

Opportunities for Equitable Access to Quality Basic Education (OPEQ)

Baseline Report: Results from the Socio-Emotional Wellbeing & Perceptions of School Context Data in Katanga Province, DRC

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Table of Contents

Executive Summary	5
Introduction	9
Sample Description	10
Measure Development	10
Baseline Descriptive Findings	12
Children’s Perception of Schools, Classrooms, and Teachers	12
Supportive Schools & Teachers	12
Schools & Classrooms as Predictable & Cooperative Contexts	16
Children’s Socio-emotional Wellbeing	18
Victimization	18
Mental Health	21
Associations between SEL Constructs	25
Preliminary Regression Analyses	26
Introduction	26
Preliminary Results	
Child demographic characteristics	28
General household characteristics	28
Other living conditions	28
Prior school adaptation	29
Conclusion	33

List of Tables

Table 1. SIRC and CSCLE across DRC, Nigeria and South Africa	13
Table 2. Mental Health mean scores in Katanga (OPEQ) and Kinshasa samples	22

Table 3. Complete list of child characteristics organized by block	27
Table 4. Summary of results for child socio-emotional outcomes as predicted by child characteristics	31

List of Figures

Figure 1. Distribution of variability in children's perceptions of support from schools and teachers	14
Figure 2. Boxplots of children's perceptions of supportive schools and teachers by subdivision	15
Figure 3. Variability in children's perceptions of predictable and cooperative schools and Classrooms	16
Figure 4. Boxplots of children's perceptions of supportive schools and teachers by Subdivision	17
Figure 5. Variability in children's victimization	19
Figure 6. Boxplots of children's report of victimization by subdivision	20
Figure 7. Variability in children's mental health	23
Figure 8. Boxplots of Mental health problems by subdivision	24

Executive Summary

1. Introduction

The International Rescue Committee (IRC), in partnership with Research Triangle Institute (RTI), the Flemish Association for Development Cooperation and Technical Assistance (VVOB) and the Institute of Human Development and Social Change (IHDSC) at New York University (NYU), has undertaken an initiative entitled Opportunities for Equitable Access to Quality Basic Education (OPEQ) with the purpose of enhancing learning opportunities, academic attainment and socio-emotional wellbeing for more than 480,000 girls and boys in three eastern provinces of the Democratic Republic of Congo.

The IRC and NYU are conducting a cluster-randomized trial of OPEQ, aiming to evaluate the efficacy of the intervention and inform efforts for the improvement of learning conditions in the DRC and other post-conflict settings. The present report uses baseline data from the province of Katanga to describe children's socio-emotional learning (SEL) outcomes, and present preliminary regression analyses examining how children's characteristics relate to their socio-emotional wellbeing. A description of the overall design and data collection procedures can be found in the child literacy and numeracy baseline report (Torrente et al., 2011¹).

2. Main Descriptive Results

Supportive Schools & Teachers

Children perceived their schools and teachers as being highly supportive. However, there are some aspects of school supportiveness that require more improvement than others (i.e., scores were relatively lower for child-centered and intellectually stimulating environments than for safe, inclusive and respectful climates), and there is substantial variability between children and among subdivisions.

Schools & Classrooms as Predictable & Cooperative Contexts

Overall, children reported that their schools and classrooms were somewhat predictable and cooperative, but there appears to be more room for improvement in this dimension than in how supported children felt in their schools.

¹ Torrente, C., Aber, J.L., Shivshanker, A., Annan, J., & Bundervoet, T. (2011). Opportunities for Equitable Access to Quality Basic Education (OPEQ). Results from the Early Grade Reading Assessment, the Early Grade Math Assessment, and children's demographic data in Katanga Province, Democratic Republic of Congo. Unpublished Manuscript.

Victimization

On average, children reported being victimized "never" (a score of 1) to "one or two times" (a score of 2) in the two weeks preceding the survey. Interestingly, only 15.5% of children reported never being victimized, suggesting that the vast majority of children experienced some level of victimization at school.

Mental Health

Average levels of mental health problems were moderate, but as with the constructs previously described, this does not imply that there is no room for improvement. Only about half of the variance in children's mental health can be attributed to individual differences between children, about a third of the variance can be explained by differences between subdivisions, and the remaining variance can be explained by difference between schools. These patterns suggest there is a lot of potential for school-based initiatives aiming to improve children's outcomes.

3. Main Results from Regression Analyses

Overall, children's personal characteristics were not associated with their socio-emotional outcomes. The only exception was **conduct problems**, which was more prevalent for 2nd graders (relative to 3rd and 4th graders) and less prevalent for 3rd graders (relative to 4th graders).

Regarding children's household characteristics, results suggest different patterns of associations for children's perceptions of their school environment vs. children's self-reports of socio-emotional wellbeing. For example, children living in households with high **children burden** (children per adult) perceived their **schools and teachers as less supportive**, but reported less **hyperactivity & emotional symptoms**.

Children's diet and job at home were important correlates of their socio-emotional outcomes. Specifically, children whose diet included **meat** - an index of wealth - and who had a **job at home** tended to report less **mental health** (conduct problems, hyperactivity & emotional symptoms) and **victimization** problems. Children who reported having a job at home also rated **schools and teachers as more supportive** and schools as more **predictable and cooperative**.

The associations found between **attending kindergarten**, getting **homework** and **help with homework** and children's socio-emotional outcomes were rather puzzling. For instance, children who **attended kindergarten** reported more **conduct problems, hyperactivity & emotional symptoms** and **victimization**. The meaning of getting homework and getting help

with homework in the DRC needs clarification. It is possible that children who are struggling in school are the ones who are assigned homework and need someone to help at home.

4. Conclusions and recommendations

Overall, our results indicate substantial variability between children, between schools and subdivisions in children's socio-emotional outcomes. OPEQ's goal of providing "equitable access to quality basic education" is a promising effort to close the gap between children at the high and low ends of the spectrum.

Descriptive findings from Katanga suggest that on average children perceive their **schools and teachers as supportive**, but that compared to other African countries improvement is needed in creating intellectually stimulating and student-centered learning environments. Providing supportive environments for all children should be a goal of all schools. As suggested by our findings, children's perceptions of supportive schools and teachers are associated with lower levels of victimization and mental health problems.

Also, children perceived their schools and classrooms as moderately **predictable and cooperative**, and there is considerable room for improvement in this dimension. Features of schools and subdivisions appear to play a very important role on how children come to see their schools and classrooms. Establishing routines and being explicit about the classroom schedule, as well as promoting peer cooperation by means of small-group work and the encouragement of sharing, may all contribute to children's perceptions of their schools and classrooms as predictable and cooperative.

In terms of children's individual wellbeing, **victimization** appears to be a more common experience for Congolese children than for children in other countries. Whereas the average rates of victimization are not alarming, the vast majority of children experience some level of peer victimization at school, and as corroborated by our results, victimization takes a toll on children's mental health. Victimization is mostly associated with children's individual characteristics, meaning that some children may be more susceptible to be targets of aggression. Schools should aim to promote environments that prevent victimization for all children by developing tolerance for diversity, empathy and other moral emotions, as well as the mastery of non-aggressive ways of interaction.

Children's self-reports of **mental health problems** suggest moderate levels of conduct problems, hyperactivity & emotional symptoms. However, levels of mental health issues appear to be higher than in Kinshasa, where children may be less exposed to violent conflict or other negative experiences. There was a substantial amount of variability in children's mental health problems that lies between subdivisions, and a large proportion that resides at the school

level. Programs like OPEQ may help schools in providing increasingly supportive contexts for struggling children.

Regression analyses indicated that with the exception of grade differences in conduct problems, children's personal characteristics (i.e., gender, grade, language) were not related to their socio-emotional outcomes. In terms of household characteristics, children's living conditions, and kindergarten experiences, results were mixed. Some household characteristics that were negatively associated with children's perceptions of schools were positively related to children's mental health. Also, findings related to children's kindergarten experiences were counterintuitive. These results should be interpreted with caution as the direction of causality cannot be determined and these results focused on the unique contribution of each variable to children's socio-emotional outcomes. A clearer picture may emerge when their interactions are explored, as well as by examining their cumulative effects on children's outcomes. Future analyses are expected to shed light on some of these unexpected findings, and to explore the contribution of teacher and school characteristics to children's outcomes.

INTRODUCTION

The International Rescue Committee (IRC), in partnership with Research Triangle Institute (RTI), the Flemish Association for Development Cooperation and Technical Assistance (VVOB) and the Institute of Human Development and Social Change (IHDSC) at New York University (NYU), has undertaken an initiative entitled Opportunities for Equitable Access to Quality Basic Education (OPEQ). The main objective of OPEQ is to improve primary education in North Kivu, South Kivu and Katanga provinces of the Democratic Republic of Congo (DRC), for more than 480,000 girls and boys.

The OPEQ project consists of two key interventions: 1) an Integrated Curriculum (IC) that incorporates the IRC's socio-emotional learning model (Healing Classrooms, a protocol of techniques to create safe, inclusive learning environments for all learners) into high-quality reading and math curricula; and 2) a collaborative professional development system of continuous in-service Teacher Training and Coaching (TTC). In addition, the OPEQ team has worked with the DRC Ministry of Primary, Secondary and Professional Education (MEPSP) to revive TTC practices in their education system; and to strengthen community participation through school management committees and parent-teacher associations. OPEQs coordinated efforts aim to improve children's access to quality elementary education in approximately 350 communities, enhance teachers' motivation and performance and socio-emotional wellbeing, literacy, and math outcomes for hundreds of thousands of Congolese children.

As part of the IRC's commitment to gathering evidence about the impact of its interventions, the IRC and NYU are conducting a cluster-randomized trial (CRT) on the IC and TTC components of OPEQ. The impact evaluation will gather evidence about the impact of OPEQ on teachers' motivation and performance and children' outcomes; examine whether the impact of OPEQ varies as a function of characteristics of children (e.g., gender, grade), schools (e.g., school size) and communities (e.g., access to resources); make improvements over the life of the project; and inform similar initiatives and policy efforts in DRC and internationally.

Baseline data for the impact evaluation were collected in Katanga province from March to May 2011 from three different sources: school principals, teachers and children. Children provided information about their background and household characteristics through a demographic questionnaire, were assessed on their reading and math skills using the EGRA (Early Grade Reading Assessment) and EGMA (Early Grade Math Assessment), and on their socio-emotional wellbeing and perceptions of schools, classrooms and teachers using two socio-emotional learning (SEL) surveys. Results for child academic performance and teacher characteristics are

summarized in the literacy and numeracy and teacher baseline reports, respectively². The current report presents descriptive findings and preliminary regression analyses on children's socio-emotional wellbeing and perceptions of school contexts.

Sample Description

As explained in the child literacy and numeracy baseline report, in order to reduce participant burden all children who participated in baseline data collection were administered the demographic survey and were randomly assigned to different pairs of additional assessments (e.g., EGRA and EGMA, EGMA and socio-emotional well being, etc.). As a result of this strategy, 4,777 children -out of the 6,702 children who were assessed at baseline-completed one or two SEL questionnaires. **This report is based on the random sub-sample of 993 2nd to 4th grade children** (42.3% girls; 35% 2nd grade, 33% 3rd grade, 32% 4th) **who were administered the demographic survey and the two SEL questionnaires.** The sample includes 84 schools across six educational subdivisions in Katanga province: Kalemie, Kasenga, Kambove, Kongolo, Mutshatsha and Lubudi. A more detailed description of the sampling and data collection procedures can be found in the literacy and numeracy baseline report¹.

Measure Development

The two SEL questionnaires consisted of a combination of questions from pre-validated measures and questions developed by the NYU team to assess specific aspects of IRC's Healing Classrooms program (see Appendix A).

Together, the surveys had a total of 95 questions (excluding administrative questions) and each took an average of 11 minutes to be administered. All questions were measured with ordinal Likert-scales from 1 to 4 or 0 to 3, with lower values indicating less endorsement or lower frequency depending on the construct.

Exploratory factor analyses were conducted using Mplus version 5.2 (Muthen & Muthen, 1998-2007) with the aim of reducing the number of questions and identifying an internally reliably and robust set of constructs to be carried over to future waves of data collection. Mplus enabled us to address two methodological challenges present in our data. Specifically, we were able to adjust for the nesting of children in subdivisions and to accurately model categorical, as

² Child literacy and numeracy report: Torrente, C., Aber, J.L., Shivshanker, A., Annan, J., & Bundervoet, T. (2011). Opportunities for Equitable Access to Quality Basic Education (OPEQ). Results from the Early Grade Reading Assessment, the Early Grade Math Assessment, and children's demographic data in Katanga Province, Democratic Republic of Congo. Unpublished Manuscript. *Teacher report*: Torrente, C., Aber, J.L., Witteveen, D., Gupta, T., Johnston, B., Shivshanker, A., Annan, J., & Bundervoet, T. (2012). Baseline Report: Teacher Survey Results. Unpublished Manuscript.

opposed to continuous, indicators. Supplementary internal reliability analyses were conducted in SPSS version 20.

Results indicated that four robust and meaningful constructs were supported by the data, namely: 1) **children's perceptions of supportive schools and teachers** (17 items, $\alpha = .83$), 2) **children's perceptions of schools and classrooms as predictable and cooperative contexts** (10 items, $\alpha = .85$), and children's self-reports of 3) **mental health** (12 items, $\alpha = .83$) and 4) **victimization** (5 items, $\alpha = .77$). Descriptive statistics for each of the 4 constructs are presented in the following section. Statistics are broken down by sub-division, grade and gender for cases where significant differences were found. For regression analyses, the mental health scale was split into two subscales, *conduct problems* and *hyperactivity & emotional symptoms*³.

WHY DO THESE OUTCOMES MATTER?

Supportive and caring school contexts and teachers have been positively associated with children's academic learning and socio-emotional wellbeing (e.g., Battistich, Schaps, & Wilson, 2004; O'Donnell, Roberts, & Schwab-Stone, 2011).

Mental health and victimization capture aspects of children's psychological wellbeing that may be influenced by school environments and that may also affect children's ability to learn (e.g., Ursache, Blair & Raver, 2011; Schwartz, Gorman, Nakamoto, & Toblin, 2005).

We expect that high quality and extended exposure to OPEQ will have a positive impact on children's perceptions of their school environments and will improve children's mental health and wellbeing. These positive effects, in turn, are expected to enable children to take greater advantage of the learning opportunities afforded by the school.

³ This approach was followed for the sake of consistency with regression analyses in which children's academic outcomes were predicted by their socio-emotional outcomes. Given that children were randomly assigned to different pairs of tests (e.g., EGMA and EGRA, SEL A and SEL B, EGRA and SEL A) we could not conduct analyses with constructs cutting across SEL A, SEL B and EGRA or EGMA, as no child took both SEL tests and one of the academic tests.

BASELINE DESCRIPTIVE FINDINGS

Children's Perception of Schools, Classrooms, and Teachers

Supportive Schools & Teachers

Children's perceptions of how supportive their schools and teachers are were measured with a combination of questions from the Relationship with Teacher Questionnaire (Blankemeyer, Flannery, & Vazsonyi, 2002⁴), and questions from two scales developed by the American Institutes for Research (AIR) to evaluate UNICEF's Child Friendly Schools (CFS) initiative. The AIR scales used were the Safe, Inclusive and Respectful Climates scale (SIRC) and the Challenging Student-Centered Environments scale (CSCLE).

Children were asked to rate in a scale ranging from 1 to 4 (1: completely false, 2: a little false, 3: a little true, 4: completely true) the extent to which, for example, they felt respected by teachers, teachers are fair and willing to provide help, and their school is a welcoming place for children like them. A list of all questions is included in the Appendix.

Overall, children perceived their schools and teachers as being highly supportive ($M = 3.28$, $SD = .46$). However, as shown below, there are some aspects of school supportiveness that require more improvement than others, and there is substantial variability between children and among subdivisions.

For the purpose of comparison with the CFS evaluation (UNICEF, 2009⁵), mean scores were computed separately for the SIRC and CSCLE scales (see Table 1). The CFS evaluation found lower average scores for SIRC in South African schools that had recently started implementing the CFS principles, as well as Nigerian schools that have been implementing CFS for more than 2 years. Interestingly, results for the CSCLE scale were higher in these two countries than they were in the DRC.

⁴ Blankemeyer, M., Flannery, D. J., & Vazsonyi, A. T. (2002). The role of aggression and social competence on children's perceptions of the child-teacher relationship. *Psychology in the Schools, 39*(3), 293-304.

⁵ UNICEF (2009). Child friendly schools programming: Global Evaluation Report. United Nations Children's Fund, New York, NY.

Table 1. SIRC and CSCLE across DRC, Nigeria and South Africa

Scale/Country	Means (and Standard Deviations)		
	DRC (OPEQ)	Nigeria	South Africa
Safe, Inclusive and Respectful climates (SIRC)	3.37 (<i>SD</i> = .53)	3.08 (n.a) ⁶	2.94 (n.a)
Challenging Student-Centered Environments (CSCLE)	3.10 (<i>SD</i> = .55)	3.32 (n.a)	3.35 (n.a)

This comparison suggests that while Congolese teachers and schools were regarded as more safe, inclusive and respectful than the African teachers and schools in the UNICEF CFS evaluation, DRC schools and teachers are lagging behind in terms of creating student-centered and intellectually challenging learning environments.

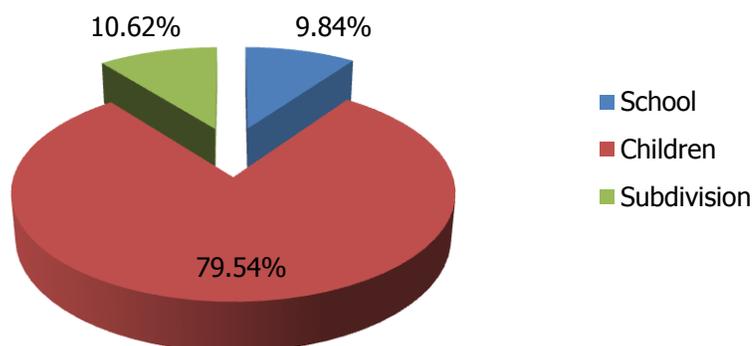
Moving beyond average scores, and as illustrated in the pie chart and boxplots below (see Figures 1 and 2), there is significant variability between children, between schools and among subdivisions regarding children's perceptions of how supportive their schools and teachers are.

The pie chart shows that most of the variability resides between children (79.54%), suggesting that children in the same school perceived significantly different levels of support from teachers and other school members. These differences may reflect differential treatment and inequitable learning opportunities for different groups of children. Preliminary descriptive analyses did not suggest that gender or grade explained differences in children's perceptions of support. Future analysis will seek to illuminate what factors underlie these differences in children's appraisals of their school and teachers.

Importantly, while most of the variation lies between children, differences between schools and subdivisions account for about 20% of the variance in children's perceptions. The amount of variation attributable to differences between subdivisions is striking, and it suggests that there are meaningful differences across subdivisions that impact how children view their schools. The nature of these differences remains a question to be explored. These may relate to differential amounts of education resources across subdivisions, distinct educational policies, or different levels of exposure to violent conflict, among others.

⁶ n.a: data not available.

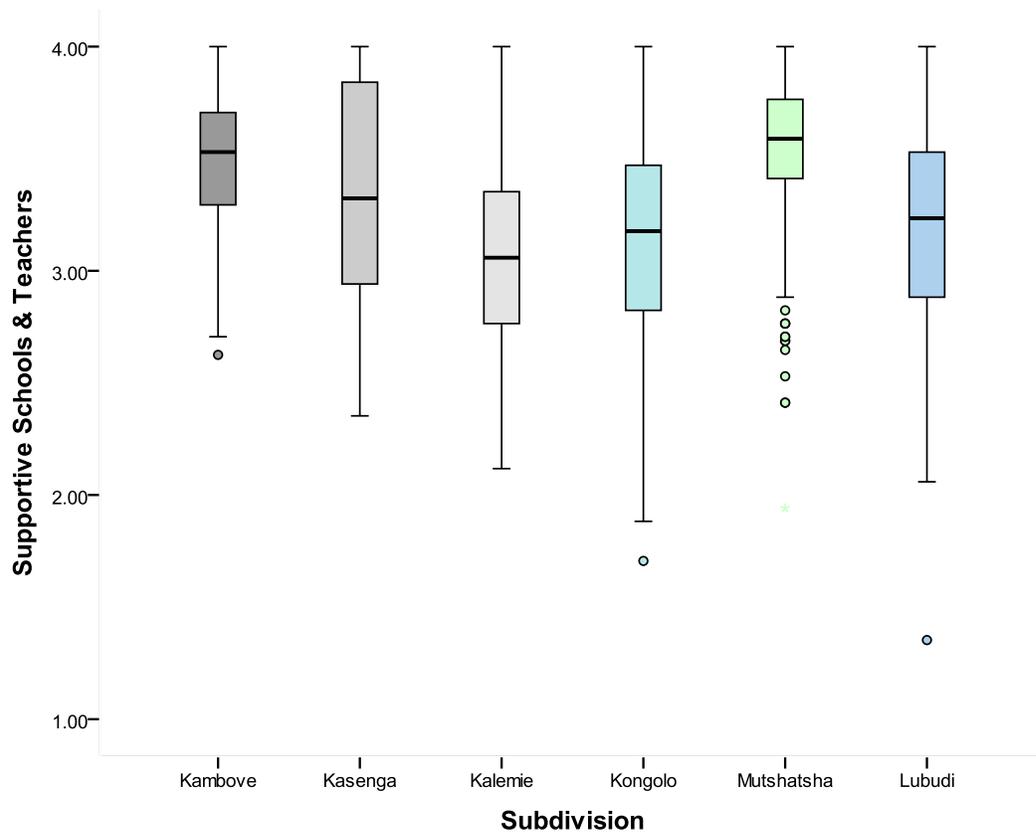
Figure 1. Distribution of variability in children's perceptions of support from schools and teachers



The length of the whiskers in the boxplots in Figure 2 shows that in Kalemie, Kongolo and Lubudi over 30% of children obtained scores below 3, indicating that they reported that their schools and teachers' being supportive was "a little true" to "a little false". Mutshatsha and Kambove, in contrast, stood out for having the highest overall scores coupled with the smallest amount of variation between children (as indicated by the relatively short whiskers). This means that in these two subdivisions the majority of children perceived their schools and teachers as being highly supportive.

Altogether, findings suggest that in spite of the overall positive outlook, there is still considerable room for improvement in this aspect of school climate.

Figure 2. Boxplots of children's perceptions of supportive schools and teachers by subdivision



How to interpret boxplots:

- The box shows the range of scores for 50% of children.
- The horizontal line inside the box is the median score (50% of children got scores above that score and 50% got scores below that score).
- The lines (or whiskers) coming out of the box on either end show the full range of scores (the maximum and the minimum).
- The line coming from the top of the box represents the top 25%; the line coming from the bottom of the box represents the bottom 25%.
- The "longer" the box and whiskers appear, the more variability is present.
- The dots and stars outside of the lines (or whiskers) show outlier scores.

