Literacy Assessment of P3 pupils in Charlene's Project Primary Schools, 2024

A report prepared by: Professor Frank Kee[1]

Dr Finnian Bannon[1]

Mr Benard Surungai[2]

Dr Laura Dunn[3]

1. Centre for Public Health, Queen's University Belfast
2. Charlene's Education Foundation
3. School of Social Sciences, Education and Social Work, Queen's University Belfast

Introduction

This brief report represents one of the three main "Deliverables" anticipated in the proposal made to the QUB ODA-International Strategic Partnerships Fund, as part of a developmental evaluation of Charlene's Project (CP) in Uganda. The specific planned output that is the focus of this report relates to a baseline literacy assessment among P3 pupils in the eight CP primary schools.

Over the last twelve years, since the establishment of this NGO, a cluster of eight neighbouring primary schools (seven government and one private) have been supported by CP in the rural Kiryandongo District of Uganda.

Educationalists working with CP have already made plans to support the continuing professional development of local teachers while assisting them in modernising their primary school literacy programmes. It was thus felt important, before new initiatives are launched in the schools, to establish a baseline measure of literacy levels.

Methods

Although there is a substantial academic literature on how literacy can be robustly assessed among primary school aged children, we wanted to align our approach with methods that were tried and tested and shown to be valid in LMIC settings and, in particular, those that were robust in a Ugandan setting.

Uwezo is a large Kampala based NGO (uwezouganda.org) that for more than a decade has been conducting robust community surveys of literacy, numeracy and life skills among young people across Uganda, Tanzania and Kenya. Their survey approaches are based on sound scientific and educational principles and have been reported through multiple publications [i,ii]

We engaged with Uwezo early in our design deliberations and found a willing partner. One of our team (Dr Chan) had worked with them in the past, and their Executive Director Dr. Mary Goretti Nakabugo, (recently appointed to the UNESCO Advisory Board on the Global Education Monitoring Report) had worked with QUB 15 years previously as part of an Irish Aid funded research capacity building study in East Africa (ref).

Generously, Uwezo offered to train CP teachers in literacy assessment methods for primary school year 3 (P3) children (mean age 11 years). Initially an all-day Zoom enabled training session was offered but this was also followed up a week later with a face-to-face training and Q&A session for teachers in the Kiryandongo region.

Best practice dictates that a child's own teacher should not be the assessor and so, with considerable investment in "project management", our local facilitator (Benard Surungai) divided the 8 schools into two zones.

A photo montage of these training events is included in Appendix 1. The Uwezo training session covered the use of their assessment instrument and all relevant aspects of quality assurance for "field assessments" including the use of a bespoke database for subsequent data capture that was broadly aligned to those used in their previous community surveys of young people in the same age groups. The training pack is included in Appendix 2.

It is important to note that the literacy survey instrument was not designed to be a faithful reflection of an individual's literacy capacity or their age appropriate deficits but rather to offer a community or school-class based *prevalence estimate* of literacy performance above or below given thresholds (e.g. letter recognition, word recognition, sentence comprehension etc) for a given population.

There was considerable discussion among Head Teachers and CP about how to maximise the survey sample, for in many districts of Uganda, the "enrolled" population of P3 pupils does not represent the number of regular attenders. Nevertheless, parents and guardians were given written notice of the intended survey dates in June 2024 in an effort to maximise attendance during the survey week. It was anticipated that the survey sample would not capture all enrolled P3 children. However, a number of considerations and implications were discussed: (1) it was recognised that the un-sampled children who were absent during the survey week were likely to be poor attenders and have the greatest literacy deficits and thus our literacy subsequent performance estimates could be viewed as an upper bound to the "true" achievement at a school level; (2) establishing this baseline could incentivise each school to make plans to undertake additional assessments of non-attending children in the community at a later date; (3) the learning gleaned from this exercise would assist CP in designing literacy programmes and establish a baseline against which their future impacts could be judged.

Typically, previous Uwezo surveys have used communities as sampling frames and have interviewed children in their own village and so it is important to highlight this difference in sampling procedures and the implications. (see later)

Paper records were initially collated by head teachers for each school. Project management, data entry and quality assurance were subsequently overseen by Mr Benard Surungai. Table 1, below, illustrates the final sample obtained.

Schools	Diika	Kothongola	Runyanya	Livingstone	Bunyama	Nyinga	Kahara	Kirwala
Enrolment - number of pupils								
Boys	122	74	68	130	32	50	21	59
Girls	130	52	62	140	20	48	18	45
Total	**252**	**156**	**130**	**270**	**52**	**98**	**39**	**104**
Survey sample - number of pupils								
Boys	71	49	56	107	25	46	21	59
Girls	81	40	54	86	15	47	17	37
Total	152	89	110	193	40	93	38	96
% Enrolled								
Boys	58.2%	66.2%	82.4%	82.3%	78.1%	92.0%	100.0%	100%
Girls	62.3%	76.9%	87.1%	61.4%	75.0%	97.9%	94.4%	82.2%
Total (% enrolled)	60.3%	57.1%	84.6%	71.5%	76.9%	94.9%	97.4%	92.3%

Clearly, the reach of the survey varied across schools, with a range of 57% in Kothongola to 97% in Kahara. There are likely many reasons for the lower reach in the P3 catchments of certain schools ("Implications" are discussed later) but within each survey there is a field – for each pupil assessed – to indicate whether that child was absent from the school on the previous day and whether the child declared any significant disabilities. These proportions are accounted for in the subsequent analysis (see below).

Statistical Analysis

The primary outcome of interest in the study was an ordinal reading score (S500 Basic Learning Levels - *Uwezo Reading Assessment Tool*) as follows (pupil number and percentage in that category within the sample of n=811): 1=non-reader (337, 41.6%), 2=letter (437, 53.9%), 3=word (33, 4.1%) 4=paragraph (<5, <0.5%), 5=story (<5, <0.5%). To simplify the analysis, the ordinal reading score was dichotomised and coded as follows: 1=non-reader (reading score 1), 0=reader (reading scores 2,3,4,5).

The proportion of non-readers was modelled using a mixed effects generalised linear model that was fit to the data, with binomial distribution and the logit link function, with fixed effect (*female pupil* and *age*, *years of pre-schooling*, *attended school yesterday*, disability [*seeing*; *hearing*; *walking*; *concentrating*]*, female assessor)*, and random effects (*assessor* and *school* as crossed-effects).

The final model retained *assessor* as a random effect (P<0.001, LRT), and *female pupil* (OR 1.37 95% CI 1.00-1.86; P=0.043; girls being more likely to be non-readers), *attended school yesterday* (OR 1.66 95% CI 0.99-2.74; P=0.05;), *years of pre-schooling* (OR zero versus one year pre-schooling 0.45 95% CI 0.26-0.80; P=0.004; those who attended some pre-schooling being less likely to be non-readers) fixed effects. Figure 1 output graphs show the variation in *proportion of non-readers* by *years of pre-schooling*, each with a 95% confidence interval (CI) indicating the background noise in the individual *p* estimates. The funnel plot in Figure 2

shows large variation in the predicted *proportion of non-readers* between assessors, though not much evidence of 'hawk' or 'dove' assessors, that is, none exceeding the 99.8 control limits. Figure 3 presents the variation in observed *proportion of non-readers* by school, though in the fully adjusted mixed effects model there was no significant variation in random effect of school.

