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Building solid foundations: Programme effects evaluation of the Grade RR programme at Christel House Junior School

FINAL REPORT

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Contents

INTRODUCTION

Background

Early childhood, from birth to nine years old, is the most important developmental period of an individual's life. As a result, Early childhood development (ECD) is increasingly becoming a focus for education policy debates around the world. ECD refers to the processes through which young children grow and thrive physically, mentally, emotionally, spiritually, morally and socially" (McCoy, Zuilkowski, Yoshikawa & Fink, 2017). It is during this time that a foundation is laid for holistic development while cultivating a motivation for lifelong learning, preparing children for adulthood (Biersteker & Dawes, 2008). The value of ECD is driven by insights from multiple fields, including neuroscience, economics, and social sciences, which indicate that healthy development in early life is the foundation on which future success is built.

Children living in low-income and middle-income countries (LMICs) have a higher chance of encountering a greater number, and variety of risk factors, and fewer promotive development influences than poor children living in high-income countries (HICs) (Britto et al., 2016). Globally, over 43% of children under the age of five in LMICs are at risk of not fulfilling their full developmental potential because of increased risks of poverty, poor nutrition, and a lack of access to basic services and early learning opportunities (Chan et al, 2017). Developmental delays become evident in the first year of a child's life, worsen during early childhood, and thereafter continue throughout an individual's life (Black et al., 2017). It is thus important to provide support to ensure that all children, regardless of background, experience an early-life environment that boosts early-life skills and later life achievements. It is also more productive to invest in disadvantaged children during their early years rather than provide remedial assistance later in life, at which time it would be both costlier as well as less effective (Elango et al., 2015). Interventions should therefore target the most disadvantaged children as early on as possible to address social inequalities (Hasan et al., 2013).

The value of Early Childhood Care and Education

Early childhood care and education (ECCE) has been identified as a mechanism and policy tool for fostering ECD in various contexts (McCoy et al., 2017). Previous research has shown that ECCE is able to enrich the learning and nurturing environments of children, with those from disadvantaged backgrounds experiencing the largest benefits (Bernal and Fernández, 2013; Elango et al., 2015;

Hasan et al., 2013; Yoshikawa and Kabay, 2015). Outcomes included early literacy, language, mathematical and reasoning abilities, as well as fine motor skills (McCoy et al., 2017). Research also shows that while the difference in academic achievement scores between children who did and did not attend preschool diminishes over the elementary school grades, preschool attendance has a positive impact on other important outcomes. The latter include reduced teen pregnancy, high school completion, years of education completed, earnings, and reduced crime (Yoshikawa et al., 2013). Supporting ECD through ECCE program is thus a promising means to realise children's rights, build human resource capacity, and reduce poverty and inequality (Biersteker & Dawes, 2019; Biersteker, Dawes, Hendricks & Tredoux, 2016). The ability of ECCE programs to do so, however, relies on their quality.

ECCE at Christel House School South Africa

South African students' academic outcomes are highly influenced by poverty. Research suggests that environmental factors beyond the control of learners are some of the major influences on academic performance. Most South African children are born into environments that limit their ability to reach their full potential. These environments are characterised by poor access to essential services and nutrition, inadequate and unsafe living environments, and limited opportunities for learning and development (Hall, Sambu, Almeleh, Mabaso, Giese, & Proudlock, 2019).

The current study is centred on the pre-reception year (Grade RR) programme which was implemented at the Christel House South Africa (CHSA) Junior School in Cape Town in 2022. This new programme accommodates approximately 60 learners who will be turning five years old in the year of enrolment in three classes.

The school was first opened in 2002, enrolling more than 1 000 children who reside in areas such as Langa, Hanover Park, Joe Slovo, Bokmakeierie, Pook-Se-Bos and Delft in the greater Cape Town Metropolitan. These children are given education, nutrition, health care, life skills and a nurturing environment at CHSA, along with a combination of inputs that are intended to enable social mobility, independence and young people who are to engage in all the activities that comprise healthy forms of critical citizenship. The educational model is underpinned by the belief that a combination of adequate classroom instruction, social, academic and health related support can enable any child to

be successful. CHSA has a 100% matric pass rate once re-takes are included in calculating success rates.

Learners are recruited from areas that contain schools that are classified as being in the bottom two poverty quintiles. Learners must come from low socioeconomic backgrounds, where the average monthly household income cannot exceed R1 500 per person, and from preidentified geographic areas. Children who attend CHSA are not exceptional in comparison to their peers and would be considered as having 'normal learning abilities'. Once enrolled in the school, students identified as having learning disabilities or other cognitive, emotional, or physical challenges are provided with the necessary support to help them become successful in their academic aspirations and other endeavours. Four values form the core of the CHSA philosophy, namely respect, responsibility, independence and integrity, values that are intended to build the social and ethical characters of students towards their becoming active and upstanding members of their society.

The current study

The study was commissioned by CHSA to conduct a programme effects evaluation of the school's newly implemented Grade RR programme. The evaluation design was used as an external evaluation process where all researchers were independent of CHSA and its implementation team. The evaluation study was conceptualised to assess the impact of the CHSA initiative during a full school year. Given the relatively short assessment period, the size of the study population and the resulting power to detect a reasonable effect size, it was not feasible for our evaluation design to use population-based indicators because such indicators are not sensitive enough to capture the expected effects. Our focus therefore was on mid-term output measures to sufficiently capture any intermediate effects resulting from the CHSA initiative, which are all understood to contribute to improve learner education outcomes. The main study objective was to evaluate the impact of the CHSA Grade RR programme on measures of learner developmental gains in terms of physical and motor development, emotional and social development, cognitive development, and language development.

