Global Scales for Early Development v1.0
Long Form (directly administered)
User manual

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Acknowledgements

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The GSED package v1.0 includes open-access measures that provide a standardized method for measuring the development of children up to 36 months of age across diverse cultures and contexts.”
Introduction

This User Manual is part of a package of materials for the use of the Global Scales for Early Development (GSED). GSED are open-access measures that provide a standardized method for measuring the development of children up to 36 months of age across diverse cultures and contexts. They have been created to serve as population-level measures of early childhood development (ECD) for the global community that may be compared across countries. There are no fees nor royalties involved when using them, and they were designed and tested to be linguistically and culturally neutral. Adjustments of the measures to local contexts should not be necessary. If some items or parts of them do not seem suitable, The assessors should follow the steps indicated in the Adaptation and Translation Guide (part of the GSED package).

The GSED package v1.0 includes the GSED measures1 as well as accompanying materials to facilitate their implementation and use. The GSED measures are meant to collect population-level data on ECD and are designed to be used primarily for research and programmatic evaluations. They comprise a:

- **Short Form (SF)**, a caregiver-reported measure; and
- **Long Form (LF)**, comprised of items administered directly to children by a trained assessor.

In addition to the GSED measures (both as a paper version and app) and the User Manuals, the package includes: i) Item Guides; ii) Scoring Guide; iii) Adaptation and Translation Guide; and iv) Technical Report summarizing the creation and validation of the GSED measures.

**Who is the GSED LF for?**

Current evidence indicates that the psychometric properties of the GSED SF and GSED LF are comparable (see GSED Technical Report). The choice of one or the other, or the two together, to measure child development should be dictated by: i) the specific research question and purpose of the evaluation (e.g. type of intervention); ii) feasible administration (caregiver report versus direct administration); and iii) the capacity and expertise of the team. A combination of the GSED SF and GSED LF may be used to increase measurement precision and sensitivity to potential changes following interventions. Evidence on the potential increase in precision is currently being tested and will be made available in the near future.

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1 The GSED measures also include (not part of the package v1.0 as they are still being further tested, but can be made available on request):
- **Household Form (HF)**, caregiver-reported measure, designed to be integrated into large-scale and national-level surveys for monitoring child development; and
- **Psychosocial Form (PF)**, caregiver-reported measure of children’s psychosocial behaviours.
Qualifications and training needed

To administer the GSED LF, the assessor must have completed at least a secondary school qualification. An assessor should have experience building rapport with respondents and be comfortable working with families and children, including very young infants. Assessors should also be familiar with local customs and fluent in the language of administration.

A detailed item-by-item description is available in the GSED LF Item Guide. It can be used as a resource for both the translation process (to ensure that any translation reflects the original purpose of the questions), adaptation (to ensure instructions are relevant for the context) and training (to ensure that assessors have clear instructions on how to administer and score items). The GSED LF Item Guide includes instructions on how to administer, assess and score each item. Specifically, it includes indications for methods and props to use, referring to whether the item should be administered by observation, by listening, by demonstrating, etc., and whether any particular GSED LF Kit tool should be used as well. However, reading the manual and the item guide is not enough to learn how to properly administer the GSED LF. Assessors should undergo the GSED LF training and certification to ensure the administration rules are being followed and that they are familiar with tablet use prior to conducting the assessment.

The primary purpose of the GSED training is for trainees to familiarize themselves thoroughly with all items included in the GSED form they plan to use, understand the guidelines and rules of administration, and demonstrate mastery in the administration of the GSED. GSED training is available in English in person or via web platform upon request to one of a list of master trainers. Additionally, a series of self-paced online courses are in development. The suggested length of the training for the GSED LF is five to seven days (three to four hours per day including practice) (and an additional two to three days [a total of approximately eight hours including practice] of training is needed if also using the GSED SF). The training sessions may be tailored according to the users’ experience with child development-related tools and/or previous experience interviewing caregivers. Resources, such as the GSED Training Manual and additional materials (e.g. PowerPoints), are available to ensure that the same procedures are used consistently by all assessors in order to guarantee a standardized administration. To be certified to administer the GSED LF, individuals need to complete a GSED training, pass any required knowledge assessment (quizzes), and demonstrate their ability to administer the GSED LF through live observations or video recordings.

Purpose and structure of this manual

The purpose of this manual is to guide assessors’ understanding and use of the GSED LF. This manual is organized into four main sections: (a) description of the GSED LF; (b) administration of the GSED LF; (c) what to do and what not to do when administering the GSED LF; and (d) how to address possible challenging situations when administering the GSED LF. This manual is to be used together with the GSED LF Item Guide which has detailed instructions on how to administer each item.

Information describing the development of the GSED measures, the validation processes and results and interpretation of scores can be found in the GSED Technical Report. Definitions used in this manual are shown in Box 1.
BOX 1. GENERAL DEFINITIONS

- The **assessor** is the person who administers the GSED LF items to the target child and records the responses.

- The **target child** is the child to whom items refer and to whom the GSED LF is administered. Although sample-specific criteria may apply when selecting the target children for the purpose of the data collection effort, the GSED is designed to be applicable to all children in the 0 - < 36 months age range, regardless of disability status, culture, language, etc.

- The GSED measures are meant to be administered to the primary caregiver (GSED SF) or to the target child (GSED LF) in the presence of the primary caregiver. In this context the **primary caregiver** is the person who cares for the target child most often and who knows the most about his or her abilities and behaviour. (See further information later.)
Overview of the GSED LF

The GSED LF is a directly-administered measure of child development that can be used with children of all abilities and developmental levels. Both the GSED SF and GSED LF collect information on how children are developing through administering items that assess specific skills in gross and fine motor coordination, cognition, language and socio-emotional competence. However, domain-specific scores are not provided by the GSED, and only a holistic developmental score is produced. The GSED LF assessment aims to capture what the child can (or cannot) do, acknowledging the fact that it is dependent on the child’s performance on the day of the assessment.

The GSED measures are designed for use at population and programmatic level. Even though they are collected for individual children, the results are not validated to be interpreted for any specific child. The GSED measures have not yet been tested within the context of clinical use and should therefore not be used for individual screening of developmental delays or impairments nor for diagnosis.

The GSED LF consists of 155 items formatted in administration-friendly grids, and organized into three different streams to facilitate the flow of the assessment: Stream A includes 49 items; Stream B, 52; and Stream C, 54. Items are divided into streams, rather than into development domains, based on: a) similar tasks that are expected to manifest in succession (e.g. walking and running; building towers of blocks of various heights; identifying and naming pictures); and b) the materials used to administer the form. These streams were created to ease administration and help maintain the interest of the child. Stream A includes items that use materials or engage children in gross motor activities, Stream B includes items focused on language and communication abilities, and Stream C employs materials and items that engage children in fine motor or problem-solving tasks. Between the ages of 0 and 3 years, developmental domains are more integrated and less distinct from each other than at older ages. Measurable behaviours and activities may engage more than one domain. Therefore, all streams should be completed with every child to ensure that all competencies are measured as multiple domains are assessed within, as well as across, the three streams.

The assessor administering the form will complete about 15 - 20 items per stream, based on the child’s age and performance. To reduce the administration burden in terms of number of items and time required to collect data, an adaptive testing of the measures is being explored. Rather than using a fixed set of questions, the adaptive testing approach tailors the questions to the child, which can reduce administration time by smart item routing (i.e. moving to an easier question if the response to the prior question is “No”), while maintaining almost equivalent precision compared to a traditional sequence-based administration of the form. Adaptive tests are widely used in education, although there is no experience with this methodology in child development measurements. The GSED team has tested this innovative methodology in order to increase the efficiency of the forms’ administration, and the results are forthcoming.

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1 Some items might be associated with a particular domain, but it should be clear to the user that items/streams are not specifically organized into any specific development domain. Indeed, although separating ECD into various domains is useful for both researchers and clinicians, many observable behaviours and skills which are classified into any singular domain are often relevant to more than one.

2 To reduce the administration burden in terms of number of items and time required to collect data, an adaptive testing of the measures is being explored. Rather than using a fixed set of questions, the adaptive testing approach tailors the questions to the child, which can reduce administration time by smart item routing (i.e. moving to an easier question if the response to the prior question is “No”), while maintaining almost equivalent precision compared to a traditional sequence-based administration of the form. Adaptive tests are widely used in education, although there is no experience with this methodology in child development measurements. The GSED team has tested this innovative methodology in order to increase the efficiency of the forms’ administration, and the results are forthcoming.
For each GSED LF item, methods are included next to the text to guide the assessor as to:

a. whether the skill described in the item should be observed/seen, demonstrated to or by the child, listened for or spoken to the child (method);

b. which materials are needed for each item. For this purpose, the GSED LF includes pictures, images and materials needed for specific items (props).

Each item is to be marked with a binary option of “Yes” or “No”, based on the child’s performance. A GSED App has been developed to administer the GSED LF through a tablet. However, if electronic administration (which is preferable) is not possible, it may also be carried out with the paper version.

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**GSED LF AT A GLANCE**

- **155 Total Items**
- Organized in 3 streams
- Each administration covers around 45 - 60 items in total
- Yes/No response options
- Directly assesses child’s skills
- Response recorded based on whether the child is observed doing a skill or completing a task as instructed
Administering the GSED LF

Who must be present for the GSED LF administration

While the GSED LF is administered directly to the child, young children should never be assessed without the presence of a caregiver, and ideally, the primary one. Although the primary caregiver is often the mother, this is not always the case, so the definition of the main caregiver may be adapted as relevant on a context-by-context basis. If another person or family member, such as the father, sibling, grandparent or neighbour cares for the child more often than the mother, then this person should be considered the primary caregiver. This caregiver should be 18 years of age or older or an emancipated minor (a minor who is “emancipated” assumes most adult responsibilities before reaching the age of majority [usually 18] depending on the country and legal setting). When scheduling the administration of the GSED LF, the assessor team should clearly communicate that the primary caregiver must be present for the visit, as he/she provides comfort to a young child who may not be used to interacting with unknown adults. If the primary caregiver is not available, an alternative caregiver can be identified as long as he/she is another adult who knows the child very well.

Child being assessed

Primary caregiver: cares for the target child most often and knows the most about his/her abilities and behaviour

18 years of age or an emancipated minor
Where to administer the GSED LF

The GSED LF administration may be conducted in any location where the child is comfortable and at ease: at home, in a clinic or elsewhere. A location that is familiar to the child may facilitate the child interacting and responding to the assessor. The GSED LF is best administered in a quiet, well-lit space in order to see and interact with the child without distractions. It is preferable that the GSED LF is administered with some privacy, and without attendance or viewing by non-caregiver adults or children, who may inadvertently influence the child’s performance on the tasks or interfere with them.

Environment for GSED LF administration

The GSED LF can be administered by sitting on a mat on the floor with the child, or at a small table, to observe or instruct the child to perform certain tasks. When assessing what the child can do, the caregiver must not help the child. The assessor must observe directly what the child can do and not record what the caregiver says the child can do. It may be helpful to have the child sit on the caregiver’s lap or ask the caregiver to sit to the side of, or behind, the child, so that the child cannot look to him/her for feedback.
**Starting the GSED LF administration**

Items in the GSED LF are presented in three streams and in a progressive sequence within each stream, related to the level of difficulty of the competence investigated and the age of the child. They are organized into 3-month start age bands (see Table 1).

The streams do not have to be administered sequentially. There is flexibility so the assessor may choose the stream from which to start. This selection may depend on the child’s mood and what the assessor considers will help build rapport best with the child. However, the assessor should respect the items’ sequence within each stream. In some cases, items using similar props can be administered together. (See section How to administer the GSED LF for more details.)

To ensure that the GSED LF can be used with children of all abilities and developmental levels, while making its administration more efficient, the GSED LF administration includes three rules:

- a “**start**” rule, which enables the assessor to identify where to begin the GSED LF administration within a stream;

- a “**go back**” rule, which enables the assessor to go back to a younger age band (easier items), as needed; and

- a “**stop**” rule, to avoid administering items about tasks that children of that age most likely would not be able to accomplish.

<table>
<thead>
<tr>
<th>Age band</th>
<th>First item STREAM A</th>
<th>First item STREAM B</th>
<th>First item STREAM C</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 &lt; 3 months</td>
<td>▶️ A1</td>
<td>▶️ B1</td>
<td>▶️ C1</td>
</tr>
<tr>
<td>3 &lt; 6 months</td>
<td>▶️ A3</td>
<td>▶️ B3</td>
<td>▶️ C2</td>
</tr>
<tr>
<td>6 &lt; 9 months</td>
<td>▶️ A16</td>
<td>▶️ B6</td>
<td>▶️ C5</td>
</tr>
<tr>
<td>9 &lt; 12 months</td>
<td>▶️ A23</td>
<td>▶️ B8</td>
<td>▶️ C9</td>
</tr>
<tr>
<td>12 &lt; 15 months</td>
<td>▶️ A28</td>
<td>▶️ B9</td>
<td>▶️ C13</td>
</tr>
<tr>
<td>15 &lt; 18 months</td>
<td>▶️ A33</td>
<td>▶️ B12</td>
<td>▶️ C24</td>
</tr>
<tr>
<td>18 &lt; 21 months</td>
<td>▶️ A34</td>
<td>▶️ B17</td>
<td>▶️ C27</td>
</tr>
<tr>
<td>21 &lt; 24 months</td>
<td>▶️ A35</td>
<td>▶️ B20</td>
<td>▶️ C28</td>
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<td>24 &lt; 27 months</td>
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<td>▶️ B23</td>
<td>▶️ C29</td>
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<td>▶️ B28</td>
<td>▶️ C32</td>
</tr>
<tr>
<td>30 &lt; 33 months</td>
<td>▶️ A38</td>
<td>▶️ B30</td>
<td>▶️ C36</td>
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<tr>
<td>33 &lt; 36 months</td>
<td>▶️ A39</td>
<td>▶️ B33</td>
<td>▶️ C37</td>
</tr>
</tbody>
</table>
ADMINISTERING THE GSED LF

“Start” rule
Begin with the first item based on the child’s age

“Based on the “start” rule, the assessor should begin the GSED LF administration with the first item of the stream (A, B or C), according to the child’s age band (see Table 1). The starting item is marked in the paper version of the GSED LF, and automatically presented on the GSED App. Once the child’s age is input into the GSED App, it will automatically initiate the GSED LF with the correct item for that child’s age in each stream, displaying items that are usually quite easy for a child of that age to complete. If the child is able to do the first item in the age band in each stream, the assessor should proceed to the next item and continue, ensuring that “Yes” (✓) is marked on four consecutive items.

“Go back” rule
If any “No” responses in the initial items, work backwards until 4 items in a row are marked as “Yes”

If the child cannot do the first item, the assessor should move backwards to the previous item and attempt it. In this case, the assessor should keep going backwards until four items in a row have been marked “Yes” (✓). The assessor will then move forward with administration of the next item after the one marked “Yes” (✓). Children develop at different rates and the “go back” rule allows children at all stages of development to be assessed appropriately.

“Stop” rule
Establish “bookends”: 4 consecutive “Yes” at the start and 4 items in a row marked as “No” at the end

The administration of each stream should stop when four items in a row have been marked as “No” (✗), i.e. the child has not been able to do four continuous tasks. After this point, it may be assumed that the child cannot do any more items and the assessment of the stream will be finished.

The GSED LF administration is based on a “bookend” structure which the above rules facilitate. This ensures that the GSED LF assessor asks all possible items that could be relevant for a specific child, making the assessment more efficient. This rule indicates that, for each stream, all items between four consecutive “Yes” responses (✓) (left bookend), and four consecutive “No” responses (✗) (right bookend), should be administered and responded to. Example 1 shows a mix of “Yes” and “No” responses that are sequenced in a way that does not trigger the “stop” rule until reaching item B18.
What is a bookend?

**Example 1.**
5-month-old child, Stream B

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Left bookend

“Middle bit” (exact sequence of responses may differ, but not 4 “No” responses in a row which would trigger the right bookend).

Right bookend

**Example 2** shows acceptable response sets related to the bookend, and **Example 3** shows response sets that are unacceptable.

**Example 2.**
ACCEPTABLE response sets

a. **Perfect bookend**

<table>
<thead>
<tr>
<th></th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
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<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
<th>B14</th>
<th>B15</th>
<th>B16</th>
<th>B17</th>
<th>B18</th>
<th>B19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

b. **No left bookend because of lower bound (cannot go back beyond first item)**

<table>
<thead>
<tr>
<th></th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

c. **Incidental observations may be recorded outside the bookends**

<table>
<thead>
<tr>
<th></th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
<th>B14</th>
<th>B15</th>
<th>B16</th>
<th>B17</th>
<th>B18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example 3.**
UNACCEPTABLE response sets

a. **Left bookend does not have 4 contiguous “Yes” responses**

<table>
<thead>
<tr>
<th></th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
<th>B14</th>
<th>B15</th>
<th>B16</th>
<th>B17</th>
<th>B18</th>
<th>B19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

b. **Right bookend does not have 4 contiguous “No” responses**

<table>
<thead>
<tr>
<th></th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
<th>B14</th>
<th>B15</th>
<th>B16</th>
<th>B17</th>
<th>B18</th>
<th>B19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

c. **Perfect bookends but missing items “in the middle”**

<table>
<thead>
<tr>
<th></th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
<th>B7</th>
<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
<th>B14</th>
<th>B15</th>
<th>B16</th>
<th>B17</th>
<th>B18</th>
<th>B19</th>
<th>B20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
NOTE THAT:

- When using the GSED App, the child’s age will automatically be calculated, but when using the paper version of the GSED LF, the child’s chronological age will need to be calculated before beginning administration to select the correct age band to begin.

- For children in the youngest age band, 0 < 3 months, there is no earlier item to go back to (see Example 2.b in the bookend box) even if the assessor marks “No” for any of the first four items. Therefore, in this case, the assessor should continue moving forward in administering the items until the “stop” rule is triggered (four consecutive “No” responses). For children in this youngest age band who do not pass the first item, the assessment then ends even if the first four responses are “No”.

- The child may perform some items spontaneously. The assessor should be attentive to what the child does as some items can be observed incidentally throughout the assessment and without the assessor necessarily asking.