Figure 1: The estimated* proportion of non-readers (with 95% CI) by the number of years of pre-schooling the pupil had received
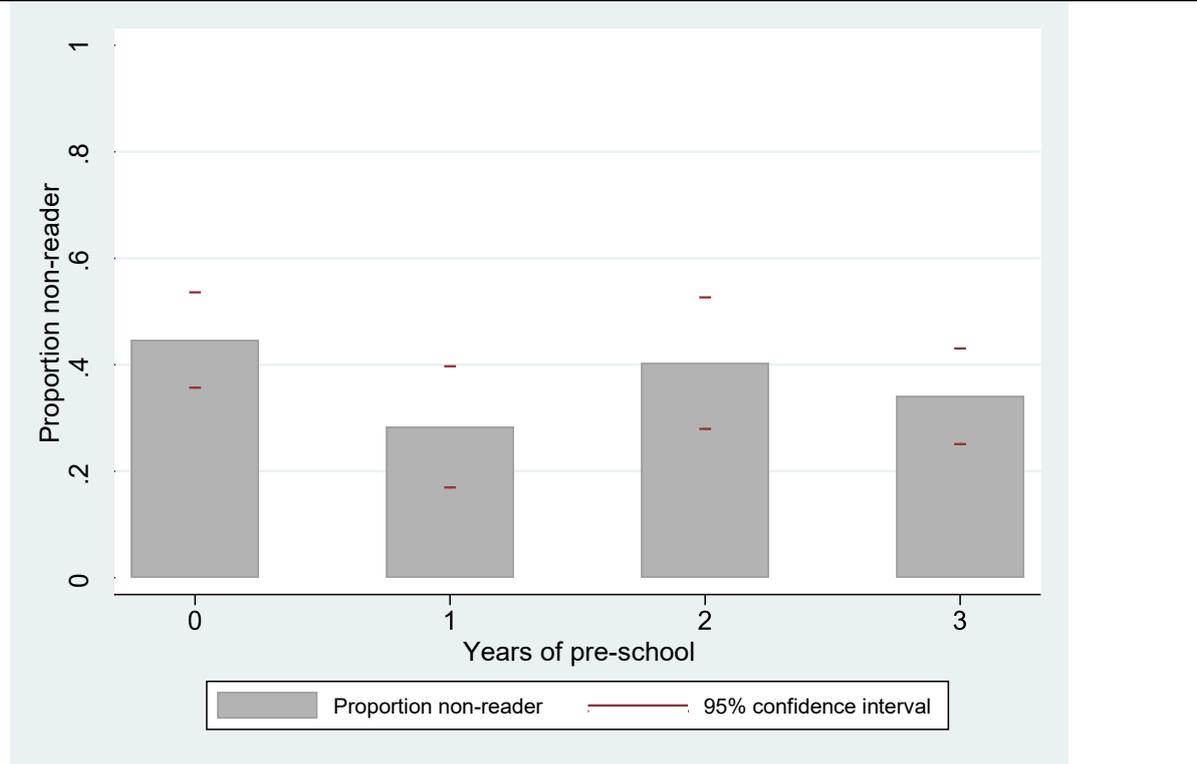

*Model adjusted for the random effect for *assessor*

Figure 2: Funnel plot with estimated* proportion of non-readers (with 95% CI) by assessor plotted against precision, with 95% and 99.8% control limits superimposed
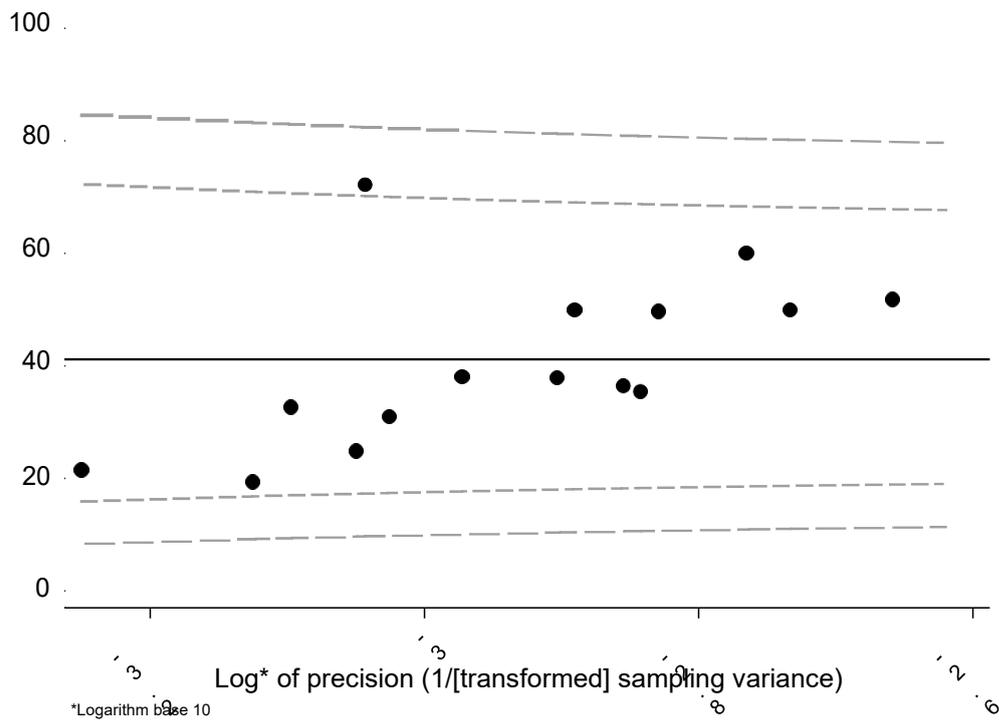
*The estimated proportion of non-readers by assessor is predicted when the fixed portion of the model is constant at the reference level of the fixed effects (i.e. boys with no-preschooling who did not attend the day before). Two sources of variation in *proportion of non-readers* are considered in construction of the control limits, i) the sampling variation, a function of the number of pupil's each assessed per assessor, 2) random effects variation of assessors which was assumed to be normally distributed. Winsoring at 5% was performed to protect the variation of the random effects against outliers.

Figure 3: The observed proportion* of non-readers (with 95% CI) by school
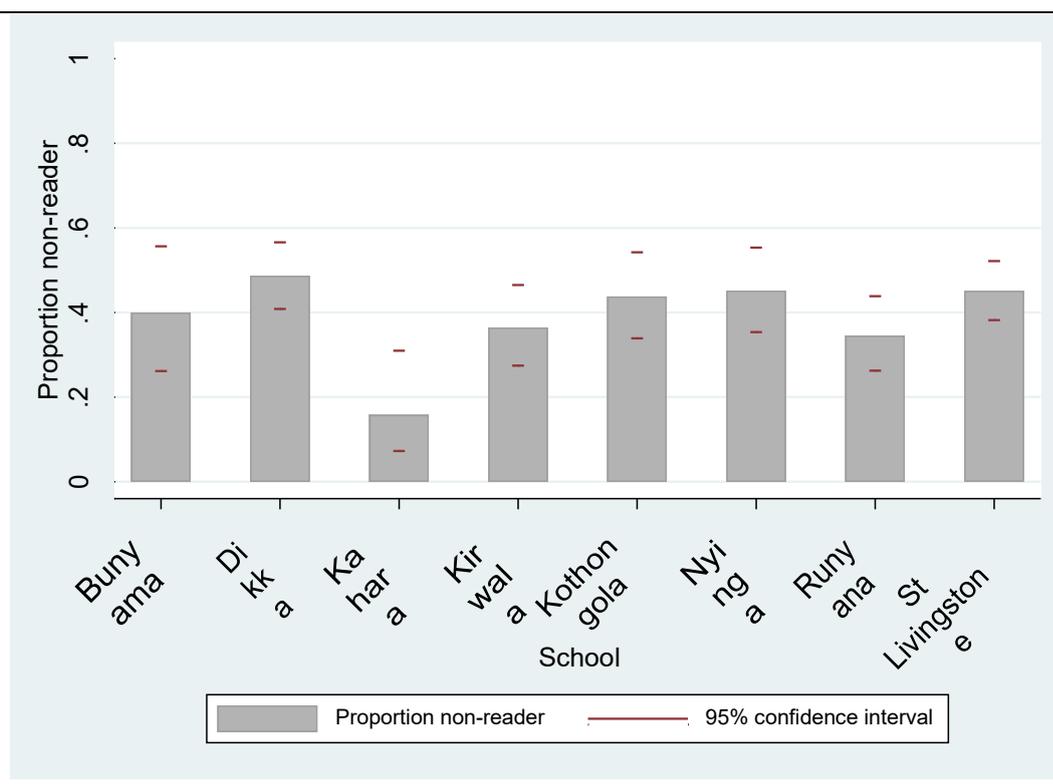
*The differences in observed proportions of non-reader pupils between schools will be due to the case-mix variation in *assessors*, *female pupil*, *preschooling years*, and *attendance at school the day before* between schools. In the fully adjusted mixed effects model, which standardizes for case-mix effects, the variation in proportion of non-reader pupils between schools was very low and not significant.

