635) | 260 | -0.033 | (-.111, .046) |
| Injuries | 0.234 (1.812) | 282 | 0.257 (1.704) | 253 | -0.023 | (-.106, .060) |
| Harassment | 0.126 (2.635) | 285 | 0.152 (2.369) | 257 | -0.025 | (-.090, .039) |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. [†] Results are suppressed because there are fewer than five respondents.

Exhibit 37. Working Status

| | Treatment | | Control | | Difference | |
|--|----------------|-----|----------------|-----|------------|-----------------|
| | Mean (CV) | N | Mean (CV) | N | Mean | CI (LB, UB) |
| Younger Students employment last week | | | | | | |
| Any work activity | 0.381 (1.277) | 315 | 0.455 (1.097) | 310 | -0.074 | (-.177, .029) |
| Number of hours | | | | | | |
| Hours worked in the past week | 16.712 (0.865) | 80 | 16.913 (0.860) | 103 | -0.200 | (-4.949, 4.549) |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 38. Educational Aspirations

| | Treatment | | Control | | Difference | |
|---|---------------|-----|---------------|-----|------------|---------------|
| | Mean (CV) | N | Mean (CV) | N | Mean | CI (LB, UB) |
| Highest level of education you desire or hope to achieve | | | | | | |
| Middle school [†] | | | | | | |
| High school | 0.186 (2.094) | 317 | 0.165 (2.257) | 316 | 0.022 | (-.067, .110) |
| Technical school | 0.104 (2.938) | 317 | 0.117 (2.750) | 316 | -0.013 | (-.068, .042) |
| University | 0.467 (1.070) | 317 | 0.487 (1.027) | 316 | -0.020 | (-.113, .072) |
| Postgraduate degree | 0.189 (2.073) | 317 | 0.193 (2.048) | 316 | -0.004 | (-.070, .063) |
| Other | 0.050 (4.344) | 317 | 0.022 (6.655) | 316 | 0.028 | (-.010, .066) |
| Highest level of education you think you can achieve | | | | | | |
| Lower expectations | 0.306 (1.509) | 291 | 0.321 (1.456) | 302 | -0.015 | (-.093, .062) |
| Equal expectations | 0.632 (0.764) | 291 | 0.613 (0.797) | 302 | 0.020 | (-.044, .083) |
| Higher expectations | 0.062 (3.901) | 291 | 0.066 (3.761) | 302 | -0.004 | (-.039, .030) |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. [†] Results are suppressed because there were fewer than five respondents.

Exhibit 39. Irregular Employment and Risky Behaviors – Younger Students

| | Treatment | | Control | | Difference | |
|---------------------------------|---------------|-----|---------------|-----|------------|---------------|
| | Mean (CV) | N | Mean (CV) | N | Mean | CI (LB, UB) |
| Irregular employment | | | | | | |
| Engaged in irregular employment | 0.240 (1.783) | 296 | 0.273 (1.633) | 300 | -0.033 | (-.107, .040) |
| Gangs | | | | | | |
| Currently part of a gang | 0.036 (5.161) | 303 | 0.046 (4.543) | 302 | -0.010 | (-.047, .027) |
| Previously part of a gang | 0.112 (2.817) | 303 | 0.132 (2.564) | 302 | -0.020 | (-.078, .038) |
| Never part of a gang | 0.851 (0.418) | 303 | 0.821 (0.467) | 302 | 0.030 | (-.039, .100) |
| Drugs | | | | | | |
| Has used drugs | 0.211 (1.936) | 303 | 0.203 (1.987) | 301 | 0.009 | (-.057, .074) |
| Has not used drugs | 0.653 (0.729) | 303 | 0.638 (0.755) | 301 | 0.016 | (-.049, .081) |
| Prefers not to answer | 0.135 (2.532) | 303 | 0.159 (2.300) | 301 | -0.024 | (-.058, .010) |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Appendix F: Follow-up Survey Instrument

ECUADOR FOLLOW-UP SURVEY

Dear CBA student,

IMPAQ is conducting an international study about programs related to working youth; about their experiences working, attitudes towards school, how to solve problems, and into any future plans to pursue more education and types of occupations. With these results it hopes to help improve the opportunities of young people like yourself

This survey is individual, voluntary and strictly confidential. Do not write your name on this questionnaire. Neither your participation in the survey nor your answers will affect your involvement in the CBA program in any way. If you are unable to answer a question, or you do not feel comfortable answering it, you may leave it blank.

Finally, it is important that you answer as thoughtfully and frankly as possible. There are no right or wrong answers. If you do not find an answer that fits exactly, you can select the one that comes closest. If you find a question confusing or you have any doubts about the survey and the way to answer the questions, please do not ask other students, raise your hand and one of the survey proctors will happily assist you.

Once you are done, please place your completed questionnaire in the provided envelope and seal it yourself. Return your envelope to one of the survey proctors after you are done.

Thank you!

School Name: _____

SECTION 1:

First, we would like to ask you some questions about your future career and education plans:

1. In the next few years, what do you plan to do? Check all that apply.

- Continue in education/studying
- Get a job, work for others
- Have my own business
- Join the military/armed forces/national police
- I don't know/I am not sure
- Other (specify) _____

2. What is the highest level of education you would like or hope to complete? Check one response.

- Middle school
- High school
- Non-university higher education (technical, artisan, technological)
- University (ie: engineer, lawyer, doctor, etc.)
- University for a post-graduate degree (master's or PhD)
- Other (specify) _____

3. What is the highest level of education you think you will actually complete? Check one response.

- Middle school
- High school
- Non-university higher education (technical, artisan, technological)
- University (ie: engineer, lawyer, doctor, etc.)
- University for a post-graduate degree (master's or PhD)
- Other (specify) _____

SECTION 2:

Now, we have a few questions about your ability to perform tasks and to solve/deal with problems and perception of the school environment:

TASKS and PROBLEMS

| 4. How much do you agree or disagree with the following statements? Check only one response for each statement with an X, like this ☒ | Strongly disagree | Disagree | Agree | Strongly agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. I can find the way to obtain what I want even against all odds. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. I can solve difficult problems if I try hard enough. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. It is easy for me to persevere until I accomplish my goals. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. I trust I could handle unexpected events successfully. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Thanks to my skill set, personal qualities and resourcefulness I can overcome unexpected situations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. When I find myself in trouble I can stay calm since I have the necessary abilities to handle difficult situations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Whatever comes my way, I am in general able to handle it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. I can solve the majority of problems if I make the necessary effort. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. If I find myself in a difficult situation, in general, I know what I should do. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. When facing a dilemma, in general, I can figure out multiple alternative solutions to it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SOCIAL RELATIONSHIPS

| 5. How true or false are the following statements for you? Check only one response for each statement with an X, like this ☒ | Totally false | False | True | Totally True |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| a. It's easy to start a conversation with someone I don't know. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. I often congratulate my classmates when they do something right. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. I feel embarrassed speaking when there are a lot of people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. When two friends have a fight, they ask me for help. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. It is easy for me to ask someone I know to a party, the movies, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. I feel embarrassed when talking to someone I am attracted to. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. I like telling people I am happy with something they have done. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. I find it easy to tell someone that I want to go out with him/her. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. I often help to solve problems between my friends. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. When I have a problem with another person, I imagine myself in their place and try to work out the problem. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| k. If I get the impression that someone is upset with me I ask them why. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. When there is a problem with someone, I often think and look for different solutions to solve the problem. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SCHOOL ENVIRONMENT

| 6. How much do you agree or disagree with the following statements? Check only one response for each statement with an X, like this ☒ | Strongly Disagree | Disagree | Agree | Strongly Agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. My school tries to get students to join in after school activities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Teachers and other adult staff who work in my school treat students with respect. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. In my school, we talk about ways to help us control our emotions. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Many students at my school go out of their way to treat other students badly. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Teachers and other adult staff in my school seem to work well with one another. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Students in this school respect each other's differences (for example, gender, race, culture, etc.). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. In my school, we have learned ways to resolve disagreements so that everyone can be satisfied with the outcome. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. My school tries to get all families to be part of school activities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. My teachers encourage me to try out new ideas (think independently). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. I have been insulted, teased, harassed or otherwise verbally abused more than once in this school. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. In my school, we talk about the way our actions will affect others. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Students have friends at school they can turn to if they have questions about homework. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. In my school, we discuss issues that help me think about how to be a good person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| n. In my school, there are clear rules against physically hurting other people (for example, hitting, pushing or tripping). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o. Students have friends at school they can trust and talk to if they have problems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| p. Teachers and other adult staff in this school have high expectations for students' success. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The next set of questions asks about your experience doing household chores at your own home.

7. Which of the following household chores do you usually do at home? **Check one response for each household chore.**

| | |
|--|--|
| a. Cleaning or helping with clothes (sweeping, dusting, making beds, cleaning bathroom, mending, washing, ironing) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. Cooking, helping to cook (breakfast, lunch or dinner) or buying groceries | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. Caring for younger, elderly or unwell household members | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. Repairing household equipment (e.g. plumbing or electricity work) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. Agricultural activities or taking care of animals for domestic use only | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. Produce any other good for your household use [Examples: clothing, furniture] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Fetch water or collect firewood for household use | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| h. Other (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

8. During the last week, how many hours did you spend each day in the mentioned household chores? **(Write a number of hours for each day. If you did not household chores write "0")**

| | HOURS |
|-----------|-------|
| Monday: | |
| Tuesday: | |
| Wednesday | |
| Thursday: | |
| Friday: | |
| Saturday: | |
| Sunday: | |

9. In the last week...

- a. Did you do your household chores any of those 7 days during the morning, at any time between 6:00 and 12 noon?
 Yes No
- b. Did you do your household chores any of those 7 days during the afternoon, at any time between 12:00 and 19:00?
 Yes No
- c. Did you do your household chores any of those 7 days during the night, at any time between 19:00 and las 24:00?
 Yes No
- d. Did you do your household chores any of those 7 days after midnight, at any time between 24:00 and 6:00 in the morning?
 Yes No

Now, we have a few questions about your experiences working (not including household chores):

10. Have you ever worked for pay (for a wage, salary, commission, food, or shelter)? Check one response

- Yes No

11. Not counting household chores, did you perform any of the following working activities inside or outside your house last week? Check one response for each activity.

| | |
|--|--|
| a. Run or help in any kind of business, big or small, for yourself or with one or more partners? [Examples: Selling things, taxi or other transport business, tending your own shop, shoe shining, etc.] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. Do any work for a wage, salary, commission or any payment in food or shelter (excluding domestic work) [Examples: A regular job, casual work for pay, work in exchange for food or housing, apprenticeship/internship] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. Do any work as a domestic worker for a wage, salary or any payment in food or shelter | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. Help, without being paid, in any kind of business run by your household. Do not count household chores [Examples: Help to sell things, doing the accounts, cleaning up for the business, etc.] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. Catch any fish, prawns, shells, wild animals or other food for sale | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. Do any work on your own (or your household's) plot, farm, food garden, or help in growing farm produce for sale or in looking after animals intended for sale? [Examples: Ploughing, harvesting, looking after livestock] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Do any construction or major repair work on your own or your family business or farm plot [Examples: Janitor, painter, plumber, etc.] | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| h. Any other work activity <u>not for pay</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| i. Any other work activity <u>for pay</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| j. [Respond here only if you answered "NO" to all activities above]: Even though you did not work in any of these activities last week, do you still have a current paid job or business? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

If you marked NO on all items in question 11, SKIP TO QUESTION 21;

12. During the last week, how many hours did you work EACH DAY (in all of the mentioned activities)? Enter "0" (zero) if you did not work any of these days last week. Remember to exclude household chores.

| | HOURS |
|------------|-------|
| Monday: | |
| Tuesday: | |
| Wednesday: | |
| Thursday: | |
| Friday: | |
| Saturday: | |
| Sunday: | |

13. In the last week...

- a. Did you work any of those 7 days during the morning, at any time between 6:00 and 12 noon?
 Yes No

- b. Did you work any of those 7 days during the afternoon, at any time between 12:00 and 19:00?
 Yes No

- c. Did you work any of those 7 days during the night, at any time between 19:00 and las 24:00?
 Yes No

- d. Did you work any of those 7 days after midnight, at any time between 24:00 and 6:00 in the morning?
 Yes No

14. Approximately, how much money did you earn in the last month in total across all your jobs?

\$_____

15. What kind of work did you do in all the jobs/activities that you performed last week? **Check ALL that apply. For example, if you worked both as street vendor and taxi driver check both. Remember not to include household chores.**

- Miner
 - Bread and pastry-making
 - Car repair shop handyman
 - Carpenter
 - Cleaning/ janitor
 - Construction worker
 - Domestic worker (living in the house)
 - Domestic worker (living outside the house)
 - Loading and unloading in markets/Packer
 - Street worker, including shoe shinning, market vendor, windshield cleaner, street entertainer, bike messenger, trader, car washer, look after cars; bus payment collector or other street work
 - Cook or waiter/waitress (in restaurants)
 - Waiter/waitress in bar/cantinas or bartender-serving alcoholic beverages
 - Taxi/motorcar driver
 - Custodian or Security guard
 - Social club worker (in places for gambling, selling of alcoholic beverages, gentlemen’s clubs)
 - Recycler of waste, scrap metal and nonmetallic waste
 - Garbage workers/collector
 - Brick maker
 - Other (please describe in your own words your main activities or what do they make you do)
-

16. What economic sector/industry does your job (or jobs) belongs to? **Check all that apply. Please note that this question is about the main industry/ general economic activity of your employer, company, your own or household business. For example, if you work for a restaurant choose “Hotels and Restaurants.” If you also sell things, also choose “informal or ambulatory sales.”**

- Agriculture (production of banana, flowers, palm oil, timber)
- Mining and Quarrying
- Manufacturing

- Construction or Brick production
 - Hotels and restaurants
 - Wholesale –or retail trade
 - Informal or ambulatory sales
 - Repair of motor vehicles, motor cycles and other machinery
 - Transportation/storage
 - Other service activities
 - Other (please briefly describe) _____
-

17. What is the primary activity or job that you are engaged in? Primary activity/job is the one where you spent most of the time during the week. Remember not to include household chores

18. In your primary activity or job, under which labor conditions are you currently working? Check only one response

- On the job training, internship, apprenticeship
- Probation period
- Seasonal work
- Occasional/daily work
- Work by the hour
- Piecework (specific service or task)
- Work as a replacement/substitute
- Permanent/stable job
- Self-employed
- Other (Specify): _____

19. In your primary activity or job, are you currently employed with....? Check only one response.

- A written contract
- An oral agreement
- No contract or agreement
- Self-employed

20. In your primary activity or job, what is the duration of your contract or agreement? Check one response

- Less than 12 months
- 12 months to less than 36 months
- 36 months or more.
- No contract or agreement
- Self-employed

SECTION 3:

The next set of questions are about your personal experiences at work. Please remember that all answers are voluntary and completely confidential.

21. In the jobs you did in the past 6 months (for any length of time), were you ever exposed to any of the following elements or conditions ? Check one response in each row.

If you did not work during the past 6 months, check this box and continue to question 25-->

| | |
|---|--|
| a. Dust, fumes | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. Fire, gas, flames | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. Exceedingly loud noise or vibrations | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. Extreme cold or heat | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. Drugs | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. Work with dangerous tools or machinery (e.g. knives, saws, axes, etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Carry loads that are very heavy | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| h. Work underground | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| i. Work at platforms elevated at dangerous heights | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| j. Work under water in lakes, ponds or rivers | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| k. Work in a place that is dark or confined or with insufficient ventilation | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| l. Work around chemical products (such as pesticides, paints, liquor, glue, etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| m. Work around explosives | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| n. Work in an environment that made you feel uncomfortable or exploited | <input type="checkbox"/> Yes <input type="checkbox"/> No |

22. In the jobs you did in the past 6 months (for any length of time), did you experience any of the following problems? Check one response for each row

If you did not work during the past 6 months, check this box and continue to question 25 -->

| | |
|---|--|
| a. You were yelled at or told intimidating things | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. You were insulted or called offensive names | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. You were hit, beaten or hurt physically | <input type="checkbox"/> Yes <input type="checkbox"/> No |

| | |
|--|--|
| d. You experienced sexual harassment (verbal harassment, unwanted touching, made you do things you did not want to do, etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. You were forced to work more hours than you wanted to | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. You were forced to sell or use drugs | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Other (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

23. In the jobs you did in the past 6 months (for any length of time), you have any of the following health problems as a result of any of your jobs? Check one response for each problem.

