



Translation and cultural adaptation of the instrument A Child's Journey into Brazilian Portuguese

Tradução e adaptação cultural do protocolo A Child's Journey para o português brasileiro

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ABSTRACT

Purpose: To translate and culturally adapt the instrument *A Child's Journey: Developmental Milestones (Birth – 6 years)* into Brazilian Portuguese.

Methods: The study was a cross-sectional study focusing on translation and cultural adaptation. Authorization for translation and adaptation was granted by MED-EL, which holds the rights to the material. Following a widely recognized model that has been in use for more than two decades, three Brazilian translators were involved in the initiative: one linguist (V1L) and two speech-language pathologists (V1F1 and V1F2). The three translations were compared to create a single version, which was then subjected to a back-translation process by a native English speaker with no knowledge of the original text. The final version in Portuguese was titled *Jornada da criança*, and it was applied to 88 children. **Results:** The instrument's adaptation process considered semantic and grammatical equivalence as well as appropriateness to the cultural context. The cultural adaptation included adjustments to the local context, ensuring that rhymes, songs, games, and nursery rhymes aligned with Brazilian Portuguese culture. Grammatical structures were also adjusted to Brazilian Portuguese norms. The instrument demonstrated cultural content validity and showed that the adaptation of the content was evident and objective, moreover, most parents understood the present items reasonably well. **Conclusion:** The cross-cultural translation of the instrument was successfully carried out, resulting in the Portuguese version entitled *Jornada da criança*.

Keywords: Cross-cultural adaptation; Translation; Child; Evaluation; Child development

RESUMO

Objetivo: Traduzir e fazer adaptação transcultural do instrumento *A Child's Journey: Developmental Milestones (Birth – 6 years)* para o português brasileiro.

Métodos: A pesquisa transversal focada na tradução e na adaptação cultural. A autorização para a tradução e a adaptação foi concedida pela MED-EL, que detém os direitos do material. Seguindo um modelo consagrado há mais de duas décadas, a iniciativa envolveu três tradutoras brasileiras: uma linguísta e duas fonoaudiólogas. As três traduções foram comparadas para criar uma única versão, que passou por um processo de retrotradução por um nativo de inglês sem conhecimento da versão original. Adaptada para o português, essa versão final recebeu o título “Jornada da Criança” e foi aplicada, em pré-teste, a 88 crianças. **Resultados:** A adaptação do instrumento levou em conta a equivalência semântica e gramatical e a adequação ao contexto cultural. Assim, aproximaram-se rimas, músicas, brincadeiras e parlendas da cultura e do português brasileiro. Também foram feitas adaptações à estrutura gramatical do português brasileiro. Na avaliação do pré-teste, o instrumento demonstrou validade de conteúdo cultural e sua adaptação foi clara, tendo sido compreendida pelos pais. No entanto, eles fizeram críticas: extensão do instrumento, dificuldade em contar palavras e desconhecimento da referência de Brown. Em contrapartida, destacaram aspectos positivos como o caráter interessante, abrangente e orientador do material. O conteúdo cultural do instrumento se mostrou válido e sua adaptação foi clara e objetiva. **Conclusão:** Cumpriu-se a tradução transcultural do instrumento sob o título de *Jornada da Criança*.

Palavras-chave: Adaptação cultural; Tradução; Criança; Avaliação; Desenvolvimento infantil

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Conflict of interests: No.

Authors' contribution: CCACL was responsible for conceptualization, data curation, formal analysis, methodology and supervision; TRT was responsible for methodology, writing – original draft and writing – review & editing; BMJ was responsible for conceptualization, data curation, investigation and validation; LCCBRS was responsible for validation and writing – review & editing; SJO was responsible for writing – review & editing; SMSI was responsible for conceptualization, data curation and validation.

Data Availability Statement: Research data is only available upon request.

Funding: None.

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Received: April 28, 2025; **Accepted:** December 14, 2025

Editor-in-Chief: Maria Cecília Martinelli Iorio.

Associate Editor: Stela Maris Aguiar Lemos.

INTRODUCTION

The child development process involves maturation of and interaction among perceptual, motor, cognitive, language, socioemotional, and self-regulation skills. These skills evolve in a structured, sequential, and simultaneous progression⁽¹⁾. The maturation of each skill is also referred to as a developmental milestone.

At the core of this process is neural plasticity, which encompasses the ability of the nervous system to change its structure and function in response to experiences and environmental stimuli. The relationship between neural plasticity and child development milestones is close and significant. During childhood, the brain is highly plastic, that is, it can be shaped and modified based on the child's experiences⁽²⁾.

Developmental milestones are a set of skills acquired by most children at a certain age. The sequence of stages children go through may vary, but it generally follows a pattern that reflects physical, cognitive, emotional, and social growth⁽³⁻⁵⁾.

These stages are not rigid, but rather depend on genetic and environmental factors, for example, and may manifest differently in each child.

The Centers for Disease Control and Prevention (CDC) proposed to the American Academy of Pediatrics that a study be conducted to update child development milestones to guide parents and health and education professionals in identifying the ideal time to seek help and begin intervention as early as possible.

In 2024, the CDC and the American Academy of Pediatrics⁽⁶⁾ published an update on developmental milestone skills up to 5 years of age. This document characterized the competencies and skills that children should achieve in social and emotional milestones, as well as in language, communication, cognition (learning, thinking, and problem-solving), and physical (motor) development. Each age has a different number of items, according to certain sequences and the complexity of each competency⁽²⁾. These updates provide the framework for parents to adapt the tool to their cultural context. However, an instrument is still needed for a comprehensive analysis, encompassing criteria related to hearing, receptive and expressive language, cognition, and play, corresponding to each age group.

In Brazil, the *Caderneta da Criança* (Child Health Handbook)⁽⁷⁾ is the document used to assess child development, monitoring children from birth to 9 years of age. Its first edition dates from 2005, it was updated in 2024, and it covers topics related to child health, growth, and development; its latest version was published online⁽⁷⁾.

Assessment tools are indispensable for monitoring developmental milestones and potential delays. Their validity depends on cultural and linguistic adaptation, thus ensuring the cultural equivalence of international tests. The continuous updating of these instruments is fundamental for early rehabilitation and for increasing the effectiveness of interventions, thereby optimizing prognoses⁽⁸⁻¹¹⁾.

An instrument used and known in English-speaking countries is *A Child's Journey: Developmental Milestones (Birth – 6 years)*⁽¹²⁾, developed by American specialists in the field of language and designated as a tool for professionals to monitor the acquisition of the eight skills needed for children to hear, speak, and communicate between birth and 72 months of age.

It is a screening guide that helps monitor child development in several areas and can be used by parents, educators, and health professionals. In addition, it provides insight into the child's developmental path, highlighting areas that may require attention and guiding possible appropriate interventions.

The instrument covers eight developmental domains: hearing, receptive language, expressive language, speech articulation, play, cognition, pragmatics, and literacy. The number of items for each skill varies. The skills comprise a list of items describing specific behaviors or developmental milestones expected for different age groups. The results are presented on three scales representing levels of competency, and the date of the assessment is to be recorded to help monitor progress over time.

This study aimed to translate and cross-culturally adapt the instrument *A Child's Journey: Developmental Milestones (Birth – 6 years)*⁽¹²⁾ into Brazilian Portuguese. The information collected from responses on the skills in comparison with age will be analyzed and validated in a second stage, which is not part of this study.

METHODS

This research was approved by the Research Ethics Committee of the Irmandade da Santa Casa de Misericórdia de São Paulo (ISC MSP), under no. 7,114,078.

This is a cross-sectional study of translation and cultural adaptation, whose data were subjected to qualitative analysis. The translation and cross-cultural adaptation were authorized by MED-EL, the company that owns the material, and followed a model previously published by authors⁽¹³⁾. Initially, three certified Brazilian translators who were unfamiliar with the instrument worked independently: one from the field of linguistics and two speech-language pathologists, respectively designated as V^{1L}, V^{1F1}, and V^{1F2}.

Following the translations, the three versions were compared to compose a single text. Produced by consensus among the translators, the synthesized translation resolved the discrepancies.

This was followed by a back-translation by a native English speaker who was also unfamiliar with the original version and had no access to the original version or the concepts addressed.

The instrument was sent for review by a committee of six experts, who commented on its clear wording. The experts are fluent in English and hold at least a master's degree.

The instrument translated into Portuguese was entitled *Jornada da Criança* and sent to MED-EL.

The pretest was delivered in print to 150 parents selected randomly and independently, according to the main criterion of having children with typical development aged between one and 72 months. Demographic characteristics such as age, gender, and educational level were considered to ensure the representativeness of the target population.

After agreeing to participate in the study and signing the Informed Consent Form (ICF), the parents received verbal instructions on how to complete the material and watched a one-minute video with detailed explanations about the instrument. Any questions and comments regarding completion were promptly answered via WhatsApp[®].

Of these 150 parents, 88 completed the instrument and delivered it personally to the evaluators, with their considerations reported orally and their data compiled in Research Electronic Data Capture (REDCap), a tool widely used for data collection and management in academic and clinical research.

REDCap is designed to meet strict security and privacy standards, including compliance with regulations such as the Health Insurance Portability and Accountability Act (HIPAA) for research in the United States, and the General Data Protection Regulation (GDPR), in the European Union. Data are stored on secure servers and can only be accessed by authorized users. The development of REDCap was financially supported by the National Center for Advancing Translational Sciences/ National Institutes of Health (NCATS/NIH) (UL1 TR000445). Data analysis was performed based on reports made available by the platform itself.

The instrument covers eight skills: hearing, receptive language, expressive language, speech articulation, play, cognition, pragmatics, and literacy (Chart 1), divided among the following age groups: 0–3 months, 3–6 months, 0–6 months, 6–9 months, 9–12 months, 6–12 months, 12–15 months, 15–18 months, 12–18 months, 18–24 months, 24–30 months, 24–36 months, 30–36 months, 36–48 months, 36–42 months, 42–48 months, 36–48 months, 48–60 months, 48–54 months, 54–60 months, 60–72 months, and 66–72 months, with specific questions across

the age groups. When responding, participants should mark with an “X” to indicate whether the skills are mastered (already acquired), emerging (occurring some of the time), or a goal to be achieved. The date of application of the instrument should be recorded so that progress can be observed in due course.

RESULTS

The adaptation of the instrument considered semantic and grammatical equivalence and cultural appropriateness. The translations were evaluated by the specialists (a linguist and two speech-language pathologists) and then compared, with the consensus version appearing in the instrument as the final version (Chart 2).

Cultural context adaptation

The adaptation included adjustment to the cultural context, seeking to bring rhymes, songs, games, and nursery rhymes closer to Brazilian Portuguese culture. Chart 3 shows the substitutions made for the idiomatic expressions, riddles, games, and the adapted book.

Chart 1. Definition of skills

Hearing	Ability to perceive sound through the sense of hearing and the development of auditory skills.
Receptive language	Ability to understand thoughts, desires, and needs expressed in syntactically and grammatically accurate words or phrases.
Expressive language	Ability to express thoughts, desires, and needs in syntactically and grammatically accurate words or phrases.
Speech articulation	Ability to produce vocal expressions and speech sounds.
Play	Fun activity through which children learn and experience the world.
Cognition	The process of developing knowledge through experience, the senses, and thought.
Pragmatics	Social use of language to convey or understand meanings in interactions with other people.
Literacy	Ability to interact with texts, including the ability to read and write.

Chart 2. Original versions translated by experts, and the final version

Original in English	V ^{1L} Linguist	V ^{1P1} Speech-language pathologist 1	V ^{1P2} Speech-language pathologist 2	Final version
Communicated by others	Said by other people	Communicated by others	Said by other people	Said by other people
Grammatically accurate	Grammatically accurate	Grammatically accurate	Grammatically accurate	Grammatically accurate
Skills	Skills / competencies	Skills / competencies	Skills / competencies	Skills / competencies ^(*)
Mastery	Mastery	Mastery	Competent	Mastery
Produce	Produces	Speaks	Speaks	Produces / speaks ^(**)
Agent	Subject	Agent	Subject	Subject

^(*) In Portuguese, either *habilidades* or *capacidades* is used, depending on the context. ^(**) In Portuguese, either *produz* or *fala* is used, depending on the context.

Chart 3. Cultural and grammatical adaptation

Cultural context adaptation	English	Portuguese
Idiomatic expressions	it’s raining cats and dogs	<i>está chovendo canivete</i>
Riddles	Why do leopards have a hard time hiding? – They are always spotted	<i>Qual é o animal que anda com uma pata? – O pato</i>
Games	Lucky Duck Duck Duck Goose	<i>Pula pirata Corre cotia</i>
Book	Brown bear, brown bear, what do you see	<i>Seu Lobato Tinha um Sítio</i>
Grammatical correctness	English	Portuguese
	can’t, don’t, won’t	<i>[there is no equivalent in Portuguese]</i>
	Begins to produce common irregular plurals (e.g. children, feet)	<i>Common irregular plurals (e.g., aviões, pães)</i>

Grammatical adaptation

Whenever possible, adaptations were also made to the grammatical structure of Brazilian Portuguese, as shown in the following two examples:

- Can't, don't, won't – there is no equivalent in Portuguese.
- “Begins to produce common irregular plurals (e.g. children, feet)” was adapted to “*começa a produzir plurais irregulares comuns (por exemplo, aviões, pães)*”.

The reviewers unanimously agreed to retain Brown’s designation⁽¹⁴⁾ of the morphological stages (Chart 4).

Translation of the material: general instructions

See Appendix 1 for the final version of the general instructions for *Jornada da Criança*.

Figures 1, 2, 3, and 4 are examples of the proposed skills to be observed in each age group. The complete translated

material, approximately 100 pages long, will be made available by MED-EL.

Pretest

Forty-four female children (50%) and 44 male children were evaluated, distributed as follows: 19 (21.59%) in the 0-12 month age group; 24 (24.27%) aged 13-24 months; 17 (11.36%) aged 25-36 months; 10 aged 37-48 months; 8 (9.09%) aged 49-60 months; and 10 aged 60-72 months.

The cultural content of the instrument proved to be valid, and its adaptation was clear and objective, with most parents understanding all items. When handing back their completed instruments, they spontaneously made some remarks: on the one hand, they considered it very long and pointed out the difficulty in counting the number of words, adding that none of them were familiar with Brown’s reference; on the other hand, they considered it interesting, comprehensive, and guiding.

Chart 4. Translation of Brown’s Stages⁽¹⁴⁾

English	Portuguese
Brown’s 14 Grammatical Morphemes were used to outline morphological acquisition.	Mean length of utterance (MLU) was used to outline morphological acquisition, as are Brown’s 14 Morphemes.
Mean Length of Utterance (MLU) ranges from 2.5 to 3.0.	MLU ranges from 2.5 to 3.0.

AUDITION		Goal	Emerging	Mastery	Date
15-18 MONTHS	CONTINUED FROM PREVIOUS PAGE				
Finds familiar objects verbally requested that are not in sight					
Localises sound directly to side, below and above					
Repeats emphasised or last word said to him/her					

Figure 1. Example of audition in the 12-15-month age group.

RECEPTIVE LANGUAGE		Goal	Emerging	Mastery	Date
12-15 MONTHS					
Follows one-step directions during play (e.g. “Give it to Daddy.”)					
Understands the names of at least three food items					

Figure 2. Example of receptive language in the 12-15-month age group.

EXPRESSIVE LANGUAGE		Goal	Emerging	Mastery	Date
12-15 MONTHS					
Shakes head to indicate 'no' – NONVERBAL					
Combines vocalisation and gesture to obtain desired objects					
Imitates three animal sounds					

Figure 3. Example of expressive language in the 12-15-month age group.

SPEECH ARTICULATION		Goal	Emerging	Mastery	Date
12-15 MONTHS					
Produces most vowels in vocal play					

Figure 4. Example of speech articulation in the 12-15-month age group.

DISCUSSION

The instrument *Jornada da Criança* is comprehensive enough for health professionals, such as speech-language pathologists, psychologists, and physicians, as well as educators, and family members, to monitor child development. It is not a tool for diagnosing disorders or delays. If reasons for concern arise, the child may need to be referred to specialized professionals, who will conduct a qualified assessment.

Therefore, the tool suggests providing continuous and constructive monitoring, focusing on strengthening children's skills and potential, without attempting to label or diagnose them.

Children's overall development is influenced by neural processes that show genetic and epigenetic variations^(1,15). Thus, the quality of their interactions with the adults around them is critically significant^(9,16).

Child development is a dynamic and fascinating process, in which each milestone represents not only the acquisition of new skills but also the way children interact with the world around them. From their first steps to understanding more complex concepts, each stage involves a unique set of discoveries and challenges. Monitoring these changes and understanding the stages of development is very useful for parents, educators, and health professionals.

A previous study⁽¹⁷⁾ highlights the importance of considering the child's context when assessing their development.

This analysis allows for a better understanding of the influences of the environment on the various dimensions of growth. It is essential to be aware of the immediate environment, as different cultures play a significant role in child development. Each child is unique, and their experiences are shaped both by cultural traditions and values and by the social interactions that they experience. This cultural context is key to shaping children's identity, directly influencing the skills and competencies they will develop throughout their lives.

Assessment tools, including monitoring the development of hearing- and language-related skills, provide valuable guidance that help identify whether a skill has been fully acquired, is in the process of being acquired, or requires intervention to be developed. These instruments not only provide data on the child's progress but also guide parents, educators, and professionals in adjusting their approach, ensuring that each child has adequate support to advance in learning. Thus, assessment is fundamental to promoting comprehensive and effective development.

The experts' assessments proved to be quite consistent, with minor variations in interpretation between the two languages. This suggests that the translation and adaptation process was effective, preserving the essence and meaning of the original content. The consistency of the interpretations revealed a clear understanding of the cultural nuances of both languages, which is key to ensuring that the tool is relevant and applicable in different contexts. This consistency in the analyses can help build confidence when applying the translated material in assessments or interventions.

The adaptations to the cultural context considered current reality, allowing interventions and translations to meet contemporary needs. Knowing that these contexts may change over time, adaptations may require periodic revisions. This flexibility is crucial to ensure that the instruments and their applications remain relevant and effective, adjusting to any social, cultural, and linguistic changes that may arise. Thus, it is important to adapt the materials periodically to preserve their continued effectiveness and meet the needs of the population assisted.

Grammatical adaptations proved necessary as language acquisition varies from language to language. Each language has its own grammatical rules, syntactic structure, and nuances that influence how children understand and use language. Therefore, these differences must be considered in the translation and adaptation process to ensure that the content is clear and functional in each new linguistic context. The adaptations must not only respect the particularities of the target language but also promote effective and relevant learning for its speakers.

In the original A Child's Journey instrument, the authors adopt Brown's Stages⁽¹⁴⁾, which provide a morphological and syntactic framework for understanding and predicting the development of expressive language in English-speaking children. The author designates mean length of utterance (MLU) as the index that assesses morphological and grammatical development and tracks the progression of grammatical production according to age and vocabulary as predictors of this development.

In Brazil, there are few tools for assessing global language development in detail, such as Brown's proposal, which involves the grammatical and pragmatic performance of children from birth to six years of age.

Previous studies^(18,19) evaluated MUL based on the translation of MLU⁽¹⁴⁾ in studies involving children with specific changes in language development. Other authors⁽²⁰⁾ also present MUL results produced by children with Down syndrome, and one study⁽²¹⁾ concludes that the values found in the measurement of language development could be used as a normative reference for Portuguese children.

Quantifying and qualifying the morphological and syntactic aspects of children with typical development still seems to be a challenge for many researchers, but these aspects may guide studies that evaluate atypically developing children.

Thus, further research should be conducted in Brazil on Brown's proposal⁽¹⁴⁾ across all age groups.

Although the evaluators unanimously agreed to retain the designation Brown's Stages, during the pretest stage they realized that there was no point in mentioning this author to the parents: many did not mark this item or did so randomly, as all of them confirmed verbally during the evaluation or upon returning the instrument. Therefore, the removal of Brown's titles from the model translated into Portuguese was suggested to avoid possible doubts among the examiners, while maintaining the stages proposed by this author.

Another difficulty parents had in assessing their children concerned the point at which the instrument indicates a gradual increase in vocabulary; this reality does not seem to align with Brazilian culture, which generally does not value the number of words. For example, the instrument indicates that children between 42 and 48 months of age should speak approximately 1,000 to 1,500 words. However, many parents find it difficult to know whether their child's vocabulary falls within this range. The scarcity of validated instruments that consider the country's linguistic and cultural diversity could result in assessments

that do not accurately reflect what is expected in terms of the number of words for each age group. Thus, parents' difficulty in estimating this number may have led to the lack of response to this question, showing the complexity of assessing child vocabulary.

Because the instrument includes eight skills, it becomes long; therefore, it was suggested that it be used via an application, as already occurs in English.

The translation of *Jornada da Criança* does not intend to exhaust the linguistic assessment of children up to 6 years of age, but rather seeks to offer a perspective on language production development for reference purposes. The milestones cited by the instrument will guide the work of health professionals, particularly speech-language pathologists who work with families. The application of this instrument prompts reflection on developmental milestones among professionals and family members, as well as the realignment of therapeutic goals and family guidance.