Discussion

This is the first time that a formal assessment of literacy among P3 pupils has been undertaken in CP primary schools. Among those surveyed, the proportion of such children who were deemed at "non-reader" stage is nearly two times higher than found in larger Uwezo national surveys (based on community sampling and assessment) where the proportion of "non-readers" in 2021 among P3 pupils in Uganda was 25.1%. Whilst we note that past Uwezo reports have identified a nearly two-fold variation in literacy levels across Ugandan regions, this is the first such survey in the Kiryandongo district.

Nevertheless, these comparative figures are only offered as a broad benchmark for a formal statistical comparison (with Uwezo data) is not warranted for a number of reasons. Firstly, the mechanism for sampling and assessment in past Uwezo surveys was based in the community, rather than at school level. Secondly it is likely that literacy levels among "enrolled" pupils who were absent from school during the survey week are lower than among "attenders" and this may mean that our estimates (of non-reader proportions) among CP pupils represent a lower bound. Further efforts to survey the children who were not at school during this survey period should be made and our estimates could then be updated.

While we found some variation in p at school level, this was not significant. There was, however, a statistically significant variation across assessors. All assessors undertook the same Uwezo training sessions but there may be scope for further training before subsequent survey activity. Alternatively, CP may consider incorporating some of this training in curricular and professional development activities related to literacy in all CP schools. In addition, CP may explore, with Uwezo, the level of inter-assessor variation that is typical in their larger national surveys.

At the broadest of levels, our data speak to the need for a continued focus on improving literacy attainment in CP primary schools. However, the data do not suggest the best ways or literacy programmes that can achieve this. Recent academic work from (Mugendawala et al)[iii], using the rich Ugandan data from the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) database project III has shed some light on potential ingredients for success. The SACMEQ data derive from responses from Grade 6 learners, teachers, and head teachers from public primary schools. It contains observations on pupil, teacher, head teacher, and school characteristics a sample consisting of 5,307 Grade 6 pupils drawn from 316 classrooms in 264 primary schools in Uganda. In addition, 264 head teachers and 274 teachers were sampled and surveyed. From their state-of-the-art multi-level model, the authors were able to highlight the importance of *contextual* variations and educational process variables that differentiated between the highly effective and the least effective schools. Among the most important of these was "opportunity to learn" (OTL), the results showing that teachers who provide more opportunity for pupils to learn are more likely to influence performance of learners positively, in line with other studies showing that OTL dimensions such as the amount of time that teachers spend on curriculum-related instruction, lesson planning, correcting homework, and feedback are

associated with positive learning outcomes. The same study also highlighted the importance of effective school management processes and strong school community relationships.

Thus, whatever literacy programmes are instigated in CP schools in the coming years, head teachers and school management committees should consider appropriate monitoring of these "delivery" and "process" facets of implementation.

Acknowledgements

This report would not have been possible without the hard work and dedication of the Head Teachers and their teams in each school and Mr Benard Surungai who together collectively planned and managed the undertaking the survey in June 2024.

We are also very grateful for the generous guidance, support and training offered by Uwezu.

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[i] Nakabugo, M. G. (2015). Towards equitable quality basic education in Uganda: insights from Uwezo learning assessment data. J. Int. Cooperat. Educ, 17, 23-35.

[ii] Nakabugo, M. G. (2021). Uwezo citizen-led assessments: Inspiring debate about children's learning and holding governments accountable. Language and the sustainable development goals, 49-55.

[iii] Mugendawala H, Muijs D. Educational process factors for effective education in resource-constrained countries: a multilevel analysis. SCHOOL EFFECTIVENESS AND SCHOOL IMPROVEMENT https://doi.org/10.1080/09243453.2019.1702562.