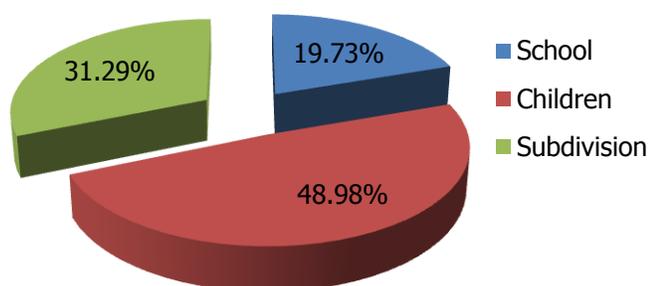
Schools & Classrooms as Predictable & Cooperative Contexts

The questions to measure predictability and cooperativeness of school contexts were developed by the NYU team and asked children to rate in a scale from 1 to 4 (1: completely false, 2: a little false, 3: a little true, 4: completely true) whether they knew their classroom routines (e.g., knowing what time their lessons begin) and the degree to which their peers shared and worked together to learn.

The average score in this measure was 2.63 ($SD = .73$), which is lower than the score obtained in the supportive schools and teachers dimension. Overall, children reported that their schools and classrooms were somewhat predictable and cooperative, but there appears to be more room for improvement in this dimension than in how supported children felt in their schools.

The distribution of variability between children, schools and subdivisions looks very different from that of the previous measure. As shown by the pie chart, a large amount of variability can be explained by characteristics of schools and subdivisions, and only about half of the variation in scores can be explained by differences between children. This suggests that the characteristics of schools and subdivisions are as influential as children's individual characteristics in shaping children's perceptions of their schools and classrooms. There are teaching practices or school conditions that permeate the school as a whole, as well as regional policies or socio-economic conditions that lead children in the same subdivision to perceive similar levels of predictability and cooperativeness in their school environments. This means that introducing school- or subdivision-wide initiatives to enhance predictability and cooperativeness in the school and classroom may have powerful transformative effects on children's feelings about school.

Figure 3. Variability in children's perceptions of predictable and cooperative schools and classrooms

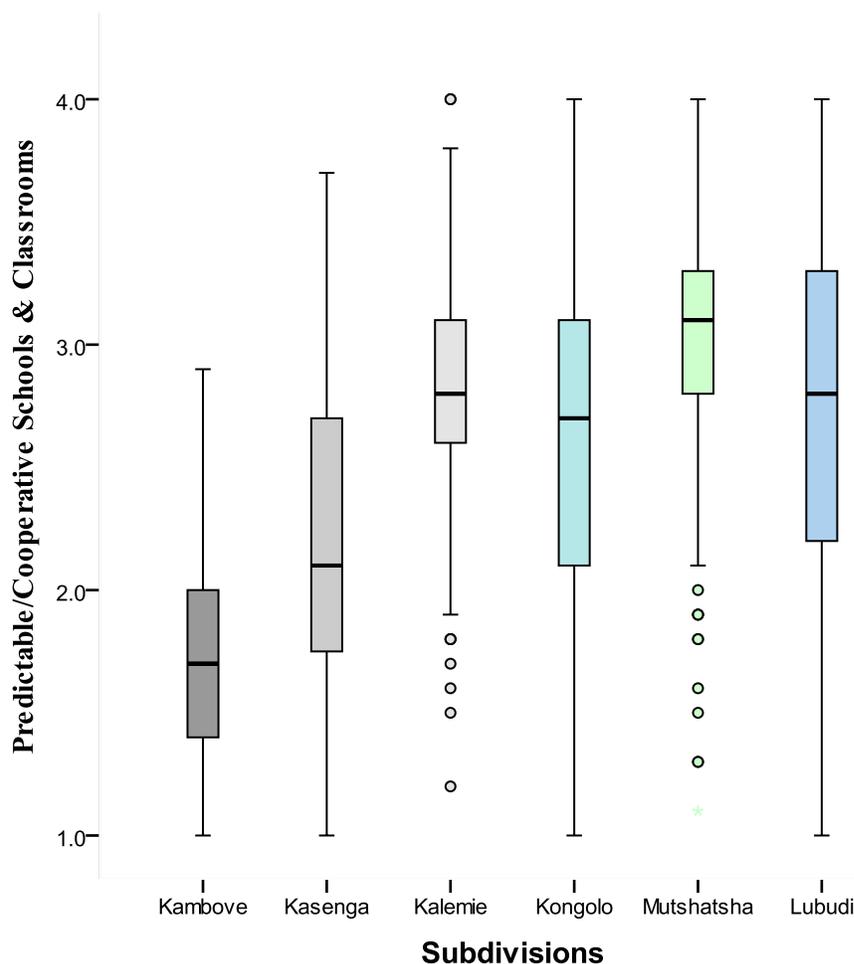


As indicated by the boxplots in Figure 4, there are substantial differences in the median scores and in the dispersion of scores across subdivisions. Kambove stood out for having the least

predictable and cooperative classrooms. This contrasts with the fact that it had one of the highest levels of supportive schools and teachers. Kasenga, Kongolo and Lubudi had the greatest heterogeneity in scores; and Mutshatsha and Kalemie had the highest median scores. Children in Mutshatsha also perceived their schools and teachers as highly supportive.

As with supportive schools and teachers, inspection of descriptive statistics did not reveal meaningful differences by gender and grade.

Figure 4. Boxplots of children's perceptions of supportive schools and teachers by subdivision



How to interpret boxplots:

- The box shows the range of scores for 50% of children.
- The horizontal line inside the box is the median score (50% of children got scores above that score and 50% got scores below that score).
- The lines (or whiskers) coming out of the box on either end show the full range of scores (the maximum and the minimum).
- The line coming from the top of the box represents the top 25%; the line coming from the bottom of the box represents the bottom 25%.
- The “longer” the box and whiskers appear, the more variability is present.
- The dots and stars outside of the lines (or whiskers) show outlier scores.

Children's Socio-Emotional Wellbeing

Victimization

Children were asked to report the frequency with which they have been subject to physical (e.g., being pushed, hit, called bad names) or relational (e.g., being excluded, being the object of rumors) aggression by their peers in the past two weeks, using a set of previously validated questions (Orpinas & Kelder, 1995⁷). Children provided their answers in a scale from 1 to 4 (1: Never, 2: One or two times, 3: Some times, 4: Many times).

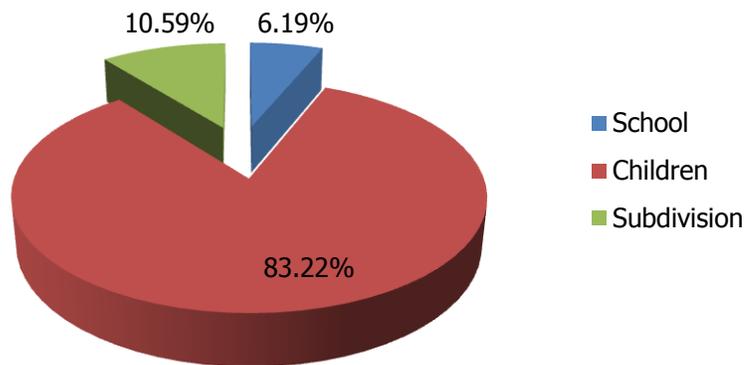
On average, children reported being victimized "never" to "one or two times" in the two weeks preceding the survey ($M = 1.88$, $SD = .68$). Interestingly, only 15.5% of children got a score of 1 (i.e., "never"), suggesting that the vast majority of children experienced some level of victimization at school.

Although not entirely comparable due to differences in the context and age of children, a study conducted using the same measure with a sample of 3rd grade children from low-income inner-city schools in the U.S. found a nearly identical mean score at baseline ($M = 1.89$, $SD = .84$) but a higher percentage (21.4%) of children reporting "never" being victimized in the week before the survey (*4Rs Impact Evaluation*, unpublished results). Another study using a nationally representative sample of Colombian children in 5th and 9th grades also found a similar average score ($M = 1.53$, $SD = .54$) but a higher percentage (25.3%) of children reporting "never" being victimized in the week preceding the study (*Pruebas Saber, 2005*; unpublished results). Keeping in mind the differences between the contexts where the studies took place, these comparisons suggest that victimization may be a more widespread experience in Congolese schools (as a smaller percentage of children reports never being victimized), but average levels of victimization reported by Congolese children are very similar to those reported in other studies.

