INNOVATION EDGE HOME LEARNING ENVIRONMENT INTERVIEW TECHNICAL MANUAL

Compiled by Andrew Dawes, Matthew Snelling, & Linda Biersteker

Introduction
In this document, we describe the development of the Innovation Edge Home Learning Environment (IE-HLE) interview, and provide indicators and measures for use in research and programme evaluation. We also provide recommendations for an IE-HLE Multi-indicator Index comprising three indicators.

Background
The relationship between children's home environment and children's cognitive development and school achievement is well established. Family socio-economic status and caregiver education are particularly powerful predictors of these outcomes, as is the quality of stimulation provided to preschool children by caregivers and other household members during early childhood (Barnett, 1998; Bradley & Caldwell, 1984; Bradley & Corwin, 2002; Burger, 2012; Duncan & Magnuson, 2013; Taylor & Yu, 2009; Tran, Luchters & Fisher, 2017).

A number of tools are available for the measurement of the home learning environments of young children. Prominent among them and widely used in research studies is the Home Observation for Measurement of the Environment (H.O.M.E.) (Bradley, Corwyn, McAdoo & García Coll, 2001; Bradley, 2012). Another is the PICCOLO (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes) (Roggman, Cook, Innocenti, Jump Norman & Christiansen, K. (2009; 2013). Both have been used in South African programme evaluations (e.g. Dawes, Biersteker & Hendricks, 2012; Biersteker & Dawes, 2016). Both tools require a trained fieldworker to visit the child's home and observe interactions between the child and caregiver as well as recording the availability of early learning resources (such as books).

Where home observations are not feasible (for example in large scale surveys in which child level data is captured in preschools and other early learning programme sites), interview methods are an alternative. Here data is gathered on household demographics and the early learning resources and activities to which young children are exposed at home. Innovation Edge has developed the Innovation Edge Home Learning Environment (IE-HLE) tool for use in South Africa and the region. It is provided in the Appendix to this document.

The IE-HLE draws on the UNICEF MICS and the Melhuish HLE tool (Melhuish; 2010; Melhuish et al., 2008). These include a limited number of items used in the H.O.M.E. but adapted for questionnaire administration. The Early Childhood H.O.M.E includes eight subscales that measure the availability of learning materials, the physical environment, and the quality of the caregiver's relationship with and stimulation of the child. The instrument requires lengthy observation of the child's home environment by trained observers.

The IE-HLE is designed for brief interviews with primary caregivers by persons not trained to undertake detailed home observations.

Development

As an instrument appropriate for brief caregiver interviews was needed, the IE-HLE drew on two well-recognised sources: an instrument developed by Melhuish and colleagues in the United Kingdom (Melhuish, Phan, Sylva, Sammons, Siraj-Blatchford Taggart, 2008; Melhuish, 2010); and the Early Childhood Development module of the UNICEF Multiple Indicator Cluster Survey For Children Under Five (MICS: https://mics.unicef.org). As will be evident in Table 1, apart from caregiver biographic information, the IE-HLE includes two additional items that are not present in the other two instruments: *time for activities with the child during the week and in the weekend.* These items were added as the time available to caregivers is likely to influence their ability to engage in the activities measured in the tool. Caregivers with very little time in the day are unlikely to be able to engage in stimulation activities at home even if they wish to.

In addition, some of the original items were adapted. The MICS item "*Spent time with (name) Naming, Counting, and / or drawing things*?, and the Melhuish (2010) item "*How often has the child played at recognising letters, words, shapes or numbers in last week*?" combine these areas of early learning into one question. For the IE-HLE, as we were interested in the amount of activity in each learning area, we created three specific items to capture each activity. In addition, there are variations in scoring on comparable items.

Early Learning Resources module:

> The MICS scores the number of books from 0-9 and for ten or more an additional point is awarded, Melhuish (2010) has five weighted categories (score 0 for no books; score 2 for 1-10 books; score 4 for 11 to 20 items; score 5 for 21 to 30 books; score 7 for 30 + books); the IE-HLE simply captures the total number of books. On the other Resources items, MICS and IE-HLE use the same dichotomous scale (Yes / No). These are not included in the Melhuish (2010) HLE.

The Activities module:

- Melhuish (2010) uses 7 points to represent each day of the week, while MICS uses a dichotomous scale (Yes / No). The IE-HLE has three values (Never = 0, Sometimes = 1, Many Times = 2). Three (albeit coarse) values for the IE-HLE were used because our experience in South Africa is that it is often difficult to obtain more precise recollections on each day of the week, and in any event we would not be sure of their reliability. We recognise that this is less desirable from a scale construction point of view than seven points, as the range is more restricted.
- The MICS item "*Spent time with (name) Naming, Counting, and / or drawing things*?, and the Melhuish (2010) item "*How often has the child played at recognising letters, words, shapes or numbers in last week*?" combine activities. For the IE-HLE, and as we were interested in amount of activity in each area, these were separated into three specific items.

Table 1: Comparison of the Melhuish HLE (2010), MICS, and IE-HLE items

MELHUISH HLE ITEMS	UNICEF MICS-4 ITEMS	IE-HLE ITEMS
TIME FOR ACTIVITIES WITH THE CHILD		
N/A	N/A	1.6.1: How much time do you have between Monday and Friday to play with, read to and talk with your child? {SCORING: very little (>1 hour) = 1; some (2 hours) = 2; Lots (>2 hours) = 3}
N/A	N/A	1.6.2: NOW, think about the weekend.

		On the weekend, how much time do you have to play with, read to and talk with your child? {SCORING: very little (>1 hour) = 1; some (2 hours) = 2; Lots (>2 hours) = 3}
EARLY LEARNING RESOURCES		
About how many children's books do you have in your home at the moment, including library books, that are aimed at children under 5? (SCORING: 0 = none; 2 = 1 to 10 items; 3 =11 to 20 items; 4 + – 21 to 30 items; 7 – 30 + items)	How many children's books or picture books do you have for (name)? (SCORING: none = 0; 1-9 = the number; ten or more = 10)	2.1.1: How many children's books or picture books do you have for *(child's name)*? (SCORING: total number of books)
N/A	Homemade toys (such as dolls, cars, or other toys made at home)? (SCORING: YES = 1; NO = 0)	2.1.2: Homemade toys (such as dolls, cars, or other toys made at home)? (SCORING: YES = 1; NO = 0)
N/A	Toys from a shop or manufactured toys? (SCORING: YES = 1; NO = 0)	2.1.3: Toys from a shop or manufactured toys? (SCORING:YES = 1; NO = 0)
N/A	Household objects (such as bowls or pots) or objects found outside (such as sticks, rocks, animal shells or leaves)? (SCORING: YES =1; NO = 0)	2.1.4: Household objects (such as bowls or pots) or objects found outside (such as sticks, rocks, animal shells or leaves)? (SCORING:YES =1; NO = 0)
ACTIVITIES		
SCORING ALL ITEMS 0-7 (N days / week) In last week:	SCORING ALL ITEMS YES =1; NO = 0 In the past 3 days, did you or any household member over 15 years of age engage in any of the following activities with (child)	SCORING ALL ITEMS *NEVER HAPPENED* = 0; H*APPENED SOMETIMES* = 1; *HAPPENED MANY TIMES* = 2 In the past week, how often did you or any household member:
how often do you/partner look at books with child or read stories with him/her in last week?	Read books to or looked at picture books with (name)?	2.2.1: read books to or look at picture books with (child's name)?
N/A	Told stories to (*name*)?	2.2.2: tell stories to (child's name)?
how often do you/partner recite nursery rhymes or sing songs with child in last week?	Sang songs to (*name*) or with (*name*), including lullabies?	2.2.3: sing songs to (child's name) or with (child's name) including lullabies (songs when the child is going to sleep)?
N/A	Took (*name*) outside the home, compound, yard or enclosure?	2.2.4: take (child's name) outside the home, compound, yard or enclosure?
N/A	Played with (*name*)?	2.2.5: play with (child's name)?
how often has the child played at recognising letters, words, shapes or numbers in last week?	Spent time with (name) Naming, Counting, and / or drawing things?	2.2.6: tell (child's name) the names of things?
how often has the child played at recognising letters, words, shapes or numbers in last week?	Spent time with (name) Naming, Counting, and / or drawing things?	2.2.7: count things with (child's name)?
how often has the child done activities involving painting or drawing in last week?	Spent time with (name) Naming, Counting, and / or drawing things?	2.2.8: draw or paint things with (child's name)?

Approaches to the use of IE-HLE items
IE-HLE items can be used separately or combined to form scales.

Using the Caregiver Time for Play Activities with the Child items separately

It may be helpful to have a gauge of the availability of caregivers' time for play with their children as this will be likely to moderate their opportunity to engage in the activities specified in the IE_HLE.

Also, parenting programmes need to be sensitive to the amount of time caregivers have to implement what they may have learnt in the programme. Limited caregiver time may be common in South African low income families. For example, the Early Learning Programme Outcomes (ELPO) study which included children from low income households, found that on average, caregivers had two hours or less available for activities with their children over the course of the entire week (including the weekend) (Dawes, Biersteker, Girdwood, Snelling, & Horler, 2020). In that study, there was no relationship between this measure (for either the week or weekend) and ELOM Total scores at endline. The restricted range in time available in this sample may have played a role in this finding.

For reporting purposes, separate scores for the amount of time caregivers report having for playing, reading, and talking to their child during the week and the weekend (HLE items 1.6.1 and 1.6.2 respectively) can be used as follows:
- Indicator: Caregiver Time for Play Activities with the Child.
- Measure: Proportions of caregivers reporting less than 1 hour, about 2 hours or 3 or more hours:
  a. during the week
  b. during the weekend.

For the Activities items 2.2.1-2.2.8, the following may be used in reports:
- Indicator: Frequency of caregiver participation in activities with the child.
- Measure: The proportions of caregivers who a) never, b) sometimes or c) often engaged in each activity in the past week.

Using the Early Learning Resources items separately
Caregiver responses to items 2.1.1 (number of books), and 2.1.2, 2.1.3, and 2.1.4, can each be described separately for groups of caregivers.
- Indicator: Early literacy resources (item 2.1.1).
- Measure: The average number of children's books or picture books.
- Indicator: Basic early learning equipment (items 2.1.2, 2.1.3, and 2.1.4}.
- Measure: The average number of resources (scores on items 2.1.2, 2.1.3, and 2.1.4 summed.

The IE HLE scales
Where multivariate analyses are being undertaken it is helpful to reduce the number of variables as their number affects study power and the number of participants required for the study. To this end, psychometric analyses were conducted on IE-HLE data collected in the ELPO Study [1] using 327 caregiver interviews.

The IE-HLE Early Learning Activities Scale
Principal Component Analysis was used to determine whether the eight activities items could be combined into a single Factor to constitute this scale. As is evident in Table 2, preliminary analysis indicated that all items correlated with at least one other item at the level of .30 or greater (as required in this procedure).

---

[1] Dawes, A., Biersteker, L., Girdwood, L., Snelling, M. & Horler, J. (2020). The Early Learning Programme Outcomes Study. Technical Report. Claremont Cape Town: Innovation Edge and Ilifa Labantwana. The summary of the study report can be accessed here and the full ELPO Technical Report here.

Table 2: Activities Items Correlation Matrix

**Correlation Matrix[a]**

		Activities_Rea dBooks	Activities_Tol dStories	Activities_San gSongs	Activities_Out side	Activities_Play	Activities_Na mes	Activities_Cou nt	Activities_Pai ntDraw
Correlation	Activities_ReadBooks	1.000	.419	.048	.258	.254	.173	.185	.199
	Activities_ToldStories	.419	1.000	.117	.310	.222	.110	.138	.188
	Activities_SangSongs	.048	.117	1.000	.189	.022	.397	.232	.299
	Activities_Outside	.258	.310	.189	1.000	.262	.297	.240	.286
	Activities_Play	.254	.222	.022	.262	1.000	.308	.277	.282
	Activities_Names	.173	.110	.397	.297	.308	1.000	.525	.452
	Activities_Count	.185	.138	.232	.240	.277	.525	1.000	.499
	Activities_PaintDraw	.199	.188	.299	.286	.282	.452	.499	1.000
Sig. (1-tailed)	Activities_ReadBooks		.000	.193	.000	.000	.001	.000	.000
	Activities_ToldStories	.000		.017	.000	.000	.023	.006	.000
	Activities_SangSongs	.193	.017		.000	.349	.000	.000	.000
	Activities_Outside	.000	.000	.000		.000	.000	.000	.000
	Activities_Play	.000	.000	.349	.000		.000	.000	.000
	Activities_Names	.001	.023	.000	.000	.000		.000	.000
	Activities_Count	.000	.006	.000	.000	.000	.000		.000
	Activities_PaintDraw	.000	.000	.000	.000	.000	.000	.000	

a. Determinant = .206

The determinant (a) below Table 1 (alongside visual inspection of the correlation matrix) indicated no multicollinearity (greater than 0.00001). In addition, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found it to be adequate at .767 (it must be >.60). Bartlett's Test of Sphericity must be significant, and this is the case (P < .001).

Visual inspection of the Scree Plot (Figure 1) indicated one or two factors present in the data.

Figure 1: IE HLE Activities Scree plot
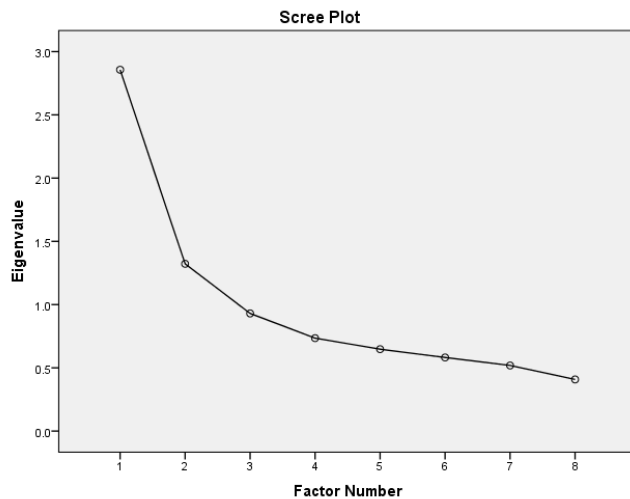
As it was desirable to have a single factor, that solution was tested and was found to be consistent and reliable. The factor matrix below indicates that all activities items loaded on a single factor at a level greater than .35 (above the minimum recommended level of 0.30)[2].

---

[2] Goldberg, L. R., & Velicer, W. F. (2006). Principles of exploratory factor analysis. In S. Strack (Ed.), *Differentiating Normal and Abnormal Personality*: Second edition. New York, NY: Springer. (pp. 209-237).

Factor Matrix[a]

	Factor
	1
Activities_ReadBooks	.383
Activities_ToldStories	.363
Activities_SangSongs	.384
Activities_Outside	.487
Activities_Play	.449
Activities_Names	.687
Activities_Count	.644
Activities_PaintDraw	.660

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 5 iterations required.

Item-Total Statistics are presented in Table 3 below, and suggest that all meet the minimal Item-Total Correlation of 0.30. The "*Alpha if Item Deleted*" column indicates that there would be no meaningful benefit to the removal of any item.

The resultant *Early Learning Activities Scale* is unidimensional and has sound reliability (Cronbach's alpha = .726, p<.001). This level of reliability is acceptable for a measure of this type (the coefficient value should equal or exceed 0.70).