- There can be incidental observations recorded in a non-sequential manner (see Example 2.c in the bookend box) that may trigger the “stop” rule. Additionally, the assessor may administer items outside of the item sets that trigger the “stop” rule (e.g. if the assessor wants to ask all the items that use a specific object at once). However, the assessor must ensure that responses to all items before the “stop” rule is triggered are recorded (otherwise the form will not be considered complete).
Example 4.
Child is 20 months old, and the app demonstrates the “start”, “go back”, and “stop” rules

In Example 4, based on the child’s age of 20 months, the start item in Stream B is B17. However, the child is not able to fulfill task B17 (Points to 2 pictures), and the item is marked as “No”. The assessor then goes back and administers items B16, B15, B14 and B13. The child passes all of the items for a younger age, fulfilling the rule that requires four “Yes” items in a row at the beginning of the assessment. The assessor then skips back to the original start item (B17), and begins asking the next items (B18 onwards). The administration of the items in Stream B is discontinued when the child is unable to pass four consecutive items, as seen for B19, B20, B21 and B22. On the GSED App, the rules are automated, and any items that do not need to be administered become faded, as shown for B23 to B25. At that point, the assessor would proceed to the next stream.
**Example 5.a.**
Child is 11 months old, and the app demonstrates the “start”, “go back” and “stop” rules

<table>
<thead>
<tr>
<th>STREAM A</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2X)</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

| (2X) | (2X) | (2X) | (2X) | (2X) |
| X | X | X | X | X |
| No | No | No | No | Yes |
| Yes | Yes | Yes | Yes | Yes |

| (2X) | (2X) | (2X) | (2X) | (2X) |
| X | X | X | X | X |
| No | No | No | No | Yes |
| Yes | Yes | Yes | Yes | Yes |

In Example 5.a, the child is 11 months old. Based on this, the start item in Stream A is A23 (Reaches for a second object). The child is marked “Yes” for A23 and A24, but not A25. As such, the assessor needs to go back and administer lower-numbered items. However, the child is not able to fulfil task A22 (Stands with support), and the item is marked as “No”. The assessor then goes back and administers A21, which is “Yes”, and then A20, but this is “No”. Again, the assessor needs to move backwards and administer items until four items in a row are “Yes”. Thus, A19, A18, A17 and A16 are administered and passed, completing the left bookend. The assessor proceeds back to A25, and resumes the administration of the consecutive items.

**Example 5.b.**
Child is 11 months old, and the app demonstrates the “start”, “go back” and “stop” rules

<table>
<thead>
<tr>
<th>STREAM A</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2X)</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

| (2X) | (2X) | (2X) | (2X) | (2X) |
| X | X | X | X | X |
| No | No | No | No | Yes |
| Yes | Yes | Yes | Yes | Yes |

| (2X) | (2X) | (2X) | (2X) | (2X) |
| X | X | X | X | X |
| No | No | No | No | Yes |
| Yes | Yes | Yes | Yes | Yes |

In Example 5.b the assessor continues with items A26 up to A30, when four items in a row are answered as “No”, fulfilling the “stop” rule and completing the administration of that stream. Again, in the GSED App this process is automatic, and items both before and after the bookends become faded, indicating that no further items need to be administered in that particular stream.
Example 6.
Child is 2 months old, and the App demonstrates the “start” and “stop” rules; “go back” rule does not apply

| Stream C |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| C1. Fixates eyes   | C2. Responds to sound | C3. Fixes and follows-1 degrees | C4. Manipulates cup or spoon in play | C5. Shows interest in making a sound |
| (2X)               | (2X)              | (2X)              | (2X)              | (2X)              |
| X                  | No                | Yes               | X                 | No                |
| (2X)               | (2X)              | (2X)              | (2X)              | (2X)              |
| X                  | No                | Yes               | X                 | No                |
| (2X)               | (2X)              | (2X)              | (2X)              | (2X)              |
| X                  | No                | Yes               | X                 | No                |

Example 6 shows the case of a 2-month-old child. The start item would be the first from each specific stream. The assessor starts Stream C with item C1 (Fixates eyes) and proceeds with the administration of the items on the GSED LF. C4 is “No”, but the assessor continues, regardless of the left bookend condition. As 0 up to 3 months is the youngest age band, the “Go back” rule does not apply in this case. The administration of the form finishes when four items in a row are answered as “No”. In this example, this occurs with item C10.

What you need to administer the GSED LF

The GSED LF administration requires the form to be filled out, either in the electronic version (GSED App) (preferred) or paper, and access to the GSED LF Kit for administration of the measure. The kit includes materials that should be sourced locally for use with the child. The Annex contains details on the GSED LF Kit composition and specific information for its construction.

When administering the GSED LF, the assessor should keep the GSED LF Kit materials away from the child and only pull out those required at the time of assessment to minimize distraction. The rest of the materials can be in a box or a basket. They would be best organized according to the age of the child so that the assessor can be ready with the materials needed for the particular child being assessed.
How to administer the GSED LF items

GSED LF rules to start administration were covered above. There is flexibility in the order of administration of the streams, but the assessor should respect the items’ sequence within each stream which is ordered by level of difficulty of each competency. An exception is allowed to the administration in strict sequence for those items of different difficulty levels that either use the same materials (props) from the GSED LF Kit (e.g. peg board items, naming items on the tablet) or measure skills and behaviours that are commonly observed in a sequence (e.g. walking, running, jumping) and therefore can be administered together without strictly following the sequence. Items linked to each other in this way are indicated on the GSED LF. Incidental observations of items can be scored at any time throughout the administration of the form. The flow of the administration will tend to depend on how active the child is at the time of the assessment. Stream A has more motor/physical-type items, whereas stream C has more items which can be done while sitting down quietly with the child. Nonetheless, before concluding the assessment, the assessor should check that all items in the sequence within a stream have been completed until the “stop” rule is triggered, without skipping items in the middle.

Icons capture the two main features that should guide the assessment: administration methods of best observing the item, and props to be used for administration. Accompanying images for most items demonstrate how administering the item should look.

GSED LF Administration Methods indicate the method to administer each of the items, i.e. whether the assessor should talk to the child, listen to the child, demonstrate the skill, observe the child, time an item, and/or use the tablet (or the electronic device with the GSED App) to show an image. Each item includes its own icon(s) to indicate the methods of administration.

NOTE THAT:

- When using the GSED LF on the GSED App, some of the props (images and story book) are included in the tablet and referred to with the ‘tablet’ icon. Additionally, each item in the grid on the GSED App has an option to display the detailed instructions about how to administer the specific item (information contained in the GSED LF Item Guide), shown by the information symbol on the top right-hand side. When clicking on it, the help screen will appear, showing the item instructions, and all the icons for administration methods and props for that item.

- When using the GSED LF paper format, the props included in the GSED App should be printed out and included as part of the GSED LF Kit for administration. Additionally, if the assessors would like to have easy access to instructions about how to administer each item, they should carry along the GSED LF Item Guide.
**GSED LF Props**, on the other hand, are indications of which GSED LF Kit material/object should be used when administering a particular item. As with icons used for GSED LF administration methods, these are item specific.

<table>
<thead>
<tr>
<th>Ball</th>
<th>Bean bag</th>
<th>Block</th>
<th>Car</th>
<th>Cloth</th>
<th>Crayon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Ball" /></td>
<td><img src="image" alt="Bean bag" /></td>
<td><img src="image" alt="Block" /></td>
<td><img src="image" alt="Car" /></td>
<td><img src="image" alt="Cloth" /></td>
<td><img src="image" alt="Crayon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cup</th>
<th>Jar</th>
<th>Laminated sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Cup" /></td>
<td><img src="image" alt="Jar" /></td>
<td><img src="image" alt="Laminated sheets" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length sticks</th>
<th>Objects</th>
<th>Paper</th>
<th>Peg board</th>
<th>Plate</th>
<th>Rattle</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Length sticks" /></td>
<td><img src="image" alt="Objects" /></td>
<td><img src="image" alt="Paper" /></td>
<td><img src="image" alt="Peg board" /></td>
<td><img src="image" alt="Plate" /></td>
<td><img src="image" alt="Rattle" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rice puff</th>
<th>Shape board</th>
<th>Shoelace</th>
<th>Spoon</th>
<th>Squeeze toy</th>
<th>Tablet</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Rice puff" /></td>
<td><img src="image" alt="Shape board" /></td>
<td><img src="image" alt="Shoelace" /></td>
<td><img src="image" alt="Spoon" /></td>
<td><img src="image" alt="Squeeze toy" /></td>
<td><img src="image" alt="Tablet" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tablet set</th>
<th>Water bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Tablet set" /></td>
<td><img src="image" alt="Water bottle" /></td>
</tr>
</tbody>
</table>

Users are encouraged to have referral details of appropriate child development or paediatric services available for respondents because some items might raise concerns about children’s development.
GSED LF administration recommendations

Building rapport with the child

Children will probably be unfamiliar with the assessor. In order to put the child at ease to effectively administer the GSED LF:

- Put some toys from the GSED LF Kit out, or use some extra toys - if available -, for the child to relax with and play with before the administration of the GSED LF. That way the child will feel more at ease when the assessor starts. This play can happen while the assessor is collecting the caregiver consent form, or perhaps interviewing the caregiver to complete other data collection instruments. However, be mindful of not exposing the child to objects or toys (such as the peg board, shape board or the blocks) where the child may practice skills that will be assessed during the GSED LF administration.

Which stream to start with

- Consider starting with the stream that might help the child feel more comfortable, excited or entertained. In some cases, this might be related to the child’s age. Observe whether the child wants to be active or wants to sit quietly near his/her caregiver first.

