

Development and Assessment of Writing and Spelling Skills: Prerequisites, Writing Systems, and Educational Implications

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Abstract: Writing and spelling are complex developmental skills that are influenced by the interaction of motor, cognitive, perceptual, and linguistic factors. This study examines the basic prerequisite skills required for writing acquisition, with an emphasis on kinesthesia, gross and fine motor skills, and visuomotor coordination. At the same time, it highlights the role of cognitive processes, such as memory, attention, and executive function, which support spelling accuracy and written expression. In particular, emphasis is placed on writing literacy and emergent writing in preschool age as foundations for the systematic development of written language. In addition, differences in development and spelling processing between alphabetic, syllabic, and logographic writing systems are examined, as well as the types of spelling errors associated with each system. Finally, the basic means of spelling assessment are presented, such as weighted tests, rubrics, informal tests, and linguistic error analysis. It is crucial to combine quantitative and qualitative assessment tools in order to accurately identify students' spelling deficits with the aim of designing targeted pedagogical and therapeutic interventions.

Keywords: Writing, spelling, emergent writing, prerequisite skills, writing systems, spelling assessment.

INTRODUCTION

Writing is defined as a complex cognitive-motor process. It contributes to the representation of spoken language by converting linguistic ideas and meanings into written symbols, according to the rules of a specific linguistic and cultural system. It is a symbolic, visual system for recording language. Its discovery contributed to the cultural development of humankind. Its acquisition begins before systematic teaching in school and requires the development of a multitude of cognitive, linguistic, and motor skills. The development of spoken language, vocabulary, and narrative ability contributes to the development of writing. Writing is not limited to linguistic or cognitive processing but requires the effective integration of sensory systems and the coordination of linguistic, executive, visual-perceptual, and motor mechanisms (Berninger & Richards, 2010).

This paper initially refers to the prerequisite skills that are developed in preschool age and are a key factor for a successful transition to conventional writing in the early school years, such as the development of sensory-motor skills (Feder & Majnemer, 2007), emergent writing, which serves as the foundation for literacy (Puranik & Lonigan, 2011), and the development of cognitive skills (Feder & Majnemer, 2007), such as memory and executive functions. Also, the types of errors in relation to writing systems, alphabetic, syllabic, and logographic, are examined, and finally, the means of assessing spelling skills, weighted scales, informal tests, rubrics, and qualitative error

analysis. The aim of the above is to identify students' deficits in order to design educational interventions for improving writing skills.

Prerequisite Developmental Skills for Mastering Writing

The skills required for learning to write are developed and cultivated during preschool age and include visual perception, visual-motor coordination, kinesthesia, gross and fine motor skills, auditory perception, memory, lateralisation, tripod grip, phonological and morphological awareness, orientation, and proper posture. The prerequisite sensory, motor, and cognitive skills constitute the functional foundation upon which writing literacy is built, enabling the child to focus on higher-order processes such as organizing ideas, meaning-making, and the communicative function of written language, which are key dimensions of writing literacy.

Visual perception plays a crucial role in recognizing shapes, spatial relationships, and boundaries, which are essential for organizing writing in space. Visual perception is the brain's ability to understand and interpret visual information. Visual perception affects the correct calculation of space, the identification of details, the integration of visual stimuli, identification, discrimination, copying, size determination, orientation, and the perception of spatial relationships. Difficulties in visual perception

negatively affect motor skills and academic success (Cheatum & Hammond 2000).

Spatial orientation is closely linked to determining our position in relation to objects in our environment. Mastering basic concepts such as up, down, low, high etc. requires the development of orientation skills. Good orientation helps in acquiring the skill of perceiving the writing of letters. Stabilized lateralization, the dominance of one side of the body, and in the case of handwriting, helps in acquiring the skill of writing. Non-homogeneous lateralization may indicate neuropsychological immaturity and is often associated with difficulties in spatial orientation and the ability to learn to write (Beery, E. & Beery, A., 2010).

Visual-motor coordination, i.e., the ability to integrate visual information and motor response, allows children to copy shapes and letters accurately, maintain the correct alignment of lines in space, and control the flow of the writing instrument, elements that are directly related to the coherence and legibility of written production (Weil & Amundson, 1994; Beery & Beery, 2010). In preschool age, as this ability matures, there is an improvement in both the speed and accuracy of forming shapes and letters, making visuomotor integration a strong indicator of readiness for learning to write (Lu *et al.*, 2023). Visual-motor coordination develops from the first months of a child's life. It is a complex mental ability to process information received from the visual system in order to coordinate and direct the body appropriately to perform an activity with precision (Beery, E. & Beery, A., 2010).

Good visual-motor coordination helps children engage in sports, do puzzles, cut paper, write, paint, take care of themselves, use tools, perform desired body movements (crawling, walking, running), and generally engage successfully in daily activities (Daly *et al.*, 2003). Deficiencies in this area have been associated with difficulties in the accuracy and legibility of writing (Feder & Majnemer, 2007) and more general difficulties in daily functioning. The most common difficulties in visuospatial skill mechanisms in written performance are mirror writing, reversal of letters and syllables, lack of spacing between words, messy writing, difficulty in dictation, letter formation, and organization of writing space. It can be assessed and cultivated through activities such as games, paper activities, maze games, puzzles, crafts, etc.

Kinesthesia is the ability to perceive the position and movement of body parts without visual guidance. It is the result of information coming not only from internal peripheral areas of the body but also from external areas, which contributes to maintaining dynamic balance and control of functional movements/skills. The proprioceptive system is a particularly important sensory system, which, with receptors in muscles, ligaments, and joints, helps in the perception of body parts in relation to space, the relationship between body parts, muscle strength, and coordination. The sense of movement through the proprioceptive system is also known as kinesthesia. The proprioceptive system is closely linked to the tactile system in interpreting "somatosensory" stimuli. Difficulties in visual perception often lead to difficulties in body perception, and therefore in proprioceptive sensation. Through kinesthetic information, the child regulates the strength, direction, and flow of movements required to form letters (Ayres, 2005). Research shows that deficits in kinesthetic processing are associated with difficulties in the fluidity and accuracy of writing (Cornhill & Case-Smith, 1996). Kinesthesia is related to writing, as it contributes to the correct use/grip of the pencil, the pressure exerted, the tripod grip, and the writing rhythm, with the aim of forming letters correctly (Gwenyth *et al.*, 2010).

Gross motor skills are a child's ability to perform activities that activate large muscles or muscle groups and form the basis for organizing and performing the more refined movements necessary for everyday activities such as dressing, feeding, writing, etc. Control of the trunk and shoulder girdle provides the stable foundation on which fine motor skills develop. Adequate muscle strength and postural stability allow the child to maintain a functional posture while writing, reducing fatigue and increasing endurance in performing graphomotor tasks (Case-Smith, 2013). The existence of coordination difficulties in gross motor skills creates difficulties during graphomotor activities and in the proper coordination of eye-hand movements (Feder & Majnemer, 2007).

Fine motor skills are the coordination of the small muscles in the hands and fingers and are a fundamental prerequisite for writing, as they are related to the coordination of the muscles that enable writing, holding small objects, self-care, and many other daily activities (Gaul & Issartel, 2016). Skills such as finger differentiation, palm stability, and bilateral coordination support letter

formation and writing instrument management (Zwicker & Hadwin, 2009). The development of fine motor skills helps students master the skill of writing. Proficiency in fine motor skills during preschool age predicts future graphomotor performance (Cameron *et al.*, 2012).

Developing a functional pencil grip is considered crucial in the process of learning to write, as it directly affects control of the writing instrument, stability, and the quality of graphomotor movements. The way in which the fingers apply and maintain the pencil affects the grip and application forces on the tool's axis, which in turn shape the ability to form letters with precision and continuous flow (Lin *et al.*, 2022). The stability and effectiveness of the grip are related to the muscle strategies used during writing, while different ways of holding the pencil appear to affect fatigue and overall performance in prolonged writing activities (Farris *et al.*, 2022). The process of developing a functional grip begins in the first months of life, with crawling and scooting. This is followed by a developmental path through immature patterns of grasping with the whole palm (palmar), to grasping with all fingers, and then with the tips of 3 or 4 fingers. By the age of 5, most children have acquired the fine motor skills necessary to develop and stabilize a mature pencil grip. The arches of the hand have developed, the two sides of the palm function independently, objects can be handled deftly in the palm, the movements of each finger are isolated from the movements of the others, so at this stage of development they are able to master the skill of writing.

Posture affects not only the child's physical comfort while writing, but also the quality of the graphomotor results. Correct body position and stability while writing are associated with improved clarity, direction, and consistency of written marks, while changes in posture, such as lack of back support or unstable body positioning, can increase errors and reduce letter consistency (Wever *et al.*, 2025). Research by Wever *et al.* (2025) showed that improving posture after interventions or guidance had a moderate and statistically significant improvement in writing, such as line rhythm and alignment. Another study by Kaplan *et al.* (2014) on a school population showed that children who maintain a stable and correct body position have less need for frequent corrections, less body movement while writing, and greater legibility of their writing compared to children with unstable posture. Correct body

posture, trunk alignment, and a slight forward lean with the forearms resting on the table and the elbows at a 90° angle contribute to good writing performance.

Cognitive skills such as working memory contribute to the acquisition of writing, as they help children process information simultaneously during written production. At a developmental level, memory is necessary for organizing ideas, planning sentences, and following spelling rules during text composition (Berninger *et al.*, 2015). Memory is a predictor of written expression and spelling skills, highlighting the structural role of working memory in written language (Berninger & Amtmann, 2003; Kaiser *et al.*, 2022). This means that children with more developed working memory can keep words and sentence structures active in their minds as they write, enhancing both the consistency and quality of their writing.

In addition, executive functions—such as attention, self-regulation, planning, supervision, and information processing—have a significant impact on writing acquisition, as they help children organize their thoughts, maintain the goal of written production, and self-monitor errors during text composition (Sedita, 2025). Memory is the ability to retain and reproduce information we receive from the outside world. In short-term memory, information is retained for a short period of time, usually no more than 30 seconds. On average, 7 pieces of information are retained, with a deviation of 2 pieces. Long-term memory stores information from short-term memory for an unlimited period of time. Successful encoding contributes to the successful retrieval of information. Memory is directly related to the memorization of letters, words, and spelling. In developmental studies, a child's ability to manage attention and work with multiple tasks simultaneously emerges as a strong predictor of writing and reading performance in school age (Karimi *et al.*, 2025; Sedita, 2025). Therefore, strengthening executive functions and memory can support the automation of writing, the qualitative reproduction of letters, and the enrichment of written language.

The Development of Writing Literacy in Preschool Age

Emergent writing is an integral part of emergent literacy and refers to children's early attempts to create and communicate through written symbols before they have been formally taught to write. The concept of writing literacy is a complex

system of skills, knowledge, and strategies that enable an individual to use writing for communicative purposes. This concept includes not only the formation of letters, but also the use of symbols, lines, "inventive" spelling, and simple words to express meaning, reflecting the child's understanding of the function of writing as a communication tool (Puranik & Lonigan, 2011; Sarama & Clements, 2009). Emergent writing is directly linked to skills such as knowledge of printed code and phonological awareness, used as an important predictor of successful acquisition of writing and reading skills at school age (Puranik & Lonigan, 2011). When procedural skills are immature, children expend a large portion of their cognitive resources on the mechanical execution of writing, which limits their ability to focus on the meaning and organization of written language (Berninger *et al.*, 2015).

Research data shows that emergent writing skills develop gradually through a structured but flexible process: firstly, children experiment with spatial and unconventional symbols, then they organize writings that resemble letters or names, and finally they move on to early forms of inventive spelling that reflect phonological awareness (Puranik & Lonigan, 2011; Lonigan *et al.*, 2018). According to research by Purank *et al* (2014), emergent writing involves distinct dimensions such as conceptual knowledge, procedural knowledge, and generative knowledge, which interact to support the completion of written language. The conceptual knowledge of writing concerns the child's perception that writing is a symbolic system that conveys meaning, differs from drawing and reading, follows specific conventions, and is used to communicate ideas, information, and experiences. Procedural knowledge of writing concerns the execution of actions, the use of tools, and the application of basic conventions that enable written production. In the context of emergent writing, knowledge manifests itself through unconventional but systematic attempts by the child to represent language in writing, such as inventive spelling.

Emergent writing practices focus on the value of rich, everyday writing experiences in the child's environment. Programs such as Kid Writing, which incorporate writing based on personal experiences, give children opportunities to express authentic ideas with adult guidance and support, enhancing both motivation and writing ability from an early age (Brandt & Clinton, 2002). In addition, the creation of "writing environments" in

the classroom and the systematic integration of writing activities related to printed language have been shown to promote improvements in emerging writing skills, especially when combined with phonological awareness and literacy activities.

Emergent writing represents a comprehensive and developmentally integrated system of skills that begins in early childhood and serves as a foundation for formal writing instruction. Writing is viewed as an emergent literacy skill that develops progressively prior to systematic teaching and is closely associated with children's cognitive, social, and emotional development. Targeted educational support, rich exposure to written language, and the integration of writing within everyday communicative practices play a crucial role in strengthening and advancing written expression.

Assessment of Spelling Skills in Relation To Writing Systems

Correct spelling is the established conventional way of writing each word in every language based on the principles of its etymological-historical origin, which concerns the root and the elements that surround it, constituting the theme of the word and the principles of its grammatical-syntactic function. The correct spelling of a word brings together different types of linguistic information. The assessment of orthographic writing aims to detect the degree of accuracy in word production, as well as the cognitive and linguistic skills that contribute to correct writing. The assessment process includes quantitative measurements of student performance and qualitative analysis of the type of errors and their classification into categories. Qualitative categorization facilitates assessment and intervention in writing education (Bahr *et al.*, 2012).

Spelling errors are classified based on the linguistic structures that are violated, in relation to the orthographic system that characterizes natural languages: alphabetic, syllabic, or monographic. Spelling systems that consistently reflect the relationship between sound and letter or grapheme are transparent, whereas spelling systems in which the correspondence between sound and letter or grapheme is not consistent and systematic are opaque (Protopapas *et al.*, 2013). Languages such as Greek, Spanish, and Finnish are considered relatively transparent alphabetic languages, while others, such as English, are characterized by greater orthographic opacity due to historical and morphological factors (Ziegler & Goswami, 2005).

The alphabetic system is based on the principle that written symbols (letters or graphemes) correspond primarily to phonemes, i.e., the smallest units of sound in a language. In this system, reading and writing require the development of phonological awareness and the ability to analyze and synthesize phonemes (Share, 1995). The acquisition of spelling in alphabetic systems evolves from phonological strategies to the integration of orthographic and morphological rules, which is also reflected in the types of errors observed during development. In alphabetic systems, such as Greek, when children begin to learn to read and write, they attach great importance to the phonetic elements of words and try to accurately reproduce their phonological information. Acquiring phonological awareness in preschool age will help in the consistent matching of sounds and graphemes based on the phonological identity of the word. Phonological awareness is the development of a child's ability to recognize the distinct phonological building blocks of speech, syllables, and phonemes, as well as the ability to analyze words into these phonemic elements (Konza, 2011). Phonological awareness is a key predictor of the development of spelling ability, as it allows children to recognize, isolate, and combine phonemes in order to derive correct sound-letter correspondences, a skill that is fundamental to word decoding and encoding (Share, 2008). Phonetic spelling is assessed by dictating words and sentences in order to identify phonetic spelling errors. Phonological errors are the first to disappear in the early school years (Bahr *et al.*, 2012) unless students have phonological deficits or learning difficulties.

In languages with an alphabetic writing system, where letters represent phonemes, spelling development is not limited to simple phonological correspondence between sounds and graphemes, but also involves complex morphological structures, such as appropriate productive morphemes, affixes, roots, and synthetic units. Therefore, knowledge of spelling rules and patterns includes general spelling knowledge and lexical spelling knowledge. General orthographic knowledge refers to knowledge of the rules, patterns, and constraints that govern the orthographic system of a language, while lexical orthographic knowledge refers to the storage in memory of the exact orthographic form of specific words (Apel 2011). (Apel 2011). For example, in Greek, when a student needs to render the phoneme /i/, they must choose between three

different spellings or three different combinations of phonemes, taking into account rules of grammar or lexical orthographic knowledge. The ability to recognize and produce correct morphological patterns and orthographic knowledge of common words is related to orthographic performance and the development of an orthographic lexicon that facilitates rapid retrieval and copying of words in written texts. Furthermore, both forms of orthographic knowledge have been recognized as important for reading success (Conrad *et al.* 2013; Querido *et al.* 2020)

Morphological awareness is the ability to identify and manipulate morphemes within words. Morphological errors that students may make include inflectional errors, incorrect use of endings (Bahr *et al.*, 2012; Nunes & Bryant, 2006), errors in productive morphemes, incorrect selection or formation of derived words (Carlisle, 2003; Angelelli *et al.*, 2014), errors where the root of the word is altered in derived or inflected forms, errors in compound words (Kuo & Anderson, 2006). Studies in primary school students have shown that morphological awareness is associated with orthographic and reading development in different alphabetic languages (Silliman *et al.*, 2006; Goodwin & Ahn, 2010).

Morphological errors reflect difficulties in using morphological rules and morphological changes that affect the meaning or function of a word. Changes in morphological elements, such as plural endings or verb tense forms (e.g., "walk" instead of walking), indicate that the learner does not have a complete understanding of morphological patterns. Qualitative analysis of such errors can reveal whether an error reflects ignorance of a rule, violation of grapheme-phoneme correspondence, or failure to recall a word, all of which are critical for targeted educational interventions. Research data show that students respond more effectively to reading and writing in systems with high grapheme-phoneme correspondence (Landerl, 2006). The assessment can focus on activities such as filling in blank words with letters or syllables to assess final or historical spelling, filling in blanks in sentences to assess the student's morphological knowledge, as well as activities involving the distinction and recognition of different parts of speech, nouns, adjectives, verbs, adverbs, pronouns, etc. In addition, it can focus on activities involving the completion of sentences or paragraphs in order to assess the syntactic structure and use of the basic structural elements of the sentence or paragraph. In addition, the assessment

may focus on the degree of acquisition of graphomotor skills, graphophonemic awareness, correct letter writing, uniform size, adherence to writing conventions, correct use of lowercase and uppercase letters, maintaining spacing between words, use of punctuation, adherence to spelling, grammar, and syntax rules, correct sentence and paragraph structure, text organization, and paragraph.

Etymology is related to spelling, especially in alphabetic writing systems. Knowing the etymological origin of a word helps maintain the morphological and semantic stability of writing and facilitates the understanding of related words in the vocabulary (Treiman & Kessler, 2014). Research has shown that etymological and morphological awareness supports spelling accuracy, especially in words with opaque or historically determined spelling conventions. Students who understand the etymological relationships between words show greater consistency in spelling and fewer errors related to arbitrary spelling choices (Nunes & Bryant, 2006; Bowers & Kirby, 2010). Etymology acts as a bridge between morphological knowledge and spelling proficiency, enhancing a deeper understanding of written language.

In syllabic writing systems, each symbol corresponds to an entire syllable rather than an individual phoneme. A typical example is the Japanese kana system (hiragana and katakana), where each graphic symbol represents a consonant-vowel combination or a simple vowel (Daniels, 2018). Learning to write in syllabic systems is based less on phonemic analysis and more on the perception of syllabic units, the ability to recognize, recall, and accurately reproduce syllabic units. Consequently, spelling assessment examines the extent to which the student can correctly match the spoken syllable with the corresponding graphic symbol, as well as the consistency of this matching in different linguistic contexts (Daniels, 2018; Taylor & Taylor, 2014).

A key evaluation criterion concerns the accuracy of syllabic character selection, i.e., whether the student uses the correct symbol for each syllable of the word. The most common errors recorded are syllable substitutions, omissions, or confusion between syllables with similar phonological structures. In addition, the ability to manage specific syllabic rules, such as long vowel sequences, double consonant structures, or syllable modifications, is evaluated, where spelling

accuracy requires subtle phonological and visual discrimination (Perfetti, Liu, