

## What Skills Should Be Acquired in Pre-School Education?

### Que Competências Devem ser Adquiridas na Educação Pré-Escolar?

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#### INTRODUCTION

Healthcare professionals, both in primary and secondary healthcare settings, who deal with children on a daily basis are often asked about school readiness, that is, whether a child formally possesses the necessary skills to successfully integrate primary education.

To answer this question, it is essential to be familiar with the normative neurodevelopment expected at preschool age and the necessary skills for the successful learning process of reading, writing and calculating. The fulfilment of these requirements will determine whether the child is ready to enroll in primary school or not.

#### PSYCHOMOTOR DEVELOPMENT

Children are beings in constant motor, cognitive, emotional, and social development. In this dynamic process, the definition of stages and milestones makes it possible to monitor progress, allowing, however, for permissive variability. Therefore, it is important to know what is considered normal and to recognize possible warning signs, take an opportunistic approach during consultations and evaluate the findings observed, as well as any concerns from family members and teachers.<sup>1</sup>

The systematic application of screening instruments increases the sensitivity in detecting deviations from normality.<sup>1</sup> The Modified Mary Sheridan Developmental Assessment Scale is an example of a screening instrument that has been widely used for several decades. This document is an adaptation of the research work carried out by Dr. Mary D Sheridan in the publication "The Developmental Progress of Infants and Young Children" in 1968.<sup>2</sup> This work focused mainly on diagnosing and managing deviations from normal psychomotor development. Its modified version, on the other hand, also focuses on prevention, including actions designed to stimulate and promote development. Although this scale is not specifically standardized for the Portuguese population, it incorporates the National Child and Youth Health Program, formulated in 2013 by the Portuguese Directorate General of Health, and integrates the computer programs used in primary healthcare. The different milestones expected for each age are exemplified in Table 1.

The developmental milestones listed in Table 1, as well as the scarce warning signs mentioned, namely "the presence of hyperactivity and concentration difficulties, incomprehensible language, phonetic substitutions and stuttering, and behavioral disorders"<sup>2</sup> are, however, clearly not enough to predict a child's school readiness.

#### PRESCHOOL EDUCATION

There is a high level of consensus on the importance of preschool education (PSE), particularly in the development of cognitive, motor, and social skills, as well as its long-lasting impact on children's academic performance and long-term well-being.<sup>3</sup> It is, therefore, not surprising that PSE is compulsory in 18 countries of the Organization for Economic Co-operation and Development (OECD). In Portugal, however, PSE is optional,<sup>4</sup> targeting children between the age of three and the age at which they enroll in primary school. Surprisingly, despite being non-compulsory, more children are starting PSE earlier in Portugal than the average in other OECD countries.<sup>5</sup>

Primary school education has many goals, namely, the stimulation of the child's expressive and social abilities, the development of a sense of morality and responsibility, and the development of autonomy in day-to-day activities. In addition,

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it is a window of opportunity to detect possible difficulties and/or disorders and provide early referral.

Although each preschool teacher builds their own curriculum, they follow the Directorate-General for Education's curriculum guidelines for PSE, covering three content areas: 1) personal and social training; 2) expression and communication; 3) knowledge of the world.<sup>3</sup>

In the personal and social development area, children are encouraged to: identify their individual characteristics (name, age, sex); recognize similarities and differences between their peers; carry out essential daily tasks with increasing autonomy (e.g., washing and dressing themselves, using cutlery); know how to wait for their turn in a dialogue or in a game.

The area of expression and communication encompasses various domains, such as physical and artistic education, oral language and approaches to writing and mathematics, which allow children to acquire fundamental skills for learning in these and other domains, both in their childhood and throughout their life. In physical education, the child is encouraged to: master movements that involve motion and balance (e.g., running, jumping, climbing), as well as manipulation (e.g., throwing and catching a ball); progressively internalize the body figure in relation to the surroundings. Artistic education includes the different artistic languages, such as plastic expression, music, dance and theatre, which enrich the child's possibilities for communication and expression. In the field of oral language and approach to writing, children are encouraged to: identify the different segments of sentences and their elements (known as phonological awareness); recognize the letters of the alphabet, distinguish between vowels; distinguish between upper and lowercase letters; recognize the directional sense of writing; take pleasure in reading. Mastering these fields undoubtedly eases the process of learning how to read and write in the future.

In mathematics, children are encouraged to: recognize the numbers from one to 10 and understand what they represent; recognize that addition means putting two groups together and subtraction means taking from one group; name geometric shapes; identify relative positions; compare two objects in terms of size and weight. This content will make learning simple calculations easier.

In the area of world knowledge, children are encouraged to: recognize basic time units (day, week, year); describe accounts of events, respecting their chronological order; describe daily itineraries; identify professions and services in their familiar environment.

## SCHOOL READINESS

In Portugal, according to the Decree-Law 46/86 of the October 14, 1986, children who reach the age of six by the 15<sup>th</sup> of September of the current year are admitted to primary school, while those who reach the age of six between the 16<sup>th</sup> of September and the 31<sup>st</sup> of December are admitted on a conditional basis, depending on the vacancies available and their parent's consent.<sup>4</sup>

The transition to primary school represents a decisive moment in any child's life, influencing their educational success and their social and emotional balance. It is, therefore, understandable that school readiness is a topic that raises questions and concerns on behalf of parents and guardians.

Although school readiness is a topic that still raises questions, both in terms of its definition and evaluation,<sup>6</sup> the Portuguese curriculum guidelines for PSE indicate three criteria that suggest that a child will have a successful enrolment in primary school: 1) The child's group behavior, namely their ability to follow orders; 2) The indispensable skills for the formal learning of reading, writing, and mathematics, namely, being aware of the correspondence between the oral code and writing, and having some basic concepts of space, time and quantity; 3) Their attitude towards learning, that is, showing curiosity and pleasure in the process.<sup>3</sup>

The evaluation of a child's readiness to enroll in primary school is carried out by the school. However, in the case of children enrolling on a conditional basis or postponing their enrollment, parents can seek advice from other education professionals, as well as healthcare professionals. The latter should, based on the above, assess the child's development and acquired competences, weighting the benefits of enrolling in primary school *versus* staying in preschool for another year.

## CONCLUSION

Healthcare professionals who work with children daily must consider the psychomotor development and learning goals required for primary school so that they can provide parents with appropriate guidance, advise them on how to stimulate their child's specific skills, and, when necessary, refer them to a specialized professional. The right guidance for each child will largely determine their academic success.

## PREVIOUS AWARDS AND PRESENTATIONS

This article was presented during the Pediatrics Service's weekly meeting at Centro Materno Infantil do Norte and at Unidade de Saúde Familiar Despertar, both integrating Unidade Local de Saúde de Santo António.

## AUTHOR CONTRIBUTIONS

MBC, SS: Study conception and design, writing and critical review of the manuscript.

JQ: Study conception and design, critical review of the manuscript.

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## COMPETING INTERESTS

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Table 1 – The Mary Sheridan Developmental Assessment Scale

	18 months	2 years	3 years	4 years	5 years
<b>Posture and large movements</b>	<ul style="list-style-type: none"> <li>- Walks well</li> <li>- Picks up toy from the floor</li> </ul>	<ul style="list-style-type: none"> <li>- Runs</li> <li>- Walks upstairs and downstairs, two feet to a step</li> </ul>	<ul style="list-style-type: none"> <li>- Can stand and walk on tiptoe</li> <li>- Can stand momentarily on one (preferred) foot when shown</li> <li>- Walks alone upstairs using alternating feet, comes downstairs two feet to a step</li> </ul>	<ul style="list-style-type: none"> <li>- Stands on one (preferred) foot for 3 - 5 seconds and hops on preferred foot</li> <li>- Walks or runs alone up and down stairs, one foot to a step</li> <li>- Can stand, walk and run on tiptoe</li> </ul>	<ul style="list-style-type: none"> <li>- Can stand on one foot 8 - 10 seconds, right or left, and usually also stands on preferred foot, with arms folded</li> <li>- Skips on alternate feet</li> </ul>
<b>Vision and fine movements</b>	<ul style="list-style-type: none"> <li>- Builds tower of three cubes</li> <li>- Spontaneous to and fro scribble, showing preference for using one hand</li> <li>- Enjoys simple picture books, turning several pages at a time</li> </ul>	<ul style="list-style-type: none"> <li>- Builds tower of six cubes</li> <li>- Spontaneous circular scribble. Imitates vertical line</li> <li>- Enjoys picture books, turning pages singly</li> <li>- Recognises familiar adults in photos after shown once</li> </ul>	<ul style="list-style-type: none"> <li>- Builds tower of nine to ten cubes</li> <li>- Copies circle. Imitates a cross</li> <li>- Matches two to three primary colours, usually red and yellow, but may confuse blue and green</li> </ul>	<ul style="list-style-type: none"> <li>- Builds three steps with six cubes after demonstration</li> <li>- Copies cross</li> <li>- Matches and names four primary colours correctly</li> </ul>	<ul style="list-style-type: none"> <li>- Builds four steps from ten cubes</li> <li>- Copies square and, at 5 ½ years, a triangle</li> <li>- Counts fingers on one hand with index finger of other</li> <li>- Names four or more primary colours and matches 10 or 12 colours</li> </ul>
<b>Hearing and speech</b>	<ul style="list-style-type: none"> <li>- Uses between six to 26 recognisable words and understands many more</li> <li>- Points to own or doll's hair, shoes, nose, feet</li> </ul>	<ul style="list-style-type: none"> <li>- Refers to self by name</li> <li>- Talks to self continually in long monologues during play, but may be incomprehensible to other</li> <li>- Puts two or more words together to form simple sentences</li> <li>- Echolalia almost constant</li> <li>- Names familiar objects</li> </ul>	<ul style="list-style-type: none"> <li>- Tells full name, sex, and sometimes age</li> <li>- Large vocabulary, intelligible even to strangers</li> <li>- Speech still contains many immature phonetic substitutions and unconventional grammatical forms</li> </ul>	<ul style="list-style-type: none"> <li>- Gives full name, home address and usually age</li> <li>- Speech grammatically correct and completely intelligible</li> <li>- Shows only a few immature phonetic substitutions</li> </ul>	<ul style="list-style-type: none"> <li>- Gives full name, age and usually birthday. Gives home address</li> <li>- Speech fluent, grammatically conventional and usually phonetically correct except for confusions</li> </ul>
<b>Social behaviour and play</b>	<ul style="list-style-type: none"> <li>- Lifts cup alone. Holds cup between both hands and drinks without much spilling</li> <li>- Holds spoon and gets food safely to mouth</li> <li>- Beginning to give notice of urgent toilet needs by restlessness and vocalisation</li> <li>- Fascinated by household objects and imitates simple, everyday activities</li> </ul>	<ul style="list-style-type: none"> <li>- Puts on hat and shoes</li> <li>- Feeds self with a spoon</li> <li>- Lifts cup and drinks well without spilling</li> <li>- Asks for food and drink</li> </ul>	<ul style="list-style-type: none"> <li>- Can pull pants up and down but needs help with buttons and other fastenings</li> <li>- Washes hands but needs adult supervision with drying</li> <li>- Eats with a fork and spoon</li> </ul>	<ul style="list-style-type: none"> <li>- Can dress and undress except for laces, ties and back buttons</li> <li>- Shows concern for younger siblings, and sympathy for playmates in distress</li> <li>- Understands taking turns as well as sharing</li> </ul>	<ul style="list-style-type: none"> <li>- Uses a fork and knife competently</li> <li>- Washes and dries face and hands but needs supervision for the rest</li> <li>- Dresses and undresses alone</li> <li>- Comprehends the need for order and tidiness, but needs constant reminders</li> </ul>