APPENDIX 1

Figure 1. **Teacher ASABA JOYCE assessing a p3 pupil in Kahara p/s**

Figure 2. **Group of teachers from zone B at Kahara p/s**

Figure 3. Attendance list for teachers from zone B

Figure 4. Pupils in a p3 class in Nyinga p/*s***

Figure 5. P3 class at DIIKA P/S

UWEZO UGANDA

2024

Charlene's Project
Baseline Assessment

ASSESSOR
WORKBOOK

uwezo
UGANDA

Charlene's
project.org
'Creating better futures'

Table 1: Assessor Training Programme

Time/Date	Topic
02:00 - 02:10pm	Welcome remarks and training objectives
02:10 - 02:20pm	Brief introduction to Uwezo learning assessments & tools
02:20 - 03:00pm	Steps for assessing children in literacy: Uwezo reading assessment flow-chart
03:00 - 03:10pm	What is a mistake and what is not a mistake in reading
03:10 - 03:30pm	Q & A session (plenary)
03:30 - 04:00pm	Recording Assessment data
04:00 - 04:45pm	Break out sessions-(3-4 groups)-one on one sessions with Uwezo team
04:45 - 05:00pm	Conclusion and way forward

Contents

1. ABOUT UWEZO AND THE PARTNERSHIP WITH CHARLENE'S PROJECT

Uwezo, a Swahili word which means 'capability', is an independent, not-for-profit organisation, registered and operating in Uganda since October 2019. Uwezo envisions a society in which all children are learning and realising their full potential.

Previously, Uwezo operated as a programme of Twaweza East Africa, a regional organisation which works on enabling children to learn, citizens to exercise agency and governments to be responsive to citizens' demands in Kenya, Tanzania and Uganda since 2009.

Uwezo's main function has been to generate and curate evidence on learning outcomes and use it to engage with policy actors and citizens to address the learning crisis.

Uwezo has used the approach pioneered by the Annual Status of Education Report (ASER) in India, in which trained citizen volunteers carry out learning assessments and obtain other relevant data, in the household or community setting, from large, nation-wide samples of children.

To mobilise volunteers, Uwezo collaborates with district-based local organisations that broadly represent civil society.

Currently, Uwezo Uganda is committed to deliver on three strategic goals to address the main problems related to low and inequitably distributed learning outcomes in Uganda:

1. To produce independent evidence on the learning levels of children and young people, their distribution and factors associated with them

2. To carry out research and promote innovations that have the potential to improve the level and distribution of learning outcomes in basic education
3. To engage with policy actors and with the public to influence and promote policies and practices for improved and more equitable learning outcomes

It is on the basis of Uwezo's expertise in monitoring learning outcomes that it has partnered with Charlene's project to support generation of baseline assessment data in schools benefiting from Charlene's project.

About Charlene's Project

Charlene's Project was started by Charlene Barr, from Northern Ireland, during her terminal illness when she had to drop out of school due to failing health. She made the decision to raise money to build a primary school in Uganda but sadly never saw the school completed as she passed away in 2010. The school was completed and Charlene's Project to date continues in her memory. Operating in Kiryandongo District since 2012 the project operates through a Ugandan CBO, Charlene Education Foundation, with a cluster of 8 neighbouring primary schools, helping with capacity building and infrastructural development. Charlene's project also operates a secondary school with almost 600 pupils up to A- level in attendance. Beyond the education sector, Charlene's project has commissioned and handed over to the local government a health centre.
Charlene's project is currently undertaking a research on completing a Theory of Change – taking community feedback, on the perceived impact of Charlene's Project on educational and community development and have further identified the need to support early years literacy/phonetics in the 8 primary schools. A baseline assessment before taking forward plans for the early years literacy/phonetics support in the schools has been planned hence the partnership with Uwezo Uganda to assess literacy skills for children in the charlene project schools.

2. LITERACY ASSESSMENT EXPLAINED

2.1 HOW TO ASSESS THE CHILDREN

It is important that before the assessment you practice reading out loud the words, paragraphs, story and comprehension questions. This will enable you get familiar with the pronunciations and expected answers. This is best practiced in pairs.

> ### Key Concept
>
> The focus of the assessment should be on finding out what children can comfortably do in terms of reading.

- Have a friendly chat with the child before assessing him/her. This will help to create a relaxed atmosphere. It is important that you let children feel comfortable before starting the assessment process.

It is essential that children are relaxed and not worried about how they are going to perform.

- Often, other children may gather to watch what the child is doing. Speaking to the child in a friendly and encouraging way will help the child to be more relaxed.

- Be patient and give children adequate time and opportunity to answer questions. Do not choose which questions the child should answer.

- Remember that you are not waiting to catch mistakes. You should appreciate the attempt the child is making.