METHODOLOGY

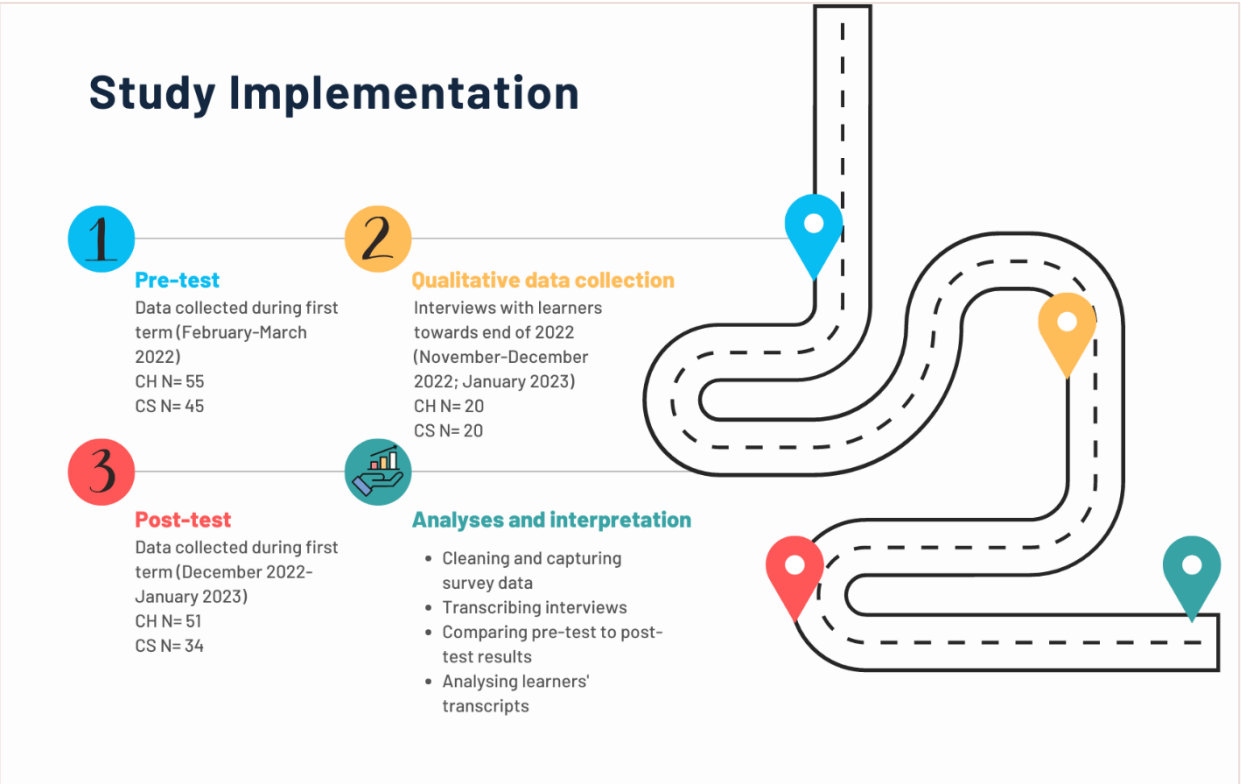
Mixed-methods approach

The methodological framework of the study followed an explanatory mixed methods design. The rationale behind selecting this design is guided by the research questions. This methodology purposefully includes the qualitative methods of data collection and analysis to explain the quantitative results. Analysing quantitative data in the presence of qualitative information provides additional input for the interpretation of overall results. This further provided additional information on unexpected, heterogenous, or unexplainable results. In line with the rationale of a mixed methods design in this study, the qualitative data collection followed quantitative data collection towards the end of the school year, but before collecting the endline data.

Quantitative component

As an explanatory mixed methods design relies extensively on the robustness of the quantitative data, the set-up of the quantitative research component was a crucial element. For this reason, we structured the quantitative research component based on a quasi-experimental design in the form of a controlled pre- and post-test design with two post-test measurements (Shadish, Cook & Campbell, 2001). This allowed us to collect data at baseline (prior to the implementation of the Grade RR programme) and at endpoint (towards the end of the impact evaluation) (see Figure 1). The quantitative design was controlled as we collected and compared data from both the intervention site (CHSA) and a controlled site (referred to here as the control school (CS). Fifty-five (55) learners from CHSA and 45 from the control school participated in the pre-test to establish a baseline of child development. Through attrition, these number dropped to 51 and 34 learners respectively.

Figure 1: Study trajectory



a. Assessment instrument

A revised version of Ages and Stages Questionnaire (ASQ) was used in this study. It is a tool used by healthcare professionals, educators, and parents to assess a child's development in various areas such as communication, gross and fine motor skills, problem-solving, and social-personal skills. The ASQ consists of a series of questionnaires that are completed by researchers who observed each child's behaviour. The questionnaires are designed for specific age ranges, from birth to 5 years, and cover a variety of developmental domains. While the ASQ is intended for individual level observation, it proved useful to assess group differences at a school level.

The ASQ is a standardised, reliable, and valid tool that has been extensively researched and tested. It is an important tool for healthcare professionals, educators, and parents to help identify potential developmental concerns early and provide appropriate support and services to children who need them (van Heerdan et al., 2017). One of the primary uses of the ASQ in South Africa has been to support early childhood development and identify children at risk of developmental delays or disabilities. In addition, the ASQ has been used in research studies in South Africa for example, a study conducted in a low-income community in Cape Town found that the ASQ was a reliable and valid tool for identifying developmental delays in young children (van Heerden et al., 2017).

b. Assessment

Each learner was individually assessed by a researcher (sometimes with assistants). The child would be asked to perform certain tasks. The child was then rated as "able to complete the task", "sometimes able" or "not yet able". The "sometimes able" refers to the child being able to complete a portion of the assessment, for example listing 4 items out of 6. Table 1 sets of the description of the assessment activities.

Table 1: Description of the adapted Ages and Stages assessment used.

Developmental domain aligned with structured assessment	**Description of assessment**	**Number of assessments**
Communication skills	The degree to which learners could verbally respond to questions and instructions.	4
Problem Solving ability	The degree to which learners could follow instructions, differentiate between objects and colours, count and perform certain tasks.	6
Personal and social skills	The extent to which learners can describe themselves and their social group.	2
Gross motor skills	The ability to perform activities which require whole body movement and which involve the large muscles of the body	6
Fine motor skills	The ability to use the smaller muscle of the hands to manipulate materials	6

c. Data analysis

SPSS version 28 was used to analyse the data. To assess the Grade RR programme, we compared learners' outcomes at baseline to endline test results. The premise was that intervention site received a pre-test at baseline, followed by exposure to the Grade RR programme and then a post-test at endline. The non-equivalent group or the controlled site was also given a pre-test but did not receive the specific Grade RR programme offered at CHSA, and then a post-test. While we can assess the impact of the intervention on children's outcomes, we cannot however tell if the change is solely due

to exposure to the intervention. Many factors can cause a change that may not be accounted for and assumed to be due to the manipulation. The passage of time for instance, allows for several factors to cause a change, outside of the manipulation. To this end, we do not assume causality.

Table 2 summarises the experimental design used for this study. Independent samples t-tests and paired samples t-tests were used to determine whether the differences between the groups were statically significant at the 5% level ($p<0,05$). The type of test used is also reported in the table.

Table 2:Summary of experimental design

Test	Comparison	Data analysis method	Purpose
Christel House Pre-test	Christel House Post test	Paired samples t-test	To determine whether learners who participate in the programme improve, and the extent thereof
Control school Pre-test	Control school Post-test	Paired samples t-test	To determine whether learners who do not participate in the programme improve, and the extent thereof
Christel House Pre-test	Control school Pre-test	Independent samples t-test	Baseline of learner development
Christel House Post test	Control school Post-test	Independent samples t-test	Whether CH learners improve more than participants who do not receive the treatment

This study had originally planned to compare the differences in development between learners, who have not participated in a Grade RR programme and the Christel House learners. The purpose of this was to determine the programme effects of the Christel House Grade RR. The HSRC was reliant on the networks of CHSA to facilitate this access. This analysis could not be done for two reasons:

1. ECD enrolment in South Africa, for children under 5 is high. The 2019 General Household Survey (Statistics South Africa, 2019) reported that 73% of 4-year-old children attended some kind of early learning facility. Finding a suitably sized control group would have required finding children in multiple areas/ schools.
2. The research team did attempt to recruit a suitable group via Christel House networks. We were unable to locate suitable schools/ creches. To address this challenge, we increased our sample size at the comparison school to try to match (as far possible) the sample size at Christel House.

To mitigate this , the results from the CHSA is compared to another study conducted by Hsaio and others (2016) conducted in rural KwaZulu-Natal and Zambia. The results from that study, although with a different methodological design, will provide a comparison for the baseline assessment.

Qualitative component

The second study component refers to the qualitative assessment of learner development. This relied on participatory methodologies which situates participants at the centre of the research (Blackbeard & Lindegger, 2014). Participatory research methodologies foregrounds participants knowledge, experiences, and insights on a particular issue (Fletcher, Cox, Scannell, Heykoop, Tobin-Gurley, & Peek, 2016; Fox et al., 2010), encouraging participants subjective voices in representing their own realities. The participant-researcher relationship was also collaborative, where researchers supported participants to tell their stories or opinions, encouraging co-ownership of research and process.

a. Data collection approach

To complement the structured evaluation assessments, a subset of the cohort of learners were purposively selected to participate in a participatory qualitative interview (see Figure 1). Focal areas in the qualitative component were aligned with key outcomes of the quantitative assessment, focusing on communication, language development, problem solving and personal-social development (see Table 3). We also explored learners' overall experience and perception of the Grade RR program, focusing on what they enjoyed and did not enjoy about the programme.

Table 3: Qualitative assessment

Developmental domain aligned with structured assessment	Assessment criteria	Exemplary interview questions
Communication	Can the child respond to questions (do they understand the concept of questions, can they answer simple questions)?	-Who lives with you at home? (Use the pictures developed in earlier question) -Who are your friends at home? -Can you tell me more about your school, for example, who do you see or play with?
	Can the child explain or describe something [a person or event]?	-Can you tell me about what happens in the morning before you get to school, starting with when you wake up? (for example, what happened this morning?)

	Can the child follow instructions [through expression sessions]?	-Can you please draw a picture or use the magazines to show me all the people that you love in your life? This can be people at home or people at school; you can choose.
	Does the child use full sentences?	Assessed through child's responses.
	Does the child use appropriate word endings [plural or past tense]?	
Problem solving	Can the child differentiate between things / people / objects?	-Can you please draw a picture or use the magazines to show me all the people that you love in your life? This can be people at home or people at school; you can choose. Probes: *Who is in the picture? *Tell me about each person. *What do you like doing with the person? *What kind of games do you like playing with this person? *Is this person big or small (and why)?
	Can the child describe something / someone in relation to the next?	
	Does the child use descriptions (colours, size, numbers etc.) appropriately?	
Personal-social	Can the child name or describe the people in her/his life?	-Can you tell me about what happens in the morning before you get to school, starting with when you wake up? (for example, what happened this morning?) Probes: *Who helps you get ready for school? *What are the things you do to get ready for school? *Do you normally eat before you get to school and what do you normally have? *How do you get to school? Who brings you?
	Can the child describe particular events in their life [things they have done and with who]?	
Perceptions and experiences of Grade RR		-Can you please show me something about the school that you like? You can draw or find pictures in the magazines, or we can go and take a picture of it. -Can you please show me something about the school that you don't like? You can draw or find pictures in the magazines, or we can go and take a picture of it.

b. Processes

Recognising children's limited abilities to actively narrate their experiences through 1:1 interviews or focus group discussions, we used a participatory methodology called Expression sessions (ES) to support them to tell their stories. Research consistently shows that participatory methods are valuable approaches to engagement younger children such as those included in our study (see Ponizovsky-Bergelson, Dyan, Wahle, & Roer-Stier, 2019). The ES method is a newly developed approach to collect verbal, visual and audio-visual data from participants (Groenewald & Essack, 2023). This flexible approach encourages participants to tell their stories by expressing themselves through different mediums, including images/photos/videos (self-taken, downloaded online, or from a book/magazine), a song (audio or lyrics), a drawing (self-drawn or a picture of a drawing), or a poem (self-written or not). The ES method extends beyond traditional interviews, focus group discussions or singular response methodologies as participants can partake in the research in ways that are most comfortable for them. Given the young ages of the participants, this becomes important, and researchers worked with them to develop expressions that creatively depict their experiences throughout the interviews. In this way, we encourage participant voice, and recognise the co-production of knowledge between researcher and participant.

Informed by Ponizovsky-Bergelson et al.'s (2019) findings that drawing and photo elicitation techniques are effective to encourage young children's participation in research, researchers made magazines (for finding images) and colour pens and paper (for drawing) available during the ES session. Where requested by the learners, researchers also used their cellphones to photograph spaces at the school (and in their classrooms) that learners identify as important to them. For captured images, we ensured not to capture participants' faces, teachers' faces, other learners' faces or any identifiable content that reveal the name of the school or school community. This was explained to the participants; however, participants were still able to instruct researchers on how to capture images to encourage participant voice in co-constructing the images. To discuss their content and explore their experiences and perceptions, we used open-ended questions, statements of encouragement and requesting questions to facilitate engagement on content and reflections (Ponizovsky-Bergelson et al., 2019). These techniques have been found to promote engagement during interviews with younger children (Ponizovsky-Bergelson et al., 2019).

c. Data analysis

ES interviews were audio recorded, transcribed, and translated where required. Content provided during the ES interviews (such as drawings) were captured through photos. Data were analysed thematically (Braun & Clarke, 2006), supported by Atlas ti software. Findings were considered in relation to the structured assessments to assess changes in learners' development.

d. Ethics

This study was approved by the Human Science Research Council's Research Ethics Committee (REC): application number REC 3/24/11/21/. Parents were informed of the study through a parents' meeting held at each school and school principals provided proxy consent for learners' participation. Parents had the option to refuse their children's participation in the study and received information sheets with researcher's contact details should they needed to discuss any concerns. Learners were also informed of the study and asked to provide verbal assent to participate in the study. Learners who were not willing to participate were not forced but their agency to refuse participation was respected.

RESULTS

In this section of the report, we describe the results of the evaluation, incorporating both the quantitative and qualitative data. Qualitative data aligned with three of the developmental domains assessed through the quantitative components, as previously presented in Table 2. Given that the qualitative data were collected to compliment the quantitative assessments, qualitative findings for the respected developmental domains are presented together with the quantitative results. The results will be presented according to the following sections:

1. Communication skills
2. Problem solving skills
3. Personal and social skills
4. Gross motor skills (quantitative only)
5. Fine motor skills (quantitative only)
6. Thoughts on the Grade RR programme (qualitative only)

Graphs will be used to illustrate the quantitative results, while exemplary extracts from the interviews will be used to showcase the qualitative data.

However, before presenting the results, we offer a brief demographic description of the learners, collected through home questionnaires completed by parents.

Participant demographics

The parents of the learners from both schools were asked to complete a "home questionnaire", which asked about assets in the home, educational levels of parents/ caregivers and household income. Overall, 48 home questionnaires were completed- 25 from Christel House and 23 from the comparison school. As not all parents completed a questionnaire, it would not be appropriate to link home factors to the development of the learners, however we can describe the general socioeconomic status of the households for the learners in each school. This will give an indication of what socioeconomic conditions learners come from. Table 1 sets out the indicators of socioeconomic status and incorporates home educational resources into the measurement. These resources- books in the home and mother's education level- have been consistently linked to child development and educational achievement in studies.

Table 4: Socioeconomic profile of learner's households

SES indicator	Christel House (n=25)	Comparison school (n=23)
Average number of people living in the home	5,6	5,4
Range of assets (max=13) eg. Mattress, working tv, mobile phone	Lowest= 3, highest =11 Average 7,6 assets	Lowest= 7, highest =13 Average= 10,5 assets
% households with no employed members	20%	13%
% with more than 25 books in the home	8%	13%
% mothers/ female caregivers who have not completed Grade 12	36%	21%

Source: Home questionnaire

Table 1 shows that the average household sizes were similar in both schools. More learners in Christel House came from households where no one had been employed in the preceding month. In addition, Christel House learners had fewer of the 13 assets than learners in the comparison school. With regards to educational resources, we see that, of those who responded, most did not have more than 25 books in the home. A third of Christel House learners' female caregivers, and a fifth of the comparison schools' had not completely Grade 12.

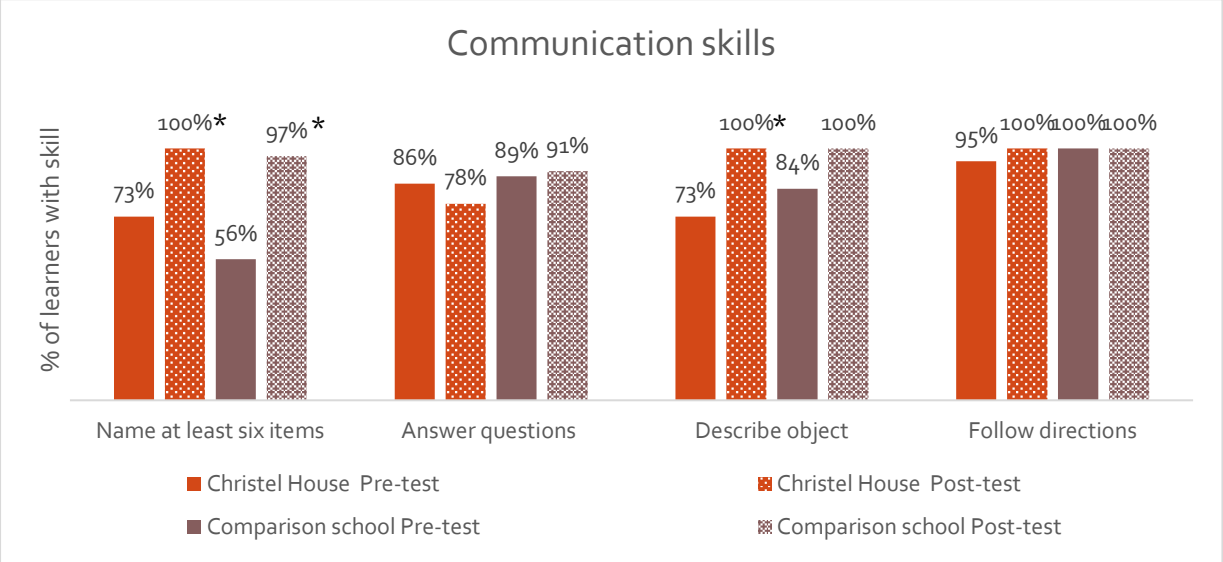
The findings (albeit from a sample of the learner's caregivers), indicate that the learners in both schools come from low socioeconomic households (or economically disadvantaged backgrounds). The learners who attended Christel House tend to come from more disadvantaged homes than those from the control school. The provision of high-quality education, which compensates for this, is critical for these learners in the interests of breaking the cycle of poverty and providing equal opportunities for all learners.

In the next sections of the report, the results of the study will be presented according to the various developmental domains assessed.

1. Communication skills

The ability to communicate is a pivotal component of a child's early development. This includes a child's ability to respond to basic questions, follow directions, or describe objects or people. As shown in Graph 1, improvements were observed in learners' communication skills at both schools. At CH, significant improvements were found in learners' abilities to name objects and to describe objects. This means that significantly more learners were able to perform these tasks at the end of the

programme (naming objects: 100%; describing objects: 100%) compared to at the start (naming objects: 73%; describing objects: 73%) (p<0,05). A similar trend was observed in the control school (CS) where significantly more learners were able to name items at endline (97%) compared to baseline (56%). We also observed an increase in the number of CHSA learners that could follow directions, from 95% at baseline to 100% at endline, although this was not significant. Pertaining to answering questions, however, we saw a slight decrease in the proportion of learners who could respond to questions at CHSA, but this difference was not significantly different. We also found a higher proportion of learners in the CS that could perform this task at baseline (89%) and endline (91%) when compared to the smaller proportion of learners at CHSA (baseline: 86%, endline: 78%. The children, aged 5, in the Hsaio (et al, 2016) study scored an average of 49% for communication skills.



Graph 1: Average percentage of learners able to demonstrate personal and social skills assessments at baseline (Pre-test) and endline (post-test)

*Statistically significant difference between pre- and post- test (p<0,05).

Communication skills were also assessed through the qualitative component by exploring whether children could respond to questions during the interviews, whether they used appropriate word endings and whether they used full sentences in their responses. Majority of the learners in both schools were able to respond to questions during the interviews and only two learners in each school consistently used short or single-word responses. Different to the quantitative findings, however, amongst the qualitative sample, more CHSA learners (n=16), compared to CS leaners (n=13) were

consistently able to respond to questions. This is likely due to the ASQ assessment requiring short, succinct answers rather than using appropriate sentences.

While learners generally used a combination of correct and incorrect word endings when referring to past tense, a positive finding was that learners consistently made attempts to position events in the past or present. Examples of learners' communication skills are provided below:

> *Interviewer: […] And can you show me, or tell me, about something that you can do, say or make that you made in class?*
>
> *Learner: Uh… I made this…*
>
> *Interviewer: What did you make? Let me see.*
>
> *Learner:* ***I made a normal card like this. {full sentence}***
>
> *Interviewer: Mm. What did you make it with?*
>
> *Learner:* ***I did cut it*** *out and* ***coloured it in***. ***I did cut it inside*** *to make squares.* ***{word endings}***
>
> *Interviewer: Oh… And what colour did you colour it with?*
>
> *Learner: Blue. My favourite colour.* *[CS, D10]*

> *Interviewer: Let's first start about this sister here. What can you tell me about your sister?*
>
> *Learner:* ***My sister, one time she goes with me to the parks. {full sentence}*** *The children cry.* ***She later did sleep****.* ***{word endings}*** *[CH, D11]*

> *Learner:* ***I like running around my room, and I like playing puzzles, and I like brushing my teeth in the morning, evening and when I go to sleep. {full sentence}*** *[CH, D15]*

One example of a learner who struggled to communicate during the interviews is offered below. As is evident, the learner mostly responded to research prompts through short or one-word responses. It is apparent that this learner also struggled to understand questions which were generally well responded to by other learners like those presented above.

> *Interviewer: We will talk about them now but let us first talk about your school and your teacher. What is your favourite thing basically that you learnt in class?*
>
> *Learner: I sleep.* ***{short responses}***
>
> *Interviewer: To sleep and that is your favourite thing?*
>
> *Learner: Yes.*
>
> *Interviewer: Why did you like that?*

Learner: Because I like to sleep.

[…]

Interviewer: Can you show me something that you can do, or say or make; anything you learnt in class, what can you show or tell me about it?

Learner: I watch. ***{short responses}***

Interviewer: You watch?

Learner: Yes.

Interviewer: What do you watch?

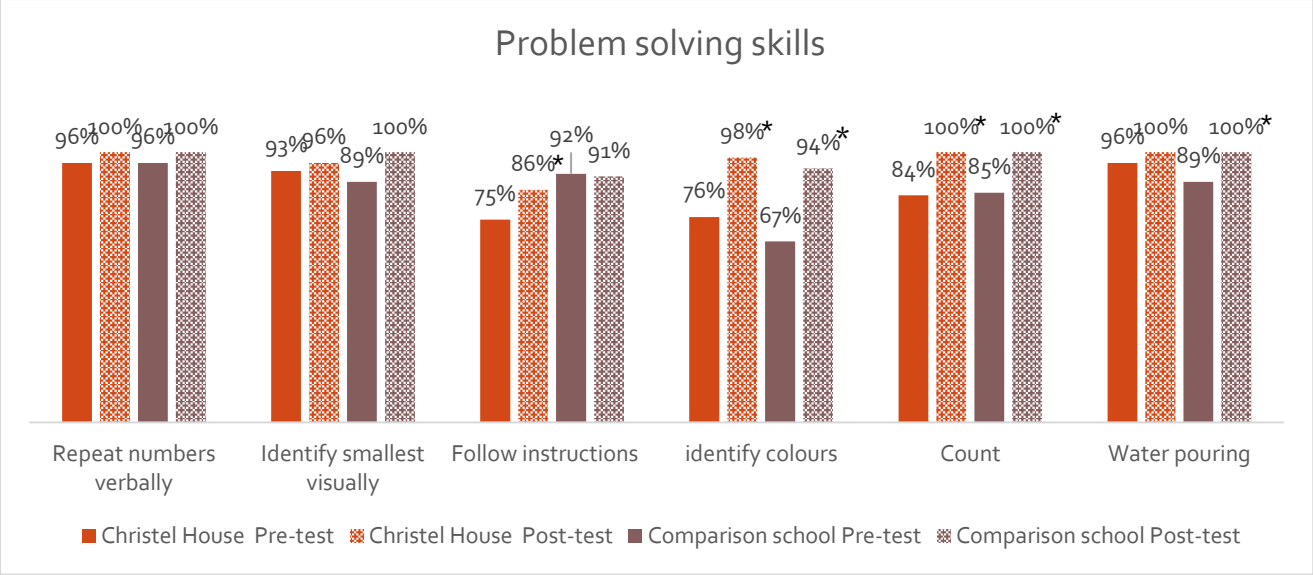
Learner: A movie. ***{short responses}***

Interviewer: You watch movies?

Learner: Yes. *[CH, D2]*

2. Problem-solving skills

Problem solving was assessed through various questions focused on whether the learners could follow instructions, differentiate between objects and colours, count and perform certain tasks. As shown in Graph 2 below, there were overall improvements in all learners' problem-solving skills, and significant improvements for CHSA learners were observed for following instructions, ability to identify colours and ability to count objects. When comparing CHSA learners to the CS learners, we found that a higher proportion of learners in the CS compared to CHSA were able to follow instructions during the assessment- both at baseline (CS=92%, CHSA=75%) and endline (CS=91%, CHSA=86%). This was still found to be a significant improvement in performance for CHSA learners, signifying the value of the Grade RR programme for CHSA learners ($p<0,05$). The children, aged 5, in the Hsaio (et al, 2016) study scored an average of 31% for problem solving skills.



Graph 2: Average percentage of learners able to demonstrate problem solving skills assessments at baseline (Pre-test) and endline (post-test)

*Statistically significant difference between pre- and post- test (p<0,05).

Qualitatively, problem-solving was assessed by exploring whether learners are able to describe and differentiate between people or objects. Majority of the learners, in both schools, were able to do so with four learners at CHSA, compared to two at CS, struggling to describe differences. Consider for example the extracts below, where learners were asked to talk about the people in their lives as part of the expression sessions (also associated images).

Participant D3

Interviewer: Those are mobile games, that's nice. Are you big or small?

Learner: Big.

Interviewer: Why are you big?

Learner: ***Because I am five years old and next year, I will be six years old {using age and aging to describe herself}***

Interviewer: And who is this next to you?

Learner: My brother.

Interviewer: Your brother, can you tell me…

Learner: [Interjects and says his name]

[…]

Interviewer: What do you like to do with your brother?

Learner: I like hugging him and I like to love him.

Interviewer: What kind of games do you like to play with your brother?

Learner: Subway surfer and Pac-man.

Interviewer: Those are the same mobile games. Is your brother big or small?

Learner: Big.

Interviewer: Why is he big?

Learner: He is 12 years old! ***{using age to describe brother}*** *[CH, D3]*

Image 1: Participant D3 drawing of family

Participant D8

Learner: This resembles my mummy.

Interviewer: Can you tell me about your mummy?

Learner: My mummy goes to the beach with me.

Interviewer: What do you like doing with your mummy?

Learner: I like to play with her.

Interviewer: What kind of games do you play with her?

Learner: Games; hide and seek.

Interviewer: Is you mum big or small?

Learner: Big.

Interviewer: Why Is she big?

Learner: ***Because she is old. {using age to differentiate}***

Interviewer: Who does this resemble?

Learner: [Uhm] My sister.

Interviewer: Your sister?

Learner: Yes.

Interviewer: Can you tell me about your sister?

Learner: My sister… I play with her in the park.

Interviewer: What do you like to do with your sister?

Learner: I play with my sister at the swing.

[…]

Interviewer: … Is your sister big or small?

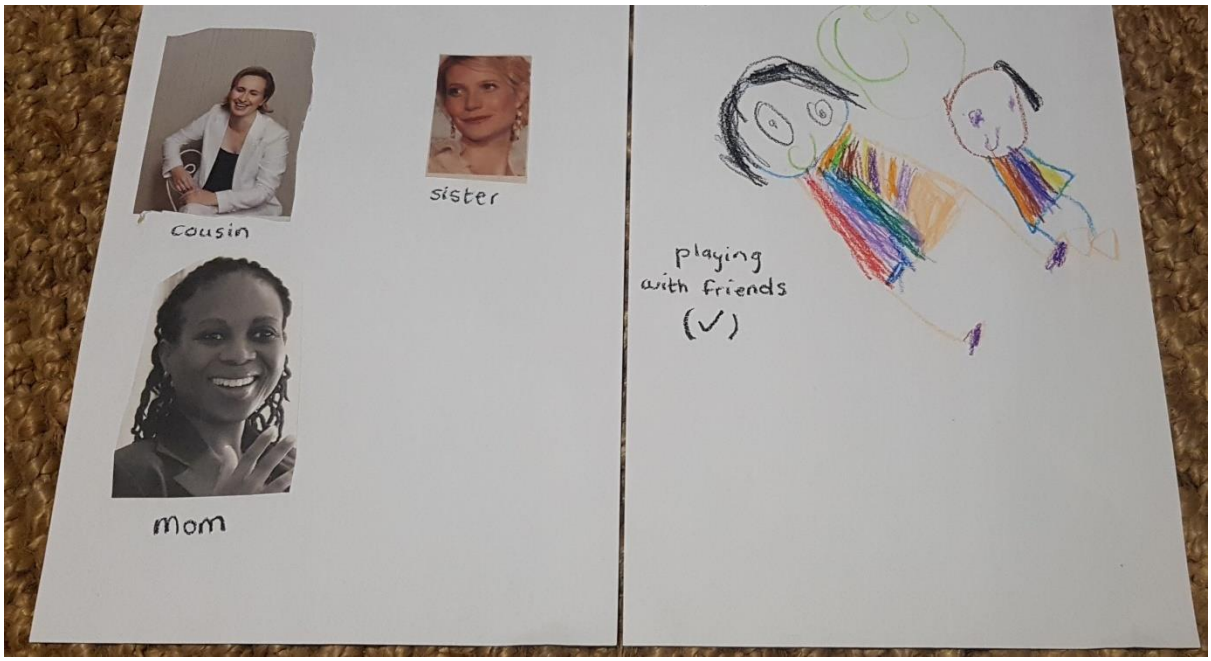
Learner: ***She is big too. {related sister to mother}***

Interviewer: Why is she big?

Learner: Because… ***she is big because…Uhm because she is big. {referring to size and not just age}***

[CHSA, D8]

Image 2: Participant D8 drawing of family



In the first extract, the learner describes herself and her brother in relation to each other. She describes herself by reflecting on her own age and the fact that she will be getting older soon. This progression of age, to her, signifies that she is 'big'. Later she does the same when speaking about her brother, and potentially also describes her brother as 'big' because he is older than her. A similar trend is observed in the second extract where the learner uses age and stature to describe the people in his life. These learners therefore represent participants who showed problem-solving abilities through description and differentiation. However, in the next transcript, we see a learner who struggled with offering such descriptions when asked about his family members:

Participant D5

Interviewer: Is your dad big or small?

Learner: Big.

Interviewer: Why is he big?

Learner: ***[Silence- participant shrugging].***

Interviewer: You not sure?

Learner: ***I'm not sure.***

Interviewer: And then who is this?

Learner: My mum.

Interviewer: Can you tell me a bit about your mum.

Learner: [Silence]

Interviewer: What do you know about your mum?

Learner: ***[Silence]***

Interviewer: You not sure?

Learner: I'm not sure.

Interviewer: What do you like doing with your mum?

Learner: I like playing with her.

Interviewer: Is your mum big or small?

Learner: ***Big.***

Interviewer: Why is she big?

*Learner****: [Silence]***

Interviewer: You not sure why she is big, you just know she is big? [Learner shakes head]. Let us move to the next picture. Who is this?

Learner: [Uhm..] My…(.)

Interviewer: Whilst you think about that one, who does this resemble?

Learner: My sister.

Interviewer: Can you tell me about your sister?

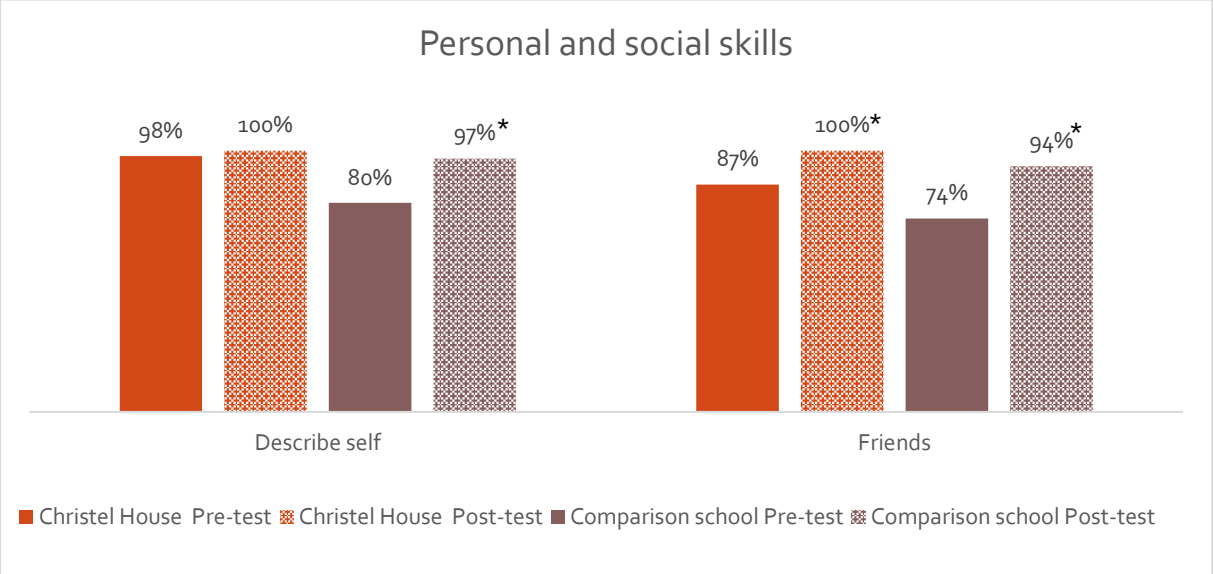
Learner: ***[Silence]*** *[CH, D5]*

Evident in the extract, are the difficulties that this learner had to *describe* his family members, even though he could *identify* the different people in his life. It was thus clear that the learner was able to respond to questions (by identifying who he drew or what activities they do together) and follow

instructions (by doing the drawing activity) but found the task of describing his family members difficult. This learner thus represents a participant that struggled with problem-solving as assessed in the qualitative interviews.

3. Personal and social skills

Positive improvements in learners' personal and social skills were observed at endline (see Graph 3). These skills were assessed by examining the extent to which learners can describe themselves (such as their name, surname, where they live etc.) and name people they socialise with (like their friends or siblings). At baseline, majority of the learners at CHSA (98%) were able to describe themselves, which increased to 100% at endline. A higher proportion of CHSA learners at baseline and endline were able to do so when compared to the proportion of CS leaners at baseline (80%) or endline (97%). A significant increase in the number of learners who were able to name people in their social space were observed for both schools, with a higher increase found for CHSA learners at endline (CHSA=100%, CS= 94%). The children, aged 5, in the Hsaio (et al, 2016) study scored an average of 55% for personal and social skills.



Graph 3: Average percentage of learners able to demonstrate personal and social skills assessments at baseline (Pre-test) and endline (post-test)

*Statistically significant difference between pre- and post- test (p<0,05).

The qualitative findings corroborated the above results where most learners could describe and differentiate between the people in their lives. For example, when asked about his friends at school, a CHSA learner mentioned three friends namely Zando, Cindy and Jason (pseudonyms; also found in

the extract below). Following, this learner (like many other learners) was able to name a different group of friends who he plays with at home, along with other people in his home environment and the things they do together:

Interviewer: Who lives with you at home?

Learner: My sister, my brother, my mummy and me.

Interviewer: Who are your friends at home?

Learner: Daren, Karl, Garth and Matthew and Brent.

Interviewer: And Brent. What are the kinds of things you do at home?

Learner: I like to play with them and… and… just that.

Interviewer: Who helps you with your homework at home?

Learner: My mummy.

Interviewer: If you don't understand something in class, who helps you at home?

Learner: Myself.

Interviewer: You teach yourself?

Learner: Yes. [laughter]

Interviewer: Can you tell me one thing someone at home taught you?

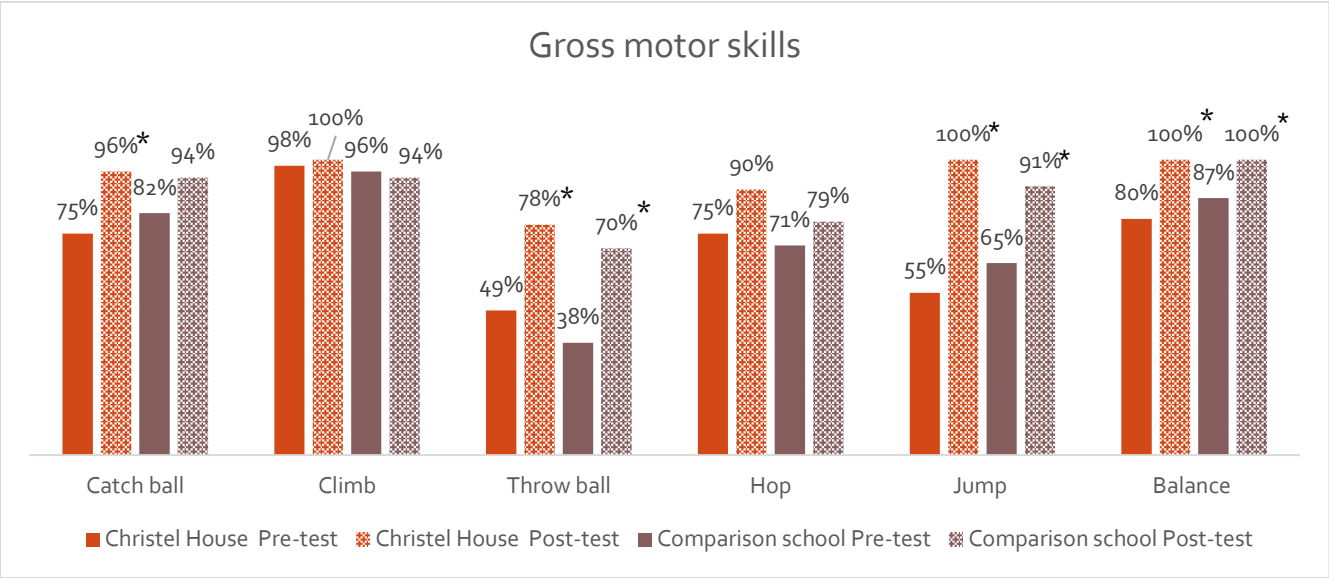
Learner: They teach me to write my name and surname. [CH, D6]

Overall, and in support of the quantitative results, learners in both schools were able to describe who their friends were at home and at school, who lives with them in the home and the things they do with the people in their lives. Interestingly, the qualitative data also showed that while all the learners in CHSA were able to name their teachers and state the name of their school, this was not the case for learners in the CS. Although most learners in the CS (n=15) were able to name their teacher, only seven learners in the CS were able to name their school.

4. Gross motor skills

Gross motor skills were assessed through the structured assessment only, where the researcher observed how learners performed certain tasks. Shown in Graph 4, these tasks entailed assessing 6 skills and significant improvements in learners' gross motor skills were found across four tasks for CH learners. These included catching a ball, throwing a ball, jumping and balancing. Importantly, the proportion of CHSA learners who were able to complete all the gross motor skills tasks were consistently higher than the proportion of learners in the CS. These findings are not surprising given that learners in the CS do not have access to the same playground equipment (like the jungle gym)

as CHSA learners. In this regard, the value of having access to such equipment is highlighted in the differences observed between the two groups. The children, aged 5, in the Hsaio (et al, 2016) study scored an average of 59% for gross motor skills.

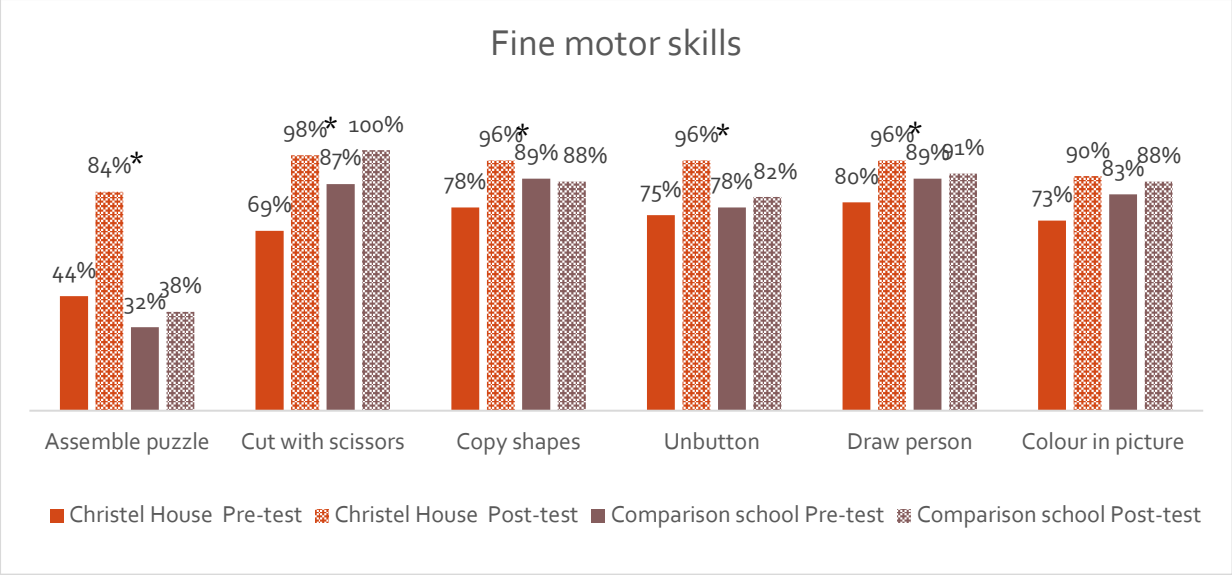


Graph 4: Average percentage of learners able to demonstrate gross motor skills assessments at baseline (Pre-test) and endline (post-test)

*Statistically significant difference between pre- and post- test (p<0,05).

5. Fine motor skills

A similar trend was observed in relation to fine motor skills, where CHSA learners showed significant improvements in 5 of the 6 fine motor skills. Evident in the graph below, this included being able to assemble a puzzle, cut with a scissor, copy shapes, unbutton a shirt, draw a person, and colour in a picture. Interestingly, while a higher proportion of learners in the CS were able to perform the respective tasks at baseline (with the exception of assembling a puzzle) when compared to CHSA, at endline, a higher proportion of learners at CHSA were performing these tasks appropriately (with the exception of cutting with a scissor). Further, a higher proportion of CHSA learners at baseline (44%) and endline (84%) were able to assemble a puzzle when compared to learners in the CS (baseline= 32%, endline=38%). The children, aged 5, in the Hsaio (et al, 2016) study scored an average of 33% fpr fine motor skills.



Graph 5: Average percentage of learners able to demonstrate fine motor skills assessments at baseline (Pre-test) and endline (post-test)

*Statistically significant difference between pre- and post- test (p<0,05).

6. Thoughts on the Grade RR programme

The final component of this study, explored qualitatively, was to ascertain learners' experiences and thoughts on the Grade RR programme offered at CHSA.

Dislikes

When asked about the things that they do not like or enjoy about their schooling, learners reflected on their experiences with their teacher and with the content presented in class.

Pertaining to teachers' relational style in the classroom, a few learners (n=5) disliked how their teachers engaged with them in the classroom. While learners described different events, their narratives place an emphasis on how the way their teachers spoke made them feel upset or unhappy. Two learners describe times where they felt their teacher was 'shouting' at them. Learners D3 and D14, for example, explained:

Participant D3

> *Interviewer: … Is there anything your teacher taught you, showed you or told you that you didn't like?*
>
> *Learner: Uhm …I… when you did something wrong= she is nice to somebody when they are by the board, but she never being nice to me when I was by the board.*
>
> *[…] Interviewer: Come sit, why didn't you like it?*
>
> *Learner: Because she was shouting at me.*
>
> *[…] Interviewer: What would you have liked her to do instead of shouting?*

Learner: I did tell her to be helpful and be in love. *[CHSA, D3]*

Participant D14

Interviewer: Is there anything your teacher taught you, showed you or told you that you didn't like?

Learner: I don't like shouting.

Interviewer: Your teacher shouts?

Learner: mmm…

Interviewer: And why didn't you like that?

Learner: She is screaming in my ears. *[CHSA, D14]*

Relatedly, two other learners felt unhappy about how their teachers spoke to them about the consumption of food offered by the school. For example:

Participant D2

Interviewer: Is there anything your teacher taught you, showed you or told you that you didn't like?

Learner: She tell me.

Interviewer: What did she tell you?

Learner: [Uhm]

Interviewer: What didn't you like that she told you?

Learner: Me, I must like porridge.

Interviewer: Oh, she told you to like porridge?

Learner: Yes.

Interviewer: Why did you not like that?

Learner: Because so… because so hot the porridge you are not going to eat it until done [the porridge is so hot that cannot eat it in a hurry]. If the others [are] done [then] only me, I am not done [with] the porridge.

Interviewer: And you don't like that?

Learner: Yes. *[CHSA, D2]*

Image 3: Participant D2 showing likes and dislikes

NOTE: The 'x' symbol reflects what participants **do not** like and the '√' indicates what participant like

Participant D12

Interviewer: Is there anything your teacher taught you, showed you or told you that you didn't like?

Learner: Yes.

Interviewer: What did she tell you?

Learner: If you don't like everything, she said you are going to like it. If you don't want food, she says "eat it!" *[CHSA, D12]*

In the first extract above, the learner explained that she feels rushed by the teacher to keep up with other learners' pace when eating food, which subsequently made her feel upset . This is also reflected in image 3. Similarly, the second learner (D12) explained that she feels forced by her teacher to eat the food provided by the school, even when she did not necessarily want to.

Although not representative of how all the learners felt about their teachers, the above extracts show the importance of a warm relational style for younger learners to feel valued and comfortable in their classrooms. As reflected by Learner D11, when her teacher told her not to make a noise in class, she felt unhappy "*because it makes me not want to come to the school*". This said, it is surely important that learners be corrected in the classrooms, but based on these subjective accounts, it is perhaps worth considering how this is done to avoid learners feel embarrassed or rejected.