It is understood that there are limitations in interpreting developmental milestones in isolated assessments, which require socioeconomic and nutritional issues and human diversity. One controversial study⁽¹⁷⁾ reports conflicting results between the expressive language domain found in its research and those determined by the CDC in children in the United States.

As a first step in this work, the translation sought to preserve the original text and adapt the grammatical and cultural requirements so that, in the next stage, validation, it may be possible to offer another assessment tool capable of monitor child development, including the advantages of systematic monitoring of the child's progress, preventive measures in detecting delays, and the instrumentalization of parents and professionals in decisions about interventions to meet the child's needs and guide conversational exchanges, thereby supporting the child's progress and that of their family members.

The pretest demonstrated the applicability of the instrument across different age groups and led to the suggestion that the item on Brown's stages be excluded. The next stage will be to validate the robustness of the assessment instrument and perform a qualitative analysis of the data collected. This analysis will focus on the relationships between the eight proposed skills and the different age groups of the participants. This process will provide a better understanding of how the skills develop throughout the stages of growth.

CONCLUSION

The cross-cultural translation of the instrument A Child's Journey was completed, and in this version it is entitled *Jornada da Criança*. The need for new culturally adapted instruments is in line with practices that respect and value cultural diversity and follow contemporary advances. A multidisciplinary team that includes children, family members, and health and education professionals makes all the difference.

Updated instruments can provide more accurate and relevant measurements that reflect the child's condition and progress better. Continuously updating assessment tools allows healthcare professionals and family members to personalize care based on the child's individual needs in their context. This updating is essential to ensure that health services and clinics rely on best practices and the latest scientific evidence, benefiting children and their family members.

ACKNOWLEDGMENTS

To our colleagues Ana Luiza Gomes Pinto Navas, Caio Augusto Buratti Penido, Carlos Felipe Navas, Fernanda França and Miriam da Silva Ferreira.

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Appendix 1. Translation of the material: general instructions

The final version of the general instructions for the instrument *Jornada da Criança* provides guidelines on the typical development of children from birth to 6 years of age in the areas of hearing, receptive language, expressive language, speech articulation, play, cognition, pragmatics, and literacy (Chart 1).

During the first 24 months, developmental skills are assessed at three-month intervals (e.g., 0-3 months or 3-6 months). Skills that typically emerge every six months are assessed semiannually (e.g., 0-6 months). After the first year of life, developmental skills are also assessed every six months (e.g., 24-30 months). Similarly, skills that typically emerge every year are assessed annually (e.g., 24-36 months).

At each stage, children are assessed according to competencies, resulting in one of the three outcomes: goal (G), meaning the child is unable to perform the task, and the evaluator's goal is to develop the skill; emerging (E), meaning the child is able to perform the task, but not systematically; and mastery (M), meaning the child has already consolidated that skill.

The "goal" indicator refers to a skill expected at the child's age or developmental stage, but one that is not yet fully under the child's control. It is crucial to record the date on which a skill was classified as a goal, and there is a column for this in the instrument. All competencies included in this document should be monitored, but not all of them need to be the object of intervention. The therapists' clinical judgment will guide the appropriate selection of goals.

The "emerging" indicator designates that a skill is expected for the child's age or developmental stage, but is still inconsistent across different occasions (for example, approximately 50% observed mastery), or may be elicited with support. In this case as well, it is important to record in the specific column the date on which a skill is beginning to emerge.

The "mastery" indicator shows that a skill expected for the child's age or developmental stage has been consolidated, i.e., the child performs it independently and consistently across various contexts (e.g., approximately 90% observed mastery). Likewise, the date on which this mastery was achieved should be recorded in the appropriate column.

Most competencies will have a G, E, or M marker. However, some competencies indicate typical development rather than a specific milestone. In these cases, only M will be available.

To select appropriate goals, it is essential to know the child's current level of performance, that is, which skills they have already mastered. Once this has been determined, goals are selected and directed between the mastered skill and the next developmentally achievable skill. If a child does not demonstrate adequate progress in a given skill or domain, this may be considered a reason for concern or a warning sign. In the case of warning signs, developing a specific skill or domain may require extra attention and focus.

Figures 1, 2, 3, and 4 are examples of the proposed skills to be observed in each age group, and the complete translated material, approximately 100 pages long, will be made available by MED-EL.