- When assessing literacy, start assessing at the lowest level and carefully adhere to all instructions indicated in the assessment pack and the recording sheet.

- Accurately decide what the HIGHEST LEVEL is that the child can reach comfortably.

The purpose of the assessment is to obtain the HIGHEST LEVEL at which the child can comfortably perform the given tasks. You may need to take a child through a series of tasks until you decide the highest level the child has achieved.

2.1.1 KEY THINGS TO NOTE ABOUT ASSESSING THE CHILD

1. At each level, a child shall be given two chances to answer questions before you decide to move on or terminate at that level.

2. Children will start answering questions at the lowest level progressing till they reach the highest level they can read.

3. The child shall be graded based on the highest level achieved.

4. The child should be given the test sheet to hold while reading.

5. You should not put marks on the children's work to show them whether they have got it or not. You should be familiar with the answers and avoid marking within the assessment sheet.

2.2 LITERACY ASSESSMENT LEVELS AND HOW TO GRADE

1. At letter/word level the child should be allowed to select and read 5 options. The child should correctly read at least 4 of the options selected to be considered at this level. The child should be given a second chance to attempt the words or letters if she or he fails to correctly read at least 4 options in the first attempt.

2. At the sentence or paragraph level the child should be allowed to choose the first or the second paragraph to read. When doing so he or she is allowed only two mistakes at most. If he or she makes more than 2 mistakes, give a second chance to the child to read before deciding if the child can or cannot read at paragraph level.

3. At story level the child is allowed to make not more than four mistakes. If the child makes more than 4 mistakes give a second chance before deciding if s/he can or cannot read a story.

4. Children will only be asked to answer the comprehension questions if they can correctly read the story.

Please note:

1. Mistakes include word omission, skipping of words, or reading a sentence as a string of words.

2. Do not penalise mother tongue influence.

3. If the child cannot read the first sentence, ask the child to read the sentence again. If the child cannot read it on the second attempt, grade the child and move on.

4. Only children who read the story successfully should be asked to answer the comprehension questions. The child can refer to the story to answer the questions.

2.2.1 FREQUENTLY ASKED QUESONS

Q: When I listen to a child read, there are variations in pronunciation due to the child's local language /mother tongue. Do I consider these variations a mistake?

A: No, do not consider this a mistake. Ask the child to read again carefully.

Q: When listening to the child read, they may read a word wrong or skip a word. Do I consider this a mistake and grade the child in a lower category?

A: No, as with the case above, ask the child to read again carefully. Either he/she will read correctly or he/she will continue to make the same mistakes. If they do continue to make the same mistakes, miss words out or read a word wrong, then this means that the child is having difficulty reading at that level and must be graded at the lower level.

Q: When reading a paragraph or a story, how many mistakes are allowed?

A: Paragraph level: If the child makes 3 or more mistakes, they are not competent at this level . They must therefore be graded at the word level.

Story Level: If the child makes 5 or more mistakes, they are not competent at this level. They should therefore be graded at paragraph level.

ASSESSING LITERACY

START

Present the child with the literacy assessment. Ask the child to read any five letters /sounds from the letter recognition list. Can the child recognise at least 4 letter / sounds?

YES

NO

If the child cannot recognise four letters or sounds, YOU MAY RATE THIS CHILD AT A 'NON-READER' LEVEL

Ask the child to read any five words from the word list. Can the child read at least four words?

NO

YOU MAY RATE THIS CHILD AS A 'LETTER' LEVEL CHILD

YES

Present the child with one of the two simple paragraphs to read. Can the child read this paragraph fluently, and without making more than two mistakes?

NO

YOU MAY RATE THIS CHILD AS A 'WORD' LEVEL CHILD

YES

Ask the child to read the story. Can the child read the story with ease and speed without making more than 4 mistakes?

NO

YOU MAY RATE THIS CHILD AS A 'PARAGRAPH' LEVEL CHILD

YES

YOU MAY RATE THIS CHILD AS A 'STORY' LEVEL CHILD

After listening to the child read the story, read out the questions to him / her, does the child answer the questions correctly?

YES

Mark 'Can do' in response to each question

NO

Mark 'Cannot do' in response to the question

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