For two learners, some of the content presented in the classroom were thought of as tedious. Learner D10, explained that she does not like learning about the months of the year because *"it was boring"* and would have preferred to be participating in painting instead. Similarly, Learner D15 reported that "*I didn't like writing on the board, colouring in and doing homework*". When asked to explain, she indicated: "*Because it was going to take forever*".

Furthermore, for the remaining number of learners, some did not report any dislikes (n=5), while others slightly misunderstood the question and rather described the things that they did not generally like: "I don't like guns; the make me sad" (D16) or "I will never play in the sandbox again" (D3- see image 1).

Likes

When asked about the things they enjoyed or their favourite thing that their teacher has taught or showed them, learners focused on the information they learned- and activities they did in their

classrooms. Some learners indicated that they enjoyed learning about "the calendar", as shown in the example below:

Participant D9

> *What is your favourite thing your teacher has taught or showed you this year?*
>
> *Learner: I like my teacher! She says now it's spring and the month is in November…*
>
> *Interviewer: So, you like…*
>
> *Learner: [Interjects] And today is Thursday but my teacher was saying today is Friday.*
>
> *Interviewer: It's not Friday today but Thursday.*
>
> *Learner: I know that! She said to me, I was saying "today is Thursday "and she said, "No you are lying not today is Thursday".*
>
> *Interviewer: You like learning the days of the week, the month, and seasons. Why did you like that?*
>
> *Learner: I like November and I like December. December is my mummy's birthday. That is why I like October, November, and December.*
>
> *Interviewer: Did you tell anyone else about that; you like learning about the days of the week, the month and seasons?*
>
> *Learner: Yes.*
>
> *Interviewer: What did you say about it?*
>
> *Learner: I said, "I like the days of the week" and my teacher said, "good girl!* *[CHSA, D9]*

Related to this, learners enjoyed learning about numbers, colours, different shapes, and new words. Other learners enjoyed the interactive activities, specifically drawing, reporting: "*my favourite thing… I like to draw"* (D16) and "*my favourite thing that my teacher said I can do is that… I can draw, see animals and I can draw somethings together when I am with somebody*" (D18).

Image 5: Participant D15 showing what she likes and dislikes

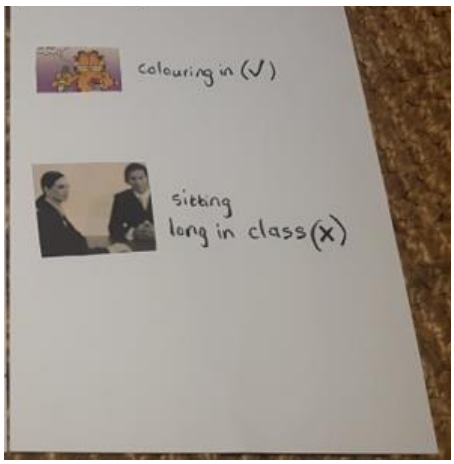
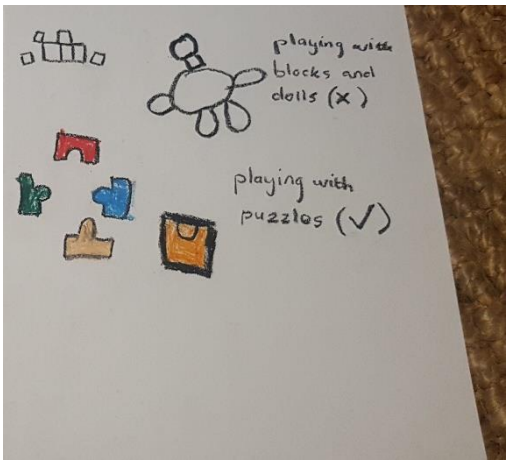


Image 4: Participant D17 drawing what she likes and dislikes



One learner also reported on the value of puzzles stating:

Participant D17

> *Learner: My teacher told me, "do you like to play with dolls?" and I said, "no." then she said do you like to play with blocks? And I said, "no". Do you like to play with puzzles? and I said "Yes."*
>
> *Interviewer: Okay, then puzzles and blocks, it's a yes …Okay sorry, you said no for blocks.*
>
> *Learner: Because puzzles let you learn everything.*

In all, this section highlights the value of an interactive and encouraging relational style to facilitate active engagement and a positive experience at school.

CONCLUDING COMMENTS

Overall, the results showed that, at baseline, 78% of CHSA learners and 79% of the CS learners had mastered the skills appropriate for their age group. We can infer that the learners from both schools were not different in overall development levels. At endline, 95% of CHSA learners and 91% of the CS learners had mastered the skills appropriate for their age group. For CHSA, learners' skills in 23 of the 24 assessments improved, while significant differences in skills were found for 15 of the 24 assessments. For the CS, learners' skills in 23 of the 24 assessments improved and significant differences in skills were found for only 9 of the 24 assessments. Thus, while learners in both schools made developmental improvements, the learners in CHSA made significant improvements in more areas than the comparison school. Given that the learners from CHSA tended to come from more economically disadvantaged homes, we can then conclude that the CHSA programme was successful given these significant improvements in learners' development. These findings are supported by the qualitative results.

The outcomes of this study thus offer support for the Grade RR programme to be continued at CHSA. There are however, two components that stood out, suggesting a closer investment is needed to ensure that learners are better able to follow instructions and respond to questions. The programme would thus benefit from a reflection exercise, together with teachers and curriculum experts, to understand how these components can be strengthened. It would also be useful to engage with teachers at the control school, who have several years' experience in delivering a Grade RR programme to learners from a similar demographic context, on strategies and approaches that are used to facilitate responsive conversations.

The findings pertaining to learners' experiences of the Grade RR programme also offers valuable insights into how the programme can potentially be strengthened. Children emphasised the need for positive engagement styles and creative activities to keep their attention in class. Importantly, one quarter of the participants did not report any dislikes related to the programme, while learners also recounted different components that they enjoyed in their classrooms. This, paired with the findings that all learners were able to name their school and their teachers, and that significant improvements in performance were observed for majority of the assessment criteria, is perhaps indicative of a positive general experience.

Moreover, this baseline study offers important avenues for additional longitudinal work with the study cohort. It is therefore recommended that a longitudinal study be administered to document the long-term outcomes) of this programme. This is a unique opportunity where various components of learner development can be comprehensively assessed over time, focusing on educational, psychosocial, livelihoods, relational, and physical aspects of development which are collectively important for overall wellbeing and success.

Limitations

As all research endeavours, this study is not without limitations. The smaller sample size and non-equivalent group means we cannot directly link the changes that we observed in the learners' development to exposure to the intervention. Many factors can cause a change that may not be accounted for and assumed to be due to the receiving the Grade RR programme. In addition, a suitable control group of learners who did not receive an early childhood development intervention could not be found. To this end, we cannot not assume causality.

Efforts were made, through school meetings and sending surveys home to parents, for parents or caregivers to complete surveys on behalf of their children. In addition to receiving fewer responses from parents at the comparison school, it was also unfortunate that the data collected during the CHSA parents meeting were initially misplaced. A second round of data collection was then initiated which yielded the findings presented in the study. The data collected through the parents did not have any impact on the learner assessments and the overall findings of the study. Finally, the study observed some attrition where 5 learners from Christel House and 11 from the comparison school did not participate in the post-test. This may have sewed the results especially for the comparison school. Endline data collection was conducted towards the end of the school year with the intention to assess learners after they were exposed to the full Grade RR programme. This proved challenging as many learners, particularly at the control school, were absent from school during this time. To mitigate this, the data collection period was extended into January 2023 which allowed us to assess a larger number of learners in the control school. Subsequently, the learners who completed assessments in 2023 were compared to those completed in 2022 and no differences were found between the assessment scores of these groups. This allowed us to include both groups as part of the comparison school.

In all, the few limitations described do not negate the positive outcomes observed in this evaluation study.

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