If you did not work during the past 6 months, check this box and continue to question 25-->

| | |
|----------------------------------|--|
| a. Superficial lesions or wounds | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. Fractures | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. Dislocations | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. Burns, scalding or freezing | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. Problems breathing | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. Problems with your eyes | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. Problems with your skin | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| h. Digestive problems/ diarrhea | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| i. Fever | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| j. Exhaustion | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| k. Anxiety or Depression | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| l. Problems sleeping | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| m. Sexually transmitted diseases | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| n. Drug overdose | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| o. Other problems (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

24. If you wanted to quit from any of your current jobs, is there one you would not be allowed to quit? Check one response

Yes No

SECTION 4:

The next set of questions are about your personal experiences. Please remember that all answers are voluntary and completely confidential.

25. Are there any gangs in your neighborhood? Check one response.

- Yes No

26. Have you ever been part of a gang? Check one response.

- Yes, I am currently part of a gang
 Yes, I used to be part of a gang
 No, I have never been in a gang

27. Have you ever used drugs? Check one response.

- Yes
 No
 Don't want to respond

28. Which of the following best represents how you think of yourself? Check one response

- Straight (attracted to people of the opposite sex)
 Homosexual, Gay/Lesbian (attracted to people of the same sex)
 Bisexual (attracted to people of both sexes)
 Something else/ I am not sure

29. Write down the name of 2 contraceptive methods you know (to avoid pregnancy or sexually transmitted diseases).

First Method: _____

Second Method: _____

- Don't know any

30. When having sexual relations, do you or the other person use condoms? Check one response.

- Yes
 No
 Sometimes
 I have never had sex

31. MEN ONLY: How old were you when you got a woman pregnant for the first time?

_____ years old

- I have never gotten anyone pregnant.

32. WOMEN ONLY: How old were you when you first got pregnant?

_____ years old

- I have never been pregnant.

33. Have you been tested for STDs in the last 6 months? **Check one response.**

- Yes No

SECTION 5:

In this last section we would like to ask you few questions about your participation in the CBA program during the 2016-2017 school year.

34. Did you drop out of the CBA program at any time during the year? **Check one response.**

- Yes >
 No > **END SURVEY**

35. When did you drop-out of the CBA program? **Check one response.**

- Between October and December 2016
 Between January and March 2017
 After March 2017

36. After dropping out, did you come back to the program at some point during the school year? **Check one response.**

- Yes
 No, I permanently dropped out of the program and never returned

37. What is the reason you temporarily or permanently dropped out of the CBA program? **Check one response for each sentence.**

| | |
|--|--|
| a. I felt I was too old for school | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. I did not consider school interesting | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. I did not do well in school | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. My family did not consider school valuable | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. I could not afford it/Lack of money | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. I had to work or support my family financially | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| g. I had to help with domestic chores or take care of a family member | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| h. School was too far away or I did not have the means to get there | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| i. I did not felt safe at school (either due to other students, teachers or other adult staff in the school) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| j. Due to a romantic relationship or pregnancy | <input type="checkbox"/> Yes <input type="checkbox"/> No |

| | |
|--|--|
| k. Due to illness or disability | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| l. Due to a drug or alcohol addiction | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| m. I temporarily migrated | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| n. Other reason not in this list (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Observations/comments: _____

Please review that you have not forgotten to answer any questions before handing in the survey. Thank you for participating in the survey.

Appendix G: Regression Models

REGRESSION MODELS SPECIFICATIONS FOR SURVEY-BASED OUTCOMES

Model 1: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{iB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + u_i$

Model 2: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{ijsB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + \alpha_5 X_{ijsB} + u_i$

Model 3: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{ijsB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + \alpha_5 X_{ijsB} + \alpha_6 Y_{ijsB} + u_i$

Model 4: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{ijsB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + \alpha_5 X_{ijsB}^{imputed} + \alpha_6 Y_{ijsB}^{imputed} + u_i$

REGRESSION MODELS SPECIFICATIONS FOR ACADEMIC OUTCOMES

Model 5: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{iB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + u_i$

Model 6: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{ijsB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + \alpha_5 X_{ijsB} + u_i$

Model 7: $Y_{ijsF} = \alpha_0 + \alpha_1 T_{ijsB} + \alpha_2 Age_{ijsB} + \alpha_3 Sex_{ijsB} + \alpha_4 \theta_s + \alpha_5 X_{ijsB}^{imputed} + u_i$

- Where Y_{ijsF} is the follow-up (F) outcome of interest for student i in (baseline) classroom j and school s .
- T_{ijsB} is the treatment indicator, which equals 1 if the individual i at baseline (B) was assigned to a classroom j (in school s) that had the YPD teacher, and 0 if the student was assigned to a classroom with a regular teacher. Thus, the treatment indicator reflects baseline classroom assignment.
- θ_s is a series of dummy variables for each school (7 school fixed effects) aimed at controlling for time-invariant school characteristics that could also affect outcomes.
- $X_{ijsB}, X_{ijsB}^{imputed}$ is a set of baseline demographic characteristics (e.g., race, parental education, etc.), without and with missing values imputed, respectively.⁷⁹

⁷⁹ This includes baseline values of race; number of own children; household size; whether the student is married or living with a partner; father's and mother's education and language; whether student was the same age, older, or younger than classmates when first entered elementary school; number of years since dropped out of school.

- $Y_{ijsB}, Y_{ijsB}^{imputed}$ is the baseline value of the corresponding outcome variable, without and with missing values imputed.

DETAILED REGRESSION RESULTS FROM DIFFERENT MODEL SPECIFICATIONS-SURVEY-BASED OUTCOMES

Exhibit 40 through Exhibit 58 present the results of each regression model specification for each of the survey-based outcomes. Impacts are presented in percentage-point change for most outcomes (except ‘number of hours worked’ and ‘socio-emotional skills’). The numbers in brackets are effect sizes relative to the mean in the control group. In Model 4, missing values of baseline demographics and baseline outcome are imputed. S.E. are clustered at classroom level.

Exhibit 40. Impact on Self-Efficacy

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
| Treatment Indicator | -0.059 [-1.90%] | -0.053 [-1.70%] | -0.042 [-1.35%] | -0.053 [-1.69%] |
| S.E. | 0.047 | 0.052 | 0.054 | 0.049 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 675 | 576 | 571 | 675 |
| Mean of the Control Group | 3.109 | 3.104 | 3.104 | 3.109 |
| R ² | 0.021 | 0.073 | 0.146 | 0.125 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 41. Impact on Social Skills

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|-----------------|-----------------|---------------|
| Treatment Indicator | 0.008 [0.29%] | -0.013 [-0.47%] | -0.004 [-0.15%] | 0.005 [0.18%] |
| S.E. | 0.041 | 0.046 | 0.042 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 676 | 576 | 569 | 676 |
| Mean of the Control Group | 2.681 | 2.680 | 2.680 | 2.681 |
| R ² | 0.039 | 0.083 | 0.249 | 0.227 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 42. Impact on School Climate

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|---------------|---------|---------------|
| Treatment Indicator | 0.005 [0.16%] | 0.010 [0.34%] | N/A | 0.014 [0.47%] |
| S.E. | 0.033 | 0.034 | N/A | 0.034 |
| Age and Sex at Baseline | Yes | Yes | N/A | Yes |
| School Fixed Effects | Yes | Yes | N/A | Yes |
| Other Baseline Demographics | No | Yes | N/A | Yes |
| Baseline Outcome | No | No | N/A | No |
| N | 676 | 576 | N/A | 676 |
| Mean of the Control Group | 2.944 | 2.943 | N/A | 2.944 |
| R ² | 0.073 | 0.097 | N/A | 0.110 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively. N/A = Not Applicable. School-climate was not measures at baseline

Exhibit 43. Impact on HCL

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|---------------|---------------|--------------------|
| Treatment Indicator | 0.015 [2.98%] | 0.026 [5.61%] | 0.008 [1.77%] | 0.026 [5.25%] |
| S.E. | 0.041 | 0.045 | 0.045 | 0.040 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes ^(a) |
| Baseline Outcome | No | No | Yes | Yes ^(a) |
| N | 623 | 527 | 461 | 623 |
| Mean of the Control Group | 0.487 | 0.469 | 0.469 | 0.487 |
| R ² | 0.044 | 0.107 | 0.213 | 0.194 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 44. Impact on HCL – Hazardous Industry

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|----------------|------------------|-----------------|----------------|
| Treatment Indicator | 0.035 [59.77%] | 0.050* [101.65%] | 0.044* [90.46%] | 0.028 [47.40%] |
| S.E. | 0.021 | 0.022 | 0.022 | 0.020 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 648 | 552 | 491 | 648 |
| Mean of the Control Group | 0.059 | 0.049 | 0.049 | 0.059 |
| R ² | 0.033 | 0.066 | 0.206 | 0.197 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 45. Impact on HCL – Hazardous Occupation

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|----------------|----------------|---------------|
| Treatment Indicator | -0.003 [-1.13%] | 0.040 [14.67%] | 0.038 [13.87%] | 0.001 [0.46%] |
| S.E. | 0.036 | 0.039 | 0.037 | 0.034 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 652 | 553 | 501 | 652 |
| Mean of the Control Group | 0.292 | 0.271 | 0.271 | 0.292 |
| R ² | 0.071 | 0.122 | 0.236 | 0.244 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 46. Impact on HCL – Long Hours

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|----------------|----------------|-----------------|----------------|
| Treatment Indicator | 0.034 [60.28%] | 0.043 [88.07%] | 0.044* [90.42%] | 0.042 [74.19%] |
| S.E. | 0.022 | 0.023 | 0.022 | 0.022 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 600 | 509 | 442 | 600 |
| Mean of the Control Group | 0.056 | 0.049 | 0.049 | 0.056 |
| R ² | 0.019 | 0.067 | 0.075 | 0.079 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 47. Impact on HCL – Night Work

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|------------------|------------------|------------------|
| Treatment Indicator | -0.002 [-8.72%] | -0.004 [-16.82%] | -0.004 [-15.72%] | -0.004 [-14.04%] |
| S.E. | 0.013 | 0.013 | 0.014 | 0.013 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 612 | 528 | 511 | 612 |
| Mean of the Control Group | 0.026 | 0.024 | 0.024 | 0.026 |
| R ² | 0.009 | 0.051 | 0.052 | 0.041 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 48. Impact on HCL – Other Hazardous Conditions

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Treatment Indicator | -0.011 [-3.48%] | -0.016 [-4.99%] | -0.021 [-6.52%] | -0.002 [-0.51%] |
| S.E. | 0.039 | 0.043 | 0.044 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics (b) | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 597 | 508 | 441 | 597 |
| Mean of the Control Group | 0.330 | 0.322 | 0.322 | 0.330 |
| R ² | 0.051 | 0.118 | 0.173 | 0.177 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 49. Impact on HCL – Harassment

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|---------------|----------------|----------------|
| Treatment Indicator | 0.008 [4.11%] | 0.007 [3.96%] | 0.023 [13.10%] | 0.024 [13.20%] |
| S.E. | 0.033 | 0.036 | 0.036 | 0.033 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 582 | 495 | 428 | 582 |
| Mean of the Control Group | 0.183 | 0.179 | 0.179 | 0.183 |
| R ² | 0.026 | 0.081 | 0.161 | 0.137 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 50. Impact on HCL – Injury

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
| Treatment Indicator | -0.032 [-9.24%] | -0.011 [-3.27%] | -0.011 [-3.33%] | -0.028 [-8.23%] |
| S.E. | 0.040 | 0.044 | 0.044 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 581 | 497 | 426 | 581 |
| Mean of the Control Group | 0.343 | 0.329 | 0.329 | 0.343 |
| R ² | 0.045 | 0.094 | 0.213 | 0.179 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 51. Impact on Working

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|-----------------|---------------|---------------|
| Treatment Indicator | -0.017 [-3.26%] | -0.008 [-1.54%] | 0.017 [3.36%] | 0.007 [1.46%] |
| S.E. | 0.040 | 0.044 | 0.044 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 671 | 571 | 563 | 671 |
| Mean of the Control Group | 0.512 | 0.492 | 0.492 | 0.512 |
| R ² | 0.028 | 0.070 | 0.144 | 0.157 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 52. Impact on Number of Hours Worked

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|----------------|----------------|----------------|----------------|
| Treatment Indicator | 1.271 [17.22%] | 1.479 [21.54%] | 1.356 [19.75%] | 1.839 [24.92%] |
| S.E. | 1.060 | 1.081 | 1.096 | 1.057 |
| Age and Sex at baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 602 | 511 | 444 | 602 |
| Mean of the Control Group | 7.381 | 6.868 | 6.868 | 7.381 |
| R ² | 0.040 | 0.085 | 0.122 | 0.135 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 53. Impact on Irregular Employment

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|-----------------|---------------|---------------|
| Treatment Indicator | -0.018 [-3.63%] | -0.003 [-0.71%] | 0.022 [4.65%] | 0.003 [0.70%] |
| S.E. | 0.040 | 0.044 | 0.044 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 657 | 558 | 523 | 657 |
| Mean of the Control Group | 0.492 | 0.471 | 0.471 | 0.492 |
| R ² | 0.027 | 0.075 | 0.147 | 0.159 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 54. Impact on Number of Hours Spent On Households Chores

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|---------------|-----------------|---------------|
| Treatment Indicator | 0.264 [2.49%] | 0.056 [0.54%] | -0.092 [-0.88%] | 0.046 [0.43%] |
| S.E. | 0.673 | 0.777 | 0.776 | 0.708 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 658 | 561 | 554 | 658 |
| Mean of the Control Group | 10.627 | 10.531 | 10.531 | 10.627 |
| R ² | 0.040 | 0.058 | 0.122 | 0.128 |

* p<0.05, ** p<0.01, *** p<0.001

Exhibit 55. Impact on Whether Household Chores Are Done At Night

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
| Treatment Indicator | -0.004 [-1.46%] | -0.018 [-6.62%] | -0.016 [-6.09%] | -0.008 [-2.97%] |
| S.E. | 0.038 | 0.043 | 0.043 | 0.039 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 586 | 495 | 488 | 586 |
| Mean of the Control Group | 0.264 | 0.265 | 0.265 | 0.264 |
| R ² | 0.022 | 0.053 | 0.075 | 0.093 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 56. Impact on Educational Expectations

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|---------------|---------------|---------------|---------------|
| Treatment Indicator | 0.001 [0.12%] | 0.014 [2.04%] | 0.016 [2.28%] | 0.001 [0.17%] |
| S.E. | 0.036 | 0.041 | 0.040 | 0.036 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 669 | 570 | 542 | 669 |
| Mean of the Control Group | 0.715 | 0.711 | 0.711 | 0.715 |
| R ² | 0.011 | 0.026 | 0.102 | 0.101 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 57. Impact on Participation in Gangs

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|------------------|-----------------|---------------|-----------------|
| Treatment Indicator | -0.014 [-18.87%] | -0.001 [-1.79%] | 0.005 [7.29%] | -0.004 [-5.27%] |
| S.E. | 0.021 | 0.023 | 0.022 | 0.020 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 663 | 567 | 544 | 663 |
| Mean of the Control Group | 0.072 | 0.070 | 0.070 | 0.072 |
| R ² | 0.034 | 0.064 | 0.124 | 0.137 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 58. Impact on Whether Used Drugs

| Regression Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------------|-----------------|---------------|---------------|------------------|
| Treatment Indicator | -0.027 [-9.72%] | 0.010 [3.86%] | 0.013 [4.97%] | -0.032 [-11.57%] |
| S.E. | 0.038 | 0.043 | 0.037 | 0.035 |
| Age and Sex at Baseline | Yes | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes | Yes |
| Baseline Outcome | No | No | Yes | Yes |
| N | 577 | 497 | 479 | 577 |
| Mean of the Control Group | 0.274 | 0.260 | 0.260 | 0.274 |
| R ² | 0.026 | 0.053 | 0.321 | 0.308 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

DETAILED REGRESSION RESULTS FROM DIFFERENT MODEL SPECIFICATIONS-SCHOOL-BASED OUTCOMES

Exhibit 59 through Exhibit 62 present the results of each regression model specification for each of the academic outcomes. The numbers in brackets are effect sizes relative to the mean in the control group. In Model 7, missing values of baseline demographics are imputed. S.E. are clustered at classroom level.