Table 3: Activities Item-Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Activities_ReadBooks	7.4373	7.958	.353	.224	.711
Activities_ToldStories	7.4557	7.924	.351	.236	.712
Activities_SangSongs	7.5688	7.626	.300	.205	.730
Activities_Outside	7.1835	7.512	.436	.205	.695
Activities_Play	6.8165	7.972	.370	.199	.708
Activities_Names	6.9755	7.496	.557	.417	.674
Activities_Count	6.9908	7.604	.502	.369	.683
Activities_PaintDraw	7.2630	7.170	.532	.342	.674

Further analyses using the ELPO study data, were undertaken to examine whether scores on this scale predicted ELOM scores. When combined with other variables in the study for purposes of multi-level modelling (MLM), no relationship was evident.

Independently of the MLM, bootstrapped Pearson correlations were also run on the relationship between the IE-HLE Activities Scale and endline ELOM Total and domain scores. A small but statistically significant relationship was observed between the Activities Scale and ELOM Total scores (r = .169, p<.01), weakly relationships with the Emergent Language and Literacy (ELL) (r = .165, p<.001), Emergent Numeracy and Mathematics (ENM) (r = .160, p<.01) and Fine Motor Coordination and Visual Motor Integration (FMC&VMI) (r=.136, p<0.01) domains.

To investigate the influence of third variables on this relationship, partial correlations controlling for child age, ECD site quintile and caregiver education were run (separately in each case), were of a similar order suggesting that none of these variables was contributing much to this relationship.

It is possible that the restricted range in education and socio-economic background of the ELPO study participants has contributed to these findings. Different results may be obtained from a sample with a wider range of education and socio-economic status.

Despite these observations, the psychometric analysis reported here shows that Innovation Edge HLE items 2.2.1. – 2.2.8 form a reliable and valid <u>Early Learning Activities Scale</u>. As all the items load on a single factor, scores on Items 2.2.1 – 2.2.8 can be summed and the total score used in analyses (items are each scored: Yes = 2 & No =1).

The IE-HLE *Early Learning Opportunity Scale*

This scale, also developed for the ELPO study combines IE-HLE Activities Scale items (2.2.1 – 2.2.8) with Caregiver Time for Activities with the Child in the week and weekend (items 1.6.1 and 1.6.2) to form a single factor that is unidimensional and has sound reliability (Cronbach alpha = .800, $p<.001$). In the ELPO study, it did not predict ELOM Total or Domain scores. This is perhaps surprising (the score range was good and was not skewed (skewness = .323, Mean = 4.97 SD 2.089).

Through examination of several possibilities, a reliable single factor scale for the combined items was achieved by weighting the caregiver time estimates for the week and weekend as follows:

a) The sum of the scores for frequency of engagement between the caregiver and the child on the 8 activities items (2.2.1- 2.2.8) is divided by the maximum possible score (16).

b) Caregiver Time for Activities with the Child in the week and weekend (items 1.6.1 and 1.6.2): Options for these items are a) *very little time < 1 hou*r (score 1); b) *some time (about 2 hours (score 2),* and c) *lots of time >2 hours* (score 3):

- All 9 possible responses to this item were ranked to form an ordinal scale running from 1 (I spend less than 1 hour playing with my child during the week, and less than 1 hour playing with my child during the weekend) to 9 (I spend greater than 2 hours playing with my child during the week, and I spend greater than 2 hours playing with my child on the weekend).
- The rest of the scores reflected combinations of Less than 1 Hour, About 2 Hours, and Greater than 2 Hours for the week and the weekend.
- Weekdays were ranked higher than weekdays (as there are more days). The "Greater than 2 Hours" response was also favoured when combined with <1 hour, as it provided a high ceiling for time spent with the child that would likely fall beyond other combinations made up of lesser selections. The full table of responses and their score is presented below.

Score	Weekday	Weekend
1	<1 Hour	<1 Hour
2	<1 Hour	±2 Hours
3	±2 Hours	<1 Hour
4	±2 Hours	±2 Hours
5	<1 Hour	>2 Hours
6	>2 Hours	<1 Hour
7	<2 Hours	>2 Hours
8	>2 Hours	<2 Hours
9	>2 Hours	>2 Hours

Users may prefer to use the IE-HLE Activities scale and items 1.6.1 and 1.6.2 separately as described above. That approach would permit separate investigation of the amount of time

caregivers estimate they have to spend on activities with their children from the time they spend on specific early learning activities.