Making the GSED LF administration more efficient

- Often children carry out actions spontaneously when the assessor is not concentrating on them. If the assessor is careful in looking at the child, he/she may be able to mark items across streams observed incidentally. If the child incidentally does a task at a later point in the administration of the measure, the assessor can account for it and therefore score it, assuming it has not required re-demonstrations.
Dos and Don’ts when administering the GSED LF

- **DO** familiarize yourself with the GSED LF items and administration instructions both electronically and on paper. Even though electronic administration is preferred, if the GSED App malfunctions or if the electronic device is not available, the assessment can be completed with the paper version of the GSED LF.

- **DO** use the method and prop icons to guide you in the GSED LF administration. The more familiar you are with them, the less you will need to refer back to the instructions.

- **DO** record only what you observe the child can or cannot do during the administration of the GSED LF. **DO NOT** record what the caregiver says the child can or cannot do.

- **DO** follow the number of attempts indicated for each item. **DO NOT** demonstrate or facilitate further beyond the numbers specified for the particular item. If the child can perform a task, he/she should be able to do it in the recommended number of attempts (or incidentally).

- **DO NOT** allow the caregiver to help the child. **DO NOT** record the answers based on the caregiver’s help, if any, to the child.
Managing challenges during GSED LF administration

Several situations may arise during the assessment that could make the administration of the GSED LF challenging. Infants and young children may show lack of responsiveness during testing due to fatigue, hunger, lack of interest and/or over-stimulation. This section highlights some common challenges and proposals for overcoming them.

The child does an item before starting or administering it. For example, the child walks into the room, stacks two bricks or scribbles with a pencil.

✅ Take a mental note and mark the item as “Yes” when you get to that particular item (this counts as incidental observation).

The child is distracted

✅ Reduce extra sounds (television, radio or other people speaking).

✅ Ask additional people in the room to move out of the child’s line of vision.

✅ Change sitting positions and location, if needed.

✅ Continue with items that interest or engage the child. For example, administer the items that use blocks if the child likes the blocks.

✅ Be supportive and positive with the child, and redirect the child to the items.

The child is tired

✅ Take a short break (and possibly offer a snack or drink).

✅ Allow the child to engage with any objects of interest, play or stretch for re-engagement. In the meantime, the assessor can observe the child spontaneously performing some of the tasks on the GSED LF.

✅ Take into consideration the routine of the child, based on the caregiver’s advice, and try and make the time of the assessment as minimally disruptive as possible (e.g. if the child naps in the afternoon, schedule the assessment in the morning or after a nap time). Often it is best to assess young children in the morning before they get tired, but this will depend on the schedule of the family.

✅ Consider re-scheduling the assessment if the child is very tired.

The child is hungry

✅ Allow for a break for the child to breastfeed or have a snack/drink, as appropriate.

✅ If possible, have small biscuits or other snacks available, as appropriate.

The child is fussy

✅ Take a break and allow the caregiver to soothe the child.

✅ Allow the child to play with a toy.

The caregiver is helping the child

✅ Remind the caregiver that the purpose of the GSED LF is to understand what the child can do on his/her own, without any help.

✅ Acknowledge the desire to help. Thank the caregiver for patience in accompanying the child during the GSED LF administration and explain that you will ask if help is needed. Children develop at different paces, and it is normal if they cannot perform some of the tasks.
Bibliography

Bayley Scales of Infant Development (Bayley)

Bayley Scales of Infant Development, second edition (Bayley-II)

Denver Developmental Screening Test (DDST)

Denver Developmental Screening Test, second edition (DDST II)

Developmental Milestones Checklist (DMC)

Developmental Milestones Checklist II (DMC II)

Dutch Development Instrument (DDI)

Griffiths Mental Development Scales (GMDS)

Griffiths Mental Development Scales – South African Version (GMDS-SA)

Malawi Developmental Assessment Tool (MDAT)

Stanford-Binet Intelligence Scales, fifth edition (SBIS-5)

Test de Desarrollo Psicomotor [Psychomotor Development Test] (TEPSI)

20
Annex. GSED LF Kit: individual items and specifications table

- Materials must be washable or able to be cleaned with a damp cloth or disinfectant wipes. Exceptions are paper, chalk and small food pieces.
- Purchase items locally that can be replaced if necessary.
- Store the kit materials together in a container.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mat</td>
<td>For child to be on floor or flat surface</td>
</tr>
<tr>
<td></td>
<td>1 - 2 metres (39 - 79 inches) x 1.5 metres (59 inches)</td>
</tr>
<tr>
<td>1 Timer</td>
<td>Plastic or metal</td>
</tr>
<tr>
<td>1 Rattle (bought or made)</td>
<td>Any colour</td>
</tr>
<tr>
<td></td>
<td>10 - 12 cm (4 - 5 inches) in length x 3 - 4 cm (1 - 1.5 inches) width of rattle head with handle 1 - 2 cm (0.5 – 1 inch) in width.</td>
</tr>
<tr>
<td>12 Blocks (small): 6 of the same colour</td>
<td>At least 6 of the same colour – 2 of different colour Wooden, non-lead paint</td>
</tr>
<tr>
<td></td>
<td>2.5 cm (1 inch) x 2.5 cm (1 inch)</td>
</tr>
<tr>
<td>2 Large cups: 1 of each colour</td>
<td>Any bright colour – 2 different colours (same as small ones) Plastic or non-breakable material</td>
</tr>
<tr>
<td></td>
<td>10 - 12 cm (4 - 5 inches) diameter and similar height</td>
</tr>
<tr>
<td>2 Small cups: 1 of each colour</td>
<td>Any bright colour – 2 different colours (same as large ones) Plastic or non-breakable material</td>
</tr>
<tr>
<td></td>
<td>6 - 8 cm (2.5 - 3 inches) diameter and similar height</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 1 Chalk or crayon           | Dark colour, e.g. blue or black  
At least 4 - 6 cm (1.5 - 2.5 inches) in length and 1 cm (0.5 inches) wide |
| 2 Tennis balls              | Bright colour  
(for example, yellow, bright orange, red)  
6.5 – 6.8 cm (2.5 - 3 inches) diameter |
| 1 Plastic spoon             | Plastic spoon  
10 cm (4 inches) length and bowl 3 cm (1 inch) width |
| 1 Metal spoon               | Metal spoon  
10 cm (4 inches) length and bowl 3 cm (1 inch) width |
| 1 Plastic water bottle      | Clear plastic  
500 ml bottle  
(no top needed) |
| 1 Cloth                     | Any colour. Thick material that is solid enough not to be blown away, e.g. towelling or thick cotton  
30 cm (12 inches) x 30 cm (12 inches) |
1 Shoe

Child’s shoe
Typical for the area
For small child, e.g. 2-year-old

Toy car

Any toy car that is locally sourced
10 cm (4 inches) length and
5 cm (2 inches) width

1 Plastic plate

Coloured plastic or metal (whatever is locally available)
15 - 20 cm (6 – 8 inches) diameter or similar

1 Comb

Plastic
5 - 10 cm (2 - 4 inches) length

1 Jar with screw-on lid

Clear small plastic jar with screw-on lid of any colour
(e.g. made for peanut butter, honey or similar)
12 - 14 cm (4 - 5.5 inches) height x 5 cm (2 inches) lid (approx.)

1 Shoelace

Cotton or similar type material
40 – 50 cm (16 - 20 inches) long and 0.5 cm (0.25 inches) wide or less
1 m (1 yard) length of string

White or black. String or long shoelace. Needs to be able to be placed down and not curl up. Not plastic.
1 metre (39 inches)

2 sticks each of a different length

Dark wood, could be pencils of different sizes
10 cm (4 inches) and 12 cm (5 inches) length, or 12 cm (5 inches) and 14 cm (5.5 inches) length

_pieces of A4 paper

White paper
21 × 29.7 cm (8.25 x 11.7 inches) A4 paper
(Could be Letter size paper, 8.5 x 11 inches)

Shape board

Form board with circle, square and triangle
Wooden
Forms and board in different colours
All shapes in same colour
20 cm (8 inches) width
15 cm (6 inches) height
Circle – 5 cm (2 inches) diameter
Triangle – 5 cm (2 inches) at bottom end
Square – 5 cm (2 inches) width and height
Thickness – 1 cm (0.45 inch) – 1.5 cm (0.6 inch)

1 Peg board and 8 pegs

Wooden with 8 pegs (or board can be made out of thick cardboard)
Frame and pegs same colour
Length – 15 cm (6 inches)
Width – 10 cm (4 inches)
Thickness – 1 cm (0.4 inch) – 1.5 cm (0.6 inch)
Holes – 1 cm (0.4 inch) in diameter or big enough for a 1 cm (0.4 inch) diameter peg
Dowels serve as pegs

1 Squeeze toy or crisp packet

Plastic material that makes a noise when pressed. May be filled by cotton or wool
8 cm (3 inches) x 6 cm (2.4 inches) x 3 - 4 cm (1.2 – 1.6 inches) thick
**1 Bean bag**

Cotton material with beans or rice inside
8 x 8 cm (3 x 3 inches)

**Rice puff or raisin**

Laminated cut outs
Print image set E on A4 size paper, cut the cups, and laminate each of them

Laminated sheets
Print the following images on A4 size paper, and laminate each sheet:
- a. Image Set J- J1 B50 laminated sheet
- b. Image Set J- J2 B51 laminated sheet
- c. Image Set J- J3 B52 laminated sheet
(Could be printed on Letter size paper)
The GSED LF is a directly-administered measure of child development that can be used with children of all abilities and developmental levels.”
FOR MORE INFORMATION PLEASE CONTACT:

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