Exhibit 59. Impact on Graduation Status

| Regression Variables | Model 5 | Model 6 | Model 7 |
|-----------------------------|-----------------|-----------------|-----------------|
| Treatment Indicator | -0.010 [-1.09%] | -0.019 [-2.05%] | -0.009 [-0.97%] |
| S.E. | 0.023 | 0.025 | 0.024 |
| Age and Sex at Baseline | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes |
| N | 726 | 617 | 726 |
| Mean of the Control Group | 0.904 | 0.915 | 0.904 |
| R ² | 0.021 | 0.044 | 0.066 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 60. Impact on Final Grades

| Regression Variables | Model 5 | Model 6 | Model 7 |
|-----------------------------|---------------|---------------|---------------|
| Treatment Indicator | 0.023 [0.28%] | 0.031 [0.39%] | 0.036 [0.46%] |
| S.E. | 0.041 | 0.048 | 0.043 |
| Age and Sex at Baseline | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes |
| N | 659 | 566 | 659 |
| Mean of the Control Group | 7.946 | 7.963 | 7.946 |
| R ² | 0.187 | 0.201 | 0.218 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 61. Impact on Behavior Mark

| Regression Variables | Model 5 | Model 6 | Model 7 |
|-----------------------------|-----------------|-----------------|---------------|
| Treatment Indicator | -0.001 [-0.27%] | -0.000 [-0.02%] | 0.003 [1.23%] |
| S.E. | 0.047 | 0.047 | 0.047 |
| Age and Sex at Baseline | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes |
| N | 555 | 474 | 555 |
| Mean of the Control Group | 0.241 | 0.247 | 0.241 |
| R ² | 0.412 | 0.430 | 0.439 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Exhibit 62. Impact on School Attendance Days

| Regression Variables | Model 5 | Model 6 | Model 7 |
|-----------------------------|---------------|---------------|---------------|
| Treatment Indicator | 1.475 [0.74%] | 0.186 [0.09%] | 1.255 [0.63%] |
| S.E. | 1.485 | 1.573 | 1.512 |
| Age and Sex at Baseline | Yes | Yes | Yes |
| School Fixed Effects | Yes | Yes | Yes |
| Other Baseline Demographics | No | Yes | Yes |
| N | 617 | 521 | 617 |
| Mean of the Control Group | 198.151 | 197.793 | 198.151 |
| R ² | 0.814 | 0.841 | 0.847 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Appendix H: Socio-emotional Skills Reliability Scales

In the student survey, we included three attitudinal questions with a total of 38 Likert-scale items, which were designed to construct three non-cognitive skills measures – self-efficacy, social skills, and perceptions of school climate.⁸⁰ The social skills measure was also designed to break down into three subscales – communication, assertiveness, and conflict resolution skills. In this appendix, we present our assessment of the internal consistency of our socio-emotional-skill scales.

To assess whether our measures are internally consistent, we computed the scale reliability coefficients (Cronbach’s α statistic) for each measure across baseline and follow-up to determine if the individual items tap the same underlying concept and if all the items belong to the scale. The self-efficacy and the school climate constructs resulted in large coefficient alpha (greater than 0.70), indicating strong item homogeneity and suggesting that these two domains of interest are being adequately captured. For the social skills scale, we performed further analysis by eliminating items that were causing the scale to have lower internal consistency reliability. The revised social skills scale is reduced to include seven items reaching an acceptable level of internal consistency (Exhibit 63).

Exhibit 63. Included Socio-emotional Skill Constructs and Reliability Coefficients

| Construct | Parameters | Baseline | Follow-up |
|----------------|-------------------------------|----------|-----------|
| Self-efficacy | Average inter-item covariance | 0.22 | 0.19 |
| | Number of items in the scale | 10 | 10 |
| | Scale-reliability coefficient | 0.80 | 0.82 |
| Social skills | Average inter-item covariance | 0.18 | 0.19 |
| | Number of items in the scale | 7 | 7 |
| | Scale-reliability coefficient | 0.67 | 0.72 |
| School climate | Average inter-item covariance | | 0.12 |
| | Number of items in the scale | n/a | 16 |
| | Scale-reliability coefficient | | 0.76 |

Note: Authors’ calculations.

The three subscales (communication, assertiveness, and conflict resolution) resulted in unacceptably low coefficient alpha in each administration, even after item elimination, suggesting that these subscales are not reliable in measuring the desired concepts and should be dropped from further analysis (Exhibit 64).

⁸⁰ The school climate question was asked only during follow-up at the end of the school year. Because all students were previously dropouts without prior experience in the schools, this question would have been difficult for students to answer at baseline.