As illustrated by the pie chart below, most of the variability in children's levels of victimization can be explained by individual differences between children. Nonetheless, there is an important portion of the variance that can be attributed to differences between subdivisions and a smaller, yet still important portion that can be explained by differences between schools. Information about schools collected as part of OPEQ will serve to explore some of the features of schools that may explain variation in children's levels of victimization. Differences between subdivisions are intriguing and may reflect differences in exposure to community violence or other risk factors that similarly affect children living in the same regions.

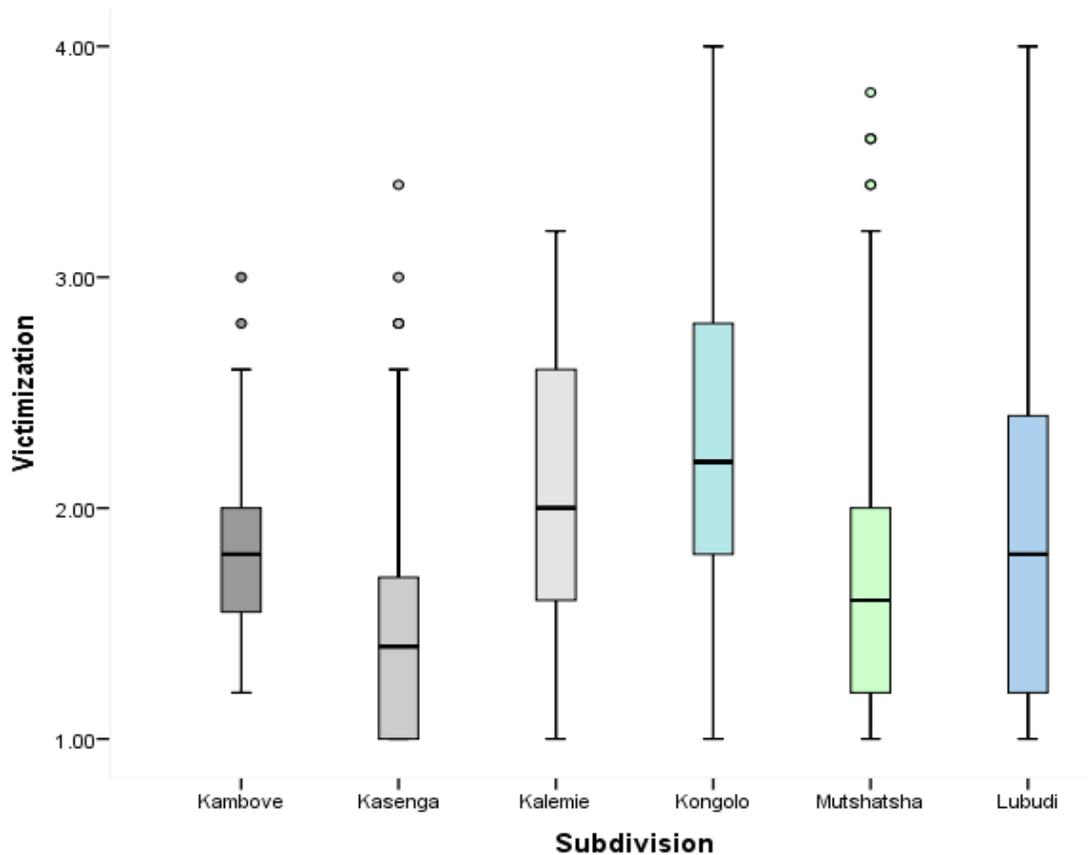
⁷ Orpinas, P., & Kelder, S. (1995). *Students for Peace Project: Second student evaluation*. Houston, TX: University of Texas Health Science Center at Houston, School of Public Health.

Figure 5. Variability in children's victimization



Even though differences between subdivisions are significant, the boxplots by subdivision (see Figure 6) show relatively small variation in terms of *median scores*, with all falling in the range between 1.40 and 2.20. However, there are important differences in the dispersion of scores around the median, and this may account for the significant result reported above. Kongolo and Lubudi, for example, have children dispersed across the whole spectrum and are the only two subdivisions with children obtaining scores of 4, or children who reported being very frequent victims of physical and relational aggression. Kongolo and Lubudi, along with Kalemie, had 8 to 10% of children who reported being victimized "sometimes" to "many times". These children are especially vulnerable to develop mental health and school adaptation problems.

Figure 6. Box plots of children's report of victimization by subdivision



How to interpret boxplots:

- The box shows the range of scores for 50% of children.
- The horizontal line inside the box is the median score (50% of children got scores above that score and 50% got scores below that score).
- The lines (or whiskers) coming out of the box on either end show the full range of scores (the maximum and the minimum).
- The line coming from the top of the box represents the top 25%; the line coming from the bottom of the box represents the bottom 25%.
- The "longer" the box and whiskers appear, the more variability is present.
- The "dots and stars" outside of the lines (or whiskers) show outlier scores.

Mental Health

Finally, children were asked a series of questions aimed to assess their level of **conduct problems** (e.g., getting in fights, lying or cheating, yelling, etc), **hyperactivity** (e.g., having difficulty sitting quietly and concentrating in school) and **emotional symptoms** (e.g., feeling nervous, worrying a lot, feeling sad or wanting to cry a lot of the time). Items were drawn from a previously validated and widely used measure (Strengths and Difficulties Questionnaire, SDQ). Children rated their answers in a scale from 1 to 4, where 1 was "completely false", 2 was "a little false", 3 was "a little true", and 4 was "completely true". Factor analyses revealed one robust factor consisting of 12 questions drawn from the three subscales. Those items were averaged to compute a total summary score.

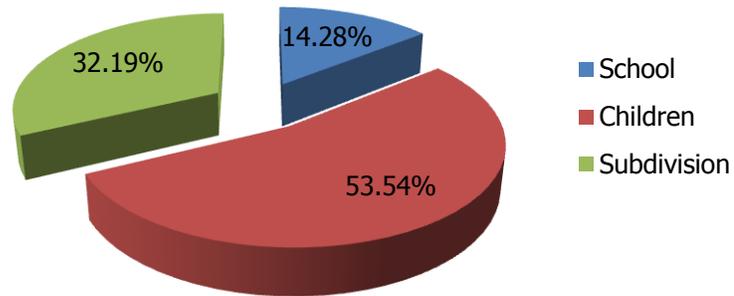
Analyses with the total score suggested that average levels of mental health problems were moderate ($M = 2$, $SD = .65$) but as with the constructs previously described, this does not imply that there is no room for improvement. A study conducted in Kinshasa, the capital of DRC, with a sample of 1,187 7-9 year olds from randomly selected schools, asked teachers to rate their students using the SDQ scales (Kashala, Elgen, Sommerfelt & Tylleskar, 2005⁴). For the purposes of comparison, individual items utilized in OPEQ were transformed to a scale from 0 to 3 (0: completely false, 1: a little false or a little true, and 3: completely true) and broken down by gender. With a couple of exceptions (i.e., distractibility and fights for boys), children in the OPEQ study reported more mental health problems than those reported by teachers in Kinshasa (see Table 2). While the importance of differences in reporter and in children's age cannot be understated, these data suggest that children in Katanga face more challenges to their mental health than children in Kinshasa.

Table 2. Mental Health mean scores in Katanga (OPEQ) and Kinshasa samples

	Boys		Girls	
	OPEQ	Kinshasa	OPEQ	Kinshasa
Worries	.86	.50	.86	.50
Fights	.51	.60	.50	.40
Lies	.57	.50	.54	.30
Steals	.45	.10	.41	.10
Fidgety	.75	.50	.74	.50
Distractible	.68	.90	.68	.80
Fears	.84	.60	.91	.50
Unhappy	.71	.40	.76	.40
Temper	.61	.70	.57	.50
Fights	.60	.60	.53	.40
Obedient	1.58	.40	1.59	.30

In contrast with victimization, there was a substantial amount of variability in children's mental health problems that lies between subdivisions, and a large proportion that resides at the school level. Only about half of the variance in children's mental health can be attributed to individual differences between children, and about a third of the variance can be explained by differences between subdivisions. This attests to the power of macro-economic, political and societal processes in shaping individual's wellbeing. However, the fact that most of the variance can be explained by differences between individuals and schools also suggests that that a lot can be done at these two levels to foster children's wellbeing.