The IE-HLE *Early Learning Resources Scale.*

This scale was developed for the ELPO study, and is a combination of item 2.1.1, the total number of books that caregivers reported having in the home, and items 2.1.2, 2.1.3, and 2.1.4, the total number of toys (homemade, shop-bought, or household playthings) interviewees report having in the home. The reliability of this scale was found to be sound ($r = .750$, $p<.001$) and predicted ELOM FMCVMI and Cognition and Executive Functioning (CEF)domain scores ($p < .05$; $d = 0.33$).

In the development of this scale, and to ensure items were weighted equally, they are treated as follows:

a) The total number of books reported by each interviewee is divided by the highest number of books reported by one of the interviewees in the sample.
b) The total score for items 2,1,2, 2,1,3 and 2,1,4 is divided by the maximum possible score (3) for these items.
c) Results for a) and b) are summed and multiplied by 5 to obtain a score out of 10.

In sum, the Innovation Edge HLE is an easily administered brief instrument based on tools used internationally and which has been tested in South African low income populations. It can be used to assess the relationship between the child's home learning environment and their learning outcomes assessed on a tool such as the Innovation Edge Early Learning Outcomes Measure (http://elom.org.za).

In what follows, we describe the IE- multiple indicator HLE index.

The Multiple Indicator HLE index

An index is comprised of a limited number of reliable and valid indicators. An example is the Child Status Index developed to monitor the status of vulnerable children in the context of the HIV and AIDS pandemic[3]. That tool has six domains (each comprising several indicators) scored and reported separately (food and nutrition, shelter and care, protection, health, psychosocial, and education and skills training).

A clear case can be made for the inclusion of the **Home Learning Resources** indicator *(IE-HLE Early Learning Resources Scale)* in the Index as it is reliable and predicts ELOM scores.

The results of various analyses do not provide compelling evidence for a clear choice between the *IE-HLE Home Learning Opportunities* and the *IE-HLE Early Learning Activities* scales. The latter is recommended as a) it is a reliable scale that does not include caregiver time in the week and weekend, and b) some evidence of its relationship with ELOM scores is available.

Results for the **Caregiver Time for Play Activities with the Child** indicator (*Caregiver hours for play in the week and in the weekend*) are also not strong, but some significant relationships are evident. This indicator is likely to be useful for programmes that seek to increase caregivers' early learning engagements with their children.

Based on these considerations, the following indicators make up the Multiple Indicator HLE index:

Indicator 1: Home Learning Resources:

---

[3] : http://www.cpc.unc.edu/measure/tools/child-health/child-status-index

Measure: *The* IE-HLE *Early Learning Resources Scale* (items combined and computed as described above).

Indicator 2: Home Learning Activities:

Measure: *The IE-HLE Early Learning Activities Scale* (item scores summed as described above).

Indicator 3: Caregiver Time for Play Activities with the Child:

Measure: *Caregiver Time for Activities with the Child in the week and weekend* (items 1.6.1 and 1.6.2 combined and computed as described in the description of the Early Learning Opportunity Scale above).

References

Barnes, H., Noble, M., Wright, G. & Dawes, A. (2009) A Geographical Profile of Child Deprivation in South Africa. Child Indicators Research, 2, 121-199.

Barnett, W. S. (1998). Long-term cognitive and academic effects of early childhood education on children in poverty. *Preventive medicine*, *27*(2), 204-207.

Biersteker, L. & Dawes, A. (2016). An evaluation of the Implementation, Outcomes and Integration of the ELRU Family & Community Motivator Programme into the Early Childhood Development Programme of the North West Department of Social Development, 2015- 2016. Claremont Cape Town: Ilifa labantwana: http://ilifalabantwana.co.za/

Bradley, R. H., & Caldwell, B. M. (1984). The HOME Inventory and family demographics. *Developmental Psychology*, *20*(2), 315.