Exhibit 64. Excluded Socio-emotional Skill Constructs and Reliability Coefficients

| Construct | Parameters | Baseline | Follow-up |
|---------------------|-------------------------------|----------|-----------|
| Communication | Average inter-item covariance | 0.09 | 0.09 |
| | Number of items in the scale | 5 | 5 |
| | Scale-reliability coefficient | 0.34 | 0.39 |
| Assertiveness | Average inter-item covariance | 0.16 | 0.17 |
| | Number of items in the scale | 3 | 3 |
| | Scale-reliability coefficient | 0.44 | 0.49 |
| Conflict resolution | Average inter-item covariance | 0.24 | 0.25 |
| | Number of items in the scale | 4 | 4 |
| | Scale-reliability coefficient | 0.61 | 0.66 |

Note: Authors' calculations.

For further evidence of our construct validity, we examined the pairwise correlations of the socio-emotional skill measures to assess whether they converged. As expected, they are positively correlated but with correlation coefficients low enough to indicate that the three measures are of distinct constructs (Exhibit 65).

Exhibit 65. Pairwise Construct Correlations and Number of Observations at Baseline

| | Self-efficacy | Social skills | School climate |
|----------------|------------------|------------------|----------------|
| Self-efficacy | 1 694 | | |
| Social skills | 0.2243*** 694 | 1 695 | |
| School climate | 0.2152*** 694 | 0.3141*** 695 | 1 695 |

Note: ***, **, and * indicate statistically significant results at 0.1%, 1%, and 5% significance level, respectively.

Appendix I: Mapping of Qualitative Research Questions

| Research Questions | Key Themes | Secondary Data | Interviews | | | Focus Groups | |
|---|---|----------------|-------------|--------------|---------------------|---------------------|----------|
| | | | Secretariat | YPD Managers | YPD Captains | Teachers | Students |
| Program Implementation | | | | | | | |
| 1. According to program stakeholders and teachers , were program activities implemented as planned? What type of challenges were faced during program implementation? What type of program modifications were made, if any? | Understand CBA program and the new ECA class, and capture any implementation issues with the CBA program that may have influenced the YPD intervention. | | Q4, 5 | Q8 | | (C)*: Q4, 5 | Q4 |
| | Understand implementers' expectations of intervention and their roles in implementing intervention. | | Q6, 7, 8, 9 | Q9, 11 | | (T)*: Q5 | |
| | Understand teachers' selection process and engagement with intervention. | | Q10, 11 | Q12 | Q7 | (C): Q6 (T): Q4 | |
| | Understand YPD intervention activities. | YPD tracker | | | Q3, 5, 6, 8, 11, 12 | (T): Q7, 8, 11, 12 | Q5, 7, 8 |
| | Capture any issues with implementation of the YPD intervention. | YPD tracker | | Q4, 5 | Q9, 10 | (T): Q9, 10 | |
| | Understand captains' selection process and assignments to schools. | | | | Q6, 7 | | |
| 2. How did the YPD program influence treatment teachers' pedagogical practices, their perceptions of classroom climate, student performance, attendance, and socio-emotional skills? | Understand how YPD captains influenced teachers. | | | | Q15 | (T): Q6, 15, 16, 17 | Q6, 7 |
| 3. What additional supports or activities should be included in this intervention to augment or increase expected outcomes? | Capture any recommendations or lessons learned from YPD intervention. | | Q12, 13 | Q14, 15 | Q18, 19 | (T): Q18, 19 | |

| Research Questions | Key Themes | Secondary Data | Interviews | | | Focus Groups | |
|---|---|----------------|-------------|--------------|--------------|----------------------------|----------|
| | | | Secretariat | YPD Managers | YPD Captains | Teachers | Students |
| 4. To what extent have treatment teachers shared YPD pedagogical practices and resources with control teachers ? To what extent have treatment teachers used YPD pedagogical practices and resources when teaching other subjects (i.e., other than the Cultural and Artistic Education subject)? | Understand all potential sources of contamination between treatment and control teachers. | | Q9 | Q10 | Q4, 14 | (T): Q13, 14 (C): Q7, 8 | Q9 |
| 5. Were repeating treatment teachers and/or first-time treatment teachers affected equally or differently by the intervention? | Compare perceptions between first-time YPD teachers and teachers repeating YPD. | | | | | Q4-19 | |
| Mechanisms of Change | | | | | | | |
| 6. To what extent did students modify their educational and career aspirations as a result of the program? How did they make their educational plans and choices? What factors contributed to their decision-making? | Understand potential factors influencing students, including relationship with captains. | Survey | | | Q13 | | Q10, 11 |
| 7. For students currently continuing their education, did they make their schooling choices as a result of the program? How did they make their schooling choices? What factors contributed to their decision-making? | Understand potential factors influencing student decision-making process. | Survey | | Q13 | | | Q10 |
| 8. For students currently working, did they make their work choices as a result of the program? How did they make their occupation choices? What factors contributed to their decision-making? | Understand potential factors influencing student decision-making process. | Survey | | Q13 | | | Q10, 11 |
| 9. To what extent did students feel they gained additional skills, tools, and strategies to help their decision-making process as a result of the program? To what extent did students view their self-efficacy, conflict resolution, communication, and assertiveness skills as a result of the program? Did they improve? | Understand expectations of changes in student's skills and perceptions of changes. | Survey | | Q13 | Q16, 17 | (T): Q16, 17 | Q12, 13 |
| 10. Did the benefits and impacts of the intervention vary by gender? What was the effect of intervention dosage level on program effects? | Compare responses between female and male students. Compare responses between students who received full dosage and the rest. | Survey | | | | | Q4-14 |