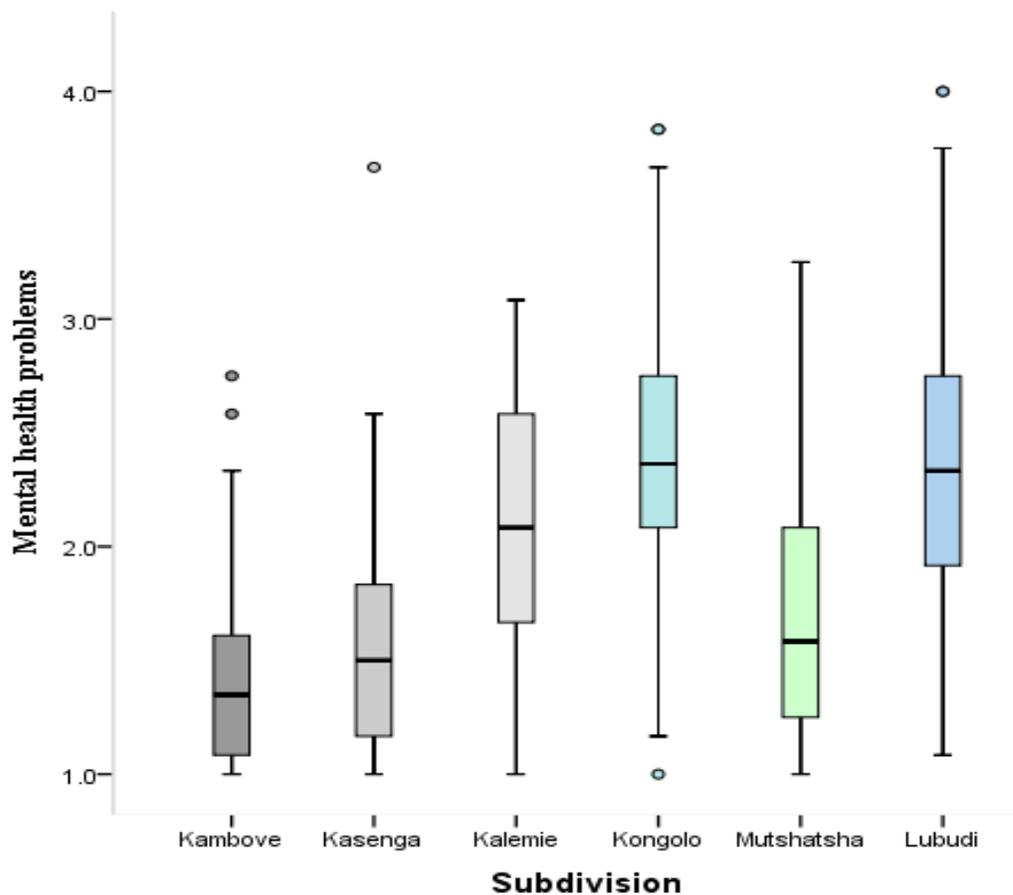
Figure 7. Variability in children's mental health



Inspection of the boxplots by subdivision shows important differences between subdivisions' median scores, which could be foreseen from the pie chart. Kongolo and Lubudi had the highest levels of mental health problems as well as the greatest dispersion in scores.

As with all the other SEL constructs assessed at baseline, children's mental health problems were not significantly different for boys and girls, nor for children in 2nd to 4th grades.

Figure 8. Boxplots of Mental health problems by subdivision



How to interpret boxplots:

- The box shows the range of scores for 50% of children.
- The horizontal line inside the box is the median score (50% of children got scores above that score and 50% got scores below that score).
- The lines (or whiskers) coming out of the box on either end show the full range of scores (the maximum and the minimum).
- The line coming from the top of the box represents the top 25%; the line coming from the bottom of the box represents the bottom 25%.
- The “longer” the box and whiskers appear, the more variability is present.
- The dots and stars outside of the lines (or whiskers) show outlier scores.

Associations between SEL Constructs

Bivariate multi-level regressions adjusting for the nesting of children in schools and subdivisions were run to examine associations between the four constructs assessed with the SEL surveys. The following results were found:

- Children's who perceived their **schools and teachers as supportive** reported lower levels of **victimization** ($b = -.17, p < .05$) as well as less **mental health problems** ($b = -.26, p < .05$). Children's perceptions of support explained 9.18% of the variance in their mental health problems, and 2.8% of the variance in their reports of victimization.
- Children who reported higher levels of peer **victimization** reported more **mental health problems** ($b = .28, p < .05$) than less victimized children. Being victimized explained 16% of the total variance in children's mental health problems.
- The level of **predictability and cooperativeness** of school contexts was not significantly associated with peer **victimization** ($b = -.04, p = .12$) nor with children's **mental health** ($b = -.05, p = .07$), but there was a significant yet small association between **predictability and cooperativeness** and children's perceptions of **support** from school members ($b = .34, p < .05$). These findings corroborate that while related, these two constructs capture distinct dimensions of school contexts.

PRELIMINARY REGRESSION ANALYSES

Introduction

Three level multi-level models were fitted using HLM (V. 6.06, Raudenbush & Bryk, 2002), in order to explore the associations between child characteristics and living conditions and their socio-emotional outcomes: 1) children's perceptions of supportive schools and teachers, 2) children's perceptions of schools and classrooms as predictable and cooperative, and children's self-reports of 3) mental health (conduct problems, hyperactivity & emotional symptoms) and 4) victimization. Children were modeled at level 1, teachers at level 2 and school clusters at level 3.

Child characteristics and living conditions were grouped in blocks of variables (see Table 3) hypothesized to be conceptually related. Analyses were run entering one block at a time, and then stacking blocks (1 and 2, 1, 2 and 3 and so on). This analytic strategy allowed us to get a sense of the association between the outcome and variables in each block, when the variance shared between blocks was, or was, adjusted for.

In this report we describe preliminary results from models in which the shared variance between all variables was adjusted for (i.e., all blocks simultaneously entered). That means that the association between a particular variable and the outcome represents the unique contribution of that variable to the prediction of the outcome, net of the association between that variable and other variables included in the model. *For example*, suppose grade and age are highly correlated. When models are separately run for each variable, we could find a significant association between both grade and age and children's math scores. However, when we simultaneously model grade and age, the association between age and math may no longer be significant, as it is already accounted for by grade. In other words, the variance in age that is not associated with grade does not explain additional variance in children's math scores, once the effect of grade is accounted for.

Dummies⁸ for all subdivisions (with Kalemie as the reference group) were included at the cluster level to adjust for differences between these geographical units. This means that all

⁸ Dummy variables are commonly used in regression analysis when dealing with categorical or nominal information, of the sort of subdivisions, race or gender. To include information on 3 race groups in a regression analyses, for example, we create 3 dummy variables where (1) Black = 1, Not Black = 0, (2) Asian = 1, Not Asian = 0, and (3) White = 1, Not White = 0. When fitting the model, we exclude one of the three variables to avoid redundancy, and the excluded group becomes the *reference*. Thus, if we exclude Black, the regression coefficients for Asian and White will represent the increase in the outcome for Asians and Whites relative to Blacks, but if we exclude Asian, the coefficients will represent the increase in the scores for the other two groups compared to Asians.

results should be interpreted net of differences between subdivisions. In other words, since Kalemie is the reference group, the intercept represents the mean for Kalemie and coefficients for all predictors represent the estimated increase in the score relative to that mean. Since we did not have any specific hypotheses regarding differences between subdivisions, the selection of Kalemie as the reference group is arbitrary, and analyses could be run using other subdivisions as reference.

Table 3. Complete list of child characteristics organized by block

Block	Variable Label
Subdivision	dummy code intercept for Kalemie
	dummy code for Kambove
	dummy code for Kasenga
	dummy code for Kongolo
	dummy code for Mutshatsha
	dummy code for Lubudi
Block 1	Child gender (1=male)
	Swahili (1=yes)
	Grade 2 vs. 3 & 4
	Grade 3 vs. 4
Block 2	Average number of people in household
	Density (ppl/room)
	Child burden (child/adult)
	Lives w both parents (1=yes)
	Someone important not in household (1=yes)
	Mother ever been to school (1=yes)
	Father ever been to school (1=yes)
	Mother has job (1=yes)
	Wealth (Factor 1-Rural wealth)
	Wealth (Factor 2-Urban wealth)
Block 3	Eats meat (=1) vs. never (=0)
	Goes to bed hungry (0=never, 1, 2, 3=often)
	Moved: 0, 1, 2, 3= more than 2
	Job at home (1= yes)
	Job outside home (1= yes)
Block 4	Age (centered around the group mean)
	Repeat prev grade (1= yes)
	Attend Kindergarten (1= yes)
	Usually homework from K teacher? (1= yes)
	Someone to help w K homework? (1= yes)

Days late last week
Days missed school last week
Comprehension of questions (0= a lot of difficulties, 1, 2= no difficulties) as judged by enumerator

PRELIMINARY RESULTS

Table 4 (page 31) presents a visual summary of results for regression analyses exploring the association between child characteristics and socio-emotional outcomes.

Child demographic characteristics (Block 1)

Overall, children's personal characteristics were not associated with their socio-emotional outcomes. The only exception was **conduct problems**, which was more prevalent for 2nd graders (relative to 3rd and 4th graders) and less prevalent for **3rd graders** (relative to 4th graders).

General household characteristics (Block 2)

Regarding children's household characteristics, results suggest different patterns of associations for children's perceptions of their school environment vs. children' self-reports of socio-emotional wellbeing.

On the one hand, children living in households with high **density** (people per room) and high **children burden** (children per adult) perceived their **schools and teachers as less supportive**. Children in high **child burden** households also perceived schools as less **predictable and cooperative**. On the other hand, these children reported less **hyperactivity & emotional symptoms**. In sum, dense and high child burden households appear to be negatively associated with children's perceptions of the school environment, but positively with children's self-regulation and wellbeing.

Contrary to expectations, children who reported living with both parents reported more **hyperactivity & emotional symptoms**.

Finally, children who reported **someone important does not live in the household** reported more **victimization** and children from households with more **rural wealth** reported less **victimization**.

Other living conditions (Block 3)

Children's diet and job at home were important correlates of their socio-emotional outcomes. Specifically, children whose diet included **meat** - an index of wealth - and who had a **job at**

home tended to report less **mental health** (conduct problems, hyperactivity & emotional symptoms) and **victimization** problems. Children who reported having a job at home also rated **schools and teachers as more supportive** and schools as more **predictable and cooperative**. Having a rich diet and helping with household chores can have a positive impact on children's development, but it is not clear why these factors would be associated with children's perceptions of schools as more supportive, predictable, and cooperative. It may be that children who have a job at home, and who according to the previous findings are less likely to have mental health problems (i.e., conduct problems, hyperactivity & emotional symptoms), elicit more positive responses from teachers and other school personnel and, as a result, come to see their school in a more positive light.

Whereas having a job at home was positive for children, having a **job outside the home** may be detrimental. Specifically, students who reported having a job outside the home reported more **victimization** at school. Working outside the home may be an indicator of lower socio-economic status and this, in turn, may be associated with more peer victimization.

Finally, higher **household mobility** was associated with perceptions of **schools and classrooms as more predictable and cooperative** and with less **victimization**, but also with more **hyperactivity and emotional symptoms**. It is possible that children who move residences often perceive schools as relatively predictable settings compared to their home environment. As per its association with hyperactivity & emotional symptoms, previous empirical work has not been conclusive and recent studies point to the need to study mobility in the context of other child and household characteristics (e.g., Ginsburg, Richter, Fleisch, & Norris, 2010⁹). OPEQs second wave of data includes additional questions that will allow us to better understand the nature of household mobility in our sample.

Prior school adaptation (Block 4)

The associations found between **attending kindergarten**, getting **homework** and **help with homework** and children's socio-emotional outcomes were rather puzzling.

Children who **attended kindergarten** reported more **conduct problems, hyperactivity & emotional symptoms** and **victimization**. However, these children also perceived their **schools as more predictable and cooperative** than children who did not attend kindergarten.

⁹ Ginsburg, C., Richter, L.M., Fleisch, B., & Norris, S.A. (2011). Associations between residential and school mobility and educational outcomes in South African urban children: The birth to twenty cohort. *International Journal of Educational Development*, 31(3), 213-222.

Interestingly, children who said they used to get **homework** from their kindergarten teacher reported more **victimization** and **conduct problems**, and children who said they had someone to **help with homework** also reported more **conduct problems**. The meaning of getting homework and getting help with homework in the DRC needs clarification. It is possible that children who are struggling in school are the ones who are assigned homework and need someone to help at home.

Being **late** to school was associated with more **conduct problems** and **victimization**.

Finally, the less difficulties children had in **understanding the survey**, as judged by the data collector, the less **conduct problems** and **hyperactivity & emotional symptoms** they reported. These children also perceived their **schools as more predictable, cooperative and supportive** than children who had more difficulties understanding the questions. Children who report higher levels of conduct problem and hyperactivity & emotional symptoms have a harder time paying attention and get usually distracted; this may have contributed to their difficulties in understanding the questions, as judged by the data collector, and may also hinder their ability to internalize school routines and get support from teachers and other school personnel.

Table 4. Summary of results for child socio-emotional outcomes as predicted by child characteristics

		SEL Outcomes				
Block	Predictors	Mental Health Problems		Victimization	Supportive Schools	Predictable Contexts
		Conduct Problems	Hyperactivity & Emotional Symptoms			
Subdivision	Intercept for Kalemie	+ <i>t</i>	+		+	+
	dummy code for Kambove	-			+	
	dummy code for Kasenga				+	-
	dummy code for Kongolo	+	+	+		
	dummy code for Mutshatsha				+	
	dummy code for Lubudi		+		+ <i>t</i>	
Block 1	Child gender (1=male)					
	Kiswahili (1=yes)					
	Grade 2 vs. 3 & 4	+				
	Grade 3 vs. 4	-				
Block 2	Average number of people in household					
	Density (ppl/room)				- <i>t</i>	
	Child burden (child/adult)		-		-	-
	Lives w both parents (1=yes)		+			
	Someone important does not live in household (1= yes)			+ <i>t</i>		
	Mother ever been to school (1= yes)					
	Father ever been to school (1= yes)					
	Mother has job (1= yes)					
	Wealth (Factor 1-Rural wealth)			-		
	Wealth (Factor 2-Urban wealth)					
Block 3	Eats meat (=1) vs never (=0)	- <i>t</i>	- <i>t</i>	- <i>t</i>		
	Go to bed hungry (0=never, 1, 2, 3=often)					
	Moved:0, 1, 2, 3=more than2		+	- <i>t</i>		+
	Job at home (1=yes)	-	-	-	+	+
	Job outside home (1=yes)			+		
	Age					
	Repeat prev grade (1=yes)					
	Attend Kindergarten (K) (1=yes)	+	+ <i>t</i>	+		+

Block 4		Mental Health Problems		Victimization	Supportive Schools	Predictable Contexts
		Conduct Problems	Hyperactivity & Emotional Symptoms			
	Usually got homework from K teacher? (1=yes)	+		+		
	Someone to help w homework in K? (1=yes)	+				
	Days late last week	+		+		
	Days missed school last week					
	Comprehension of questions as judged by enumerator (0= a lot of difficulties, 1, 2= no difficulties)		-		+ <i>t</i>	+

Note: Significant associations between a predictor and outcome are indicated by a positive (+) or negative (-) sign, which also represents the direction of the association. Trends for significance ($p < 0.10$) are indicated by a "*t*" next to the positive or negative sign. Non-significant associations are represented by empty cells.

CONCLUSIONS

Overall, our results indicate substantial variability between children, between schools and subdivisions in children's socio-emotional outcomes. While the average findings are generally positive, it is of concern that even children in the same school experience significantly different learning contexts and levels of wellbeing. OPEQ's goal of providing "equitable access to quality basic education" is a promising effort to close the gap between children at the high and low ends of the spectrum.

Descriptive findings from Katanga suggest that on average children perceive their **schools and teachers as supportive**, but that compared to other African countries improvement is needed in creating student-centered and intellectually stimulating learning environments. Our results also indicate that children with different backgrounds have different perceptions of the level of support they receive from teachers and other school personnel. It remains an open question whether children from relatively disadvantaged home environments elicit differential treatment from school personnel, or whether they see schools and teachers through a more negative lens. In any case, providing supportive environments for all children should be a goal of all schools. As suggested by our findings, children's perceptions of supportive schools and teachers are associated with lower levels of victimization and mental health problems.

Also, children perceived their schools and classrooms as moderately **predictable and cooperative**, and there is considerable room for improvement in this dimension. Unlike children's perceptions of their schools and teachers as supportive — mostly driven by characteristics of children themselves — features of schools and subdivisions appear to play a very important role on how predictable and cooperative children come to see their schools and classrooms. Establishing routines and being explicit about the classroom schedule, as well as promoting peer cooperation by means of small-group work and the encouragement of sharing, may all contribute to children's perceptions of their schools and classrooms as predictable and cooperative. This may be particularly important for children from highly mobile and otherwise disorganized homes, who may rely on schools to build a sense of control over their environment.

In terms of children's individual wellbeing, **victimization** appears to be a more common experience for Congolese children than for children in other countries. Whereas the average rates of victimization are not alarming, the vast majority of children experience some level of peer victimization at school, and as corroborated by our results, victimization takes a toll on children's mental health. Like children's perceptions of supportive schools and teachers, victimization is mostly associated with children's individual characteristics, meaning that some children may be more susceptible to be targets of aggression. Schools should aim to promote

environments that prevent victimization for all children by developing tolerance for diversity, empathy and other moral emotions, as well as the mastery of non-aggressive ways of interaction.

Children's self-reports of **mental health problems** suggest moderate levels of conduct problems, hyperactivity & emotional symptoms. However, levels of mental health issues appear to be higher than in Kinshasa, where children may be less exposed to violent conflict or other adverse experiences. In contrast with victimization, there was a substantial amount of variability in children's mental health problems that lies between subdivisions, and a large proportion that resides at the school level. This supports the contention that there are larger societal factors impacting children's mental health, in addition to children's individual predispositions and household experiences. This finding calls for awareness at the subdivision or regional level of the need to intentionally address children's mental health problems. Programs like OPEQ may help schools in providing increasingly supportive contexts for struggling children.

Regression analyses indicated that with the exception of grade differences in conduct problems, children's personal characteristics (i.e., gender, grade, language) were not related to their socio-emotional outcomes. It is somewhat surprising that there were no gender differences in children's socio-emotional outcomes, given the wide differences found in boys' and girls' academic performance (see Torrente et al., 2011).

In terms of household characteristics, children's living conditions, and kindergarten experiences, results were mixed. Some household characteristics that were negatively associated with children's perceptions of schools were positively related to children's mental health. Also, findings related to children's kindergarten experiences were counterintuitive. There are at least two reasons why results from these preliminary analyses should be taken with caution. First, analyses were correlational, so it is not possible to establish the direction of causality. Second, we focused on exploring the unique contribution of each variable to children's socio-emotional outcomes, but given that many of these factors work together on influencing children's development, a clearer picture may emerge when their interactions are explored, as well as by examining their cumulative effects on children's outcomes. Future analyses are expected to shed light on some of these unexpected findings, and to explore the contribution of teacher and school characteristics to children's outcomes.

Appendix A

Construct	Variable Label	Source/Measure
SUPPORTIVE SCHOOLS & TEACHERS (17)	Your teachers treat you with respect	CFS ¹⁰ - Safe, Inclusive, Respectful climate
	Teachers at your school are interested in what students like you have to say	CFS- Safe, Inclusive, Respectful climate
	You think this school respects families like yours	CFS- Safe, Inclusive, Respectful climate
	The school is a welcoming place for children from families like yours	CFS- Safe, Inclusive, Respectful climate
	This school understands and values children's rights	CFS- Safe, Inclusive, Respectful climate
	If students see another student being picked on, they try to stop it	CFS- Safe, Inclusive, Respectful climate
	This school is a welcoming place for all types of students	CFS- Safe, Inclusive, Respectful climate
	Boys and girls have equal opportunities to succeed at this school	CFS- Safe, Inclusive, Respectful climate
	My teacher gives me help whenever I need it	Perceived Teacher Support (Teacher-child relationship)
	Your teacher always tries to be fair	Perceived Teacher Support (Teacher-child relationship)
	Your teacher notices good things you do	Perceived Teacher Support (Teacher-child relationship)
	Students at this school try to do a good job on their lessons, even if they are difficult or not interesting	CFS - Challenging student-centered learning env
	The subjects we are studying at this school are interesting	CFS - Challenging student-centered learning env

¹⁰ Child Friendly Schools, UNICEF

	Variable Label	Source/Measure
	Teachers at this school will listen if you want to explain your answers in class or on assignments	CFS - Challenging student-centered learning env
	Every student is encouraged to participate in class discussions	CFS - Challenging student-centered learning env
	Teachers at this school expect students like me to succeed in life	CFS - Challenging student-centered learning env
	You want to complete secondary school	CFS - Challenging student-centered learning env
PREDICTABLE & COOPERATIVE CONTEXTS (10)	Do you know what time: you have reading lessons	NYU
	Do you know what time: You have Math lessons	NYU
	Your classmates and you: help each other learn	NYU
	Your classmates and you: work together to solve a problem	NYU
	Your classmates and you: work together to learn how to read	NYU
	Your classmates and you: work together to learn Math	NYU
	Your classmates and you: Share books without fighting	NYU
	Your Teacher: recognizes and praises students when they work together	NYU
	Your Teacher: helps students work together	NYU
	Your Teacher: shows students how to share books	NYU
VICTIMIZATION (5)	A kid from school pushed, shoved, or hit you	Aggression self-report (Victimization)
	A kid from school called you a bad name	Aggression self-report (Victimization)
	Kids from school said that they would hit you	Aggression self-report (Victimization)
	Other kids left you out on purpose	Aggression self-report (Victimization)
	A student made something up, so kids wouldnt like you	Aggression self-report (Victimization)

	Variable Label	Source/Measure
MENTAL HEALTH PROBLEMS (12)	You get in many fights with other children	SDQ ¹¹ - Conduct Problems Scale
	You are often accused of lying or cheating	SDQ- Conduct Problems Scale
	You get angry and yell at people a lot	SDQ- Conduct Problems Scale
	You take things that do not belong to you from home, school and elsewhere	SDQ- Conduct Problems Scale
	You are always in trouble with adults	SDQ- Conduct Problems Scale
	Is it difficult for you to sit quietly for a long	SDQ -Hyperactivity Scale
	Is it difficult for you to concentrate in school	SDQ -Hyperactivity Scale
	You are usually distracted	SDQ -Hyperactivity Scale
	You worry a lot	SDQ- Emotional Symptoms Scale
	you feel nervous in situations that are new	SDQ- Emotional Symptoms Scale
	You feel sad or want to cry a lot of the time	SDQ- Emotional Symptoms Scale
	Nothing makes you happy	SDQ- Emotional Symptoms Scale

¹¹ Strengths & Difficulties Questionnaire