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & García Coll, C. (2001). The home environments of children in the United States part I: Variations by age, ethnicity, and poverty status. *Child development*, *72*(6), 1844-1867.

Bradley, R. H. (2012). *HOME Inventory.* In L. C. Mayes & M. Lewis (Eds.), *Cambridge handbooks in psychology. The Cambridge handbook of environment in human development* (p. 568–589). Cambridge University Press.

Dawes, A., Biersteker, L., Girdwood, L., Snelling, M. & Horler, J. (2020). The Early Learning Programme Outcomes Study. Technical Report. Claremont Cape Town: Innovation Edge and Ilifa Labantwana.

Dawes, A., Biersteker, L. & Hendricks, L. (2012) Towards Integrated Early Childhood Development. An evaluation of the Sobambisana Initiative. Cape Town: Ilifa Labantwana. http://ilifalabantwana.co.za/wp-content/uploads/2016/04/An-Evaluation-of-the-Sobambisana-Initiative.pdf

Duncan, G. J., & Magnuson, K. (2013). The importance of poverty early in childhood. *Policy Quarterly*, *9*(2), 12-17.

Melhuish, E. (2010). Impact of the Home Learning Environment on child cognitive development: Secondary analysis of data from 'Growing Up in Scotland'. Edinburgh, United Kingdom: The Scottish Government. See this paper for the construction of the HLE Index for the Government of Scotland.)

Melhuish, E.C., Sylva, K., Sammons, P., Siraj-Blatchford, I., Taggart, B., & Phan, M. (2008) Effects of the Home Learning Environment and preschool center experience upon literacy and numeracy development in early primary school. *Journal of Social Issues, 64*, 157-188.

Roggman, L. A., Cook, G. A., Innocenti, M. S., Jump Norman, V. K., & Christiansen, K. (2009). PICCOLO (Parenting interactions with children: Checklist of observations linked to outcomes). Logan, UT: Utah State University. 58

Roggman, L. A., Cook, G. A., Innocenti, M. S., Jump Norman, V., & Christiansen, K. (2013). Parenting interactions with children: Checklist of observations linked to outcomes (PICCOLO) in diverse ethnic groups. *Infant Mental Health Journal*, *34*(4), 290-306.

Taylor, S. & Yu, D. The importance of socio-economic status in determining educational achievement in South Africa. Stellenbosch Economic Working Papers: 01/09. Stellenbosch University.

Tran, T. D., Luchters, S., & Fisher, J. (2017). Early childhood development: impact of national human development, family poverty, parenting practices and access to early childhood education. *Child: care, health and development*, *43*(3), 415-426.

HOME LEARNING ENVIRONMENT QUESTIONNAIRE

Administrative Information	
Date of Assessment (day/ month/ year)	
Name of Assessor	
Name and Surname of Main Caregiver	
Name and Surname of Child	First name: Surname:
Child ID	

Assessor Instructions
When asking the questions, refer to the child who participates in the SmartStart programme.
Begin the introduction by saying: "Thank you for agreeing to talk to me. I am interested in what you do with your child at home. This won't take long. I just have a few questions."
Please note the response format per question – when using a tablet, you may have to: • *Select an answer from a dropdown selection* • *Input a particular number* • *Input a particular text item (e.g. "friend")*

SECTION 1 Caregiver Information	

Caregiver Question	Response
Background	
1.1: How old are you?	(specify number)_ years
1.2: What is your relationship to *(child's name)*?	(select) ☐Mother ☐Father ☐Aunt ☐Grandmother ☐Other relative _____ (specify) ☐Other _____ (specify)
1.3: How many children do you look after in your household?	(specify number) _ children
Caregiver Education	
1.4: What is the highest school grade you have completed?	(select) ☐Grade 1 ☐Grade 2 ☐Grade 3 ☐Grade 4 ☐Grade 5 ☐Grade 6 ☐Grade 7 ☐Grade 8 ☐Grade 9 ☐Grade 10 ☐Grade 11 ☐Grade 12 ☐Other _____ (specify)
1.5: Have you completed any post-school training?	(select) ☐Yes ☐No
1.5.1: IF YES, was this a certificate, diploma, or degree?	(select) ☐Certificate ☐Diploma ☐Degree
1.6: I am now going to ask you how much time you have in the day to play and talk with your child.	
1.6.1: How much time do you have between Monday and Friday to play with, read to and talk with your child?	

VERY LITTLE TIME (less than an hour)	SOME TIME (about 2 hours)	LOTS OF TIME (more than 2 hours)

1.6.2: NOW, think about the weekend. On the weekend, how much time do you have to play with, read to and talk with your child??

VERY LITTLE TIME (less than an hour)	SOME TIME (about 2 hours)	LOTS OF TIME (more than 2 hours)

Thank you. Now I will ask you about books and playthings at home.

SECTION 2
HOME LEARNING ENVIRONMENT
2.1: Resources (MICS)

2.1.1: How many children's books or picture books do you have for *(child's name)*?	(select) ☐None OR (specify number)_____

I am interested in learning about the things that *(child's name)* plays with when he/she is at home. Does she play with:

2.1.2: Homemade toys (such as dolls, cars, or other toys made at home)? (IF YES, probe to learn specifically what the child plays with to ascertain a response)	☐Yes ☐No ☐Don't know (specify)
2.1.3: Toys from a shop or manufactured toys? (IF YES, probe to learn specifically what the child plays with to ascertain a response)	☐Yes ☐No ☐Don't know (specify)
2.1.4: Household objects (such as bowls or pots, bottle tops) or objects found outside (such as sticks, rocks, seeds or leaves)? (IF YES, probe to learn specifically what the child plays with to ascertain a response)	☐Yes ☐No ☐Don't know (specify)

SECTION 2
HOME LEARNING ENVIRONMENT
2.2: (MICS and HLE)

Assessor Instructions: Read each item to the respondent and mark the response (never, sometimes, many times) with X.

I am now going to ask you about activities you or any household member did with *(child's name)* in the past week (past 7 days).

Tell me if it never happened, if it happened sometimes, or if it happened often in the past week

2.2.1: In the past week, how often did you or any household member read books to or look at picture books with *(child's name)*?

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES
If somebody read books to *(child's name)* or looked at picture books with *(child's name), who was that*?		Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.2: In the past week, how often did you or any household member tell stories to *(child's name)*?

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES
Who told stories to *(child's name)*?		Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle

	☐Grandparent
	☐ Sister or brother
	☐ Other person in the house
	_____ (specify)

2.2.3: <u>In the past week</u>, **how often did you or any household member sing songs to** *(child's name)***or with** *(child's name)* **including lullabies (songs when the child is going to sleep)?**

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES

Who sang songs or lullabies to *(child's name)?*	Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.4: <u>In the past week</u>, **how often did you or any household member take** *(child's name)* **outside the home, compound, yard or enclosure?**

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES

Who took *(child's name)* outside the home, compound, yard or enclosure?	Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.5: <u>In the past week</u>, **how often did you or any household member play with** *(child's name)***?**

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES

Who Played with *(child's name)*?	Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.6: <u>In the past week</u>, **how often did you or any household member tell** *(child's name) the names of things?*

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES

Who told *(child's name) the names of things?*	Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.7: <u>In the past week</u>, **how often did you or any household member count things with** *(child's name)***?**

Was it never, sometimes or many times?

NEVER	SOME TIMES	MANY TIMES

Who counted things with *(child's name)*?	Select [multiple allowed)

	☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)

2.2.8: In the past week, how often did you or any household member draw or paint things with *(child's name)***?** *Was it never, sometimes or many times?*

NEVER	SOME TIMES	MANY TIMES
Who drew or painted things with *(child's name)*?		Select [multiple allowed) ☐Mother ☐Father ☐Aunt or uncle ☐Grandparent ☐ Sister or brother ☐ Other person in the house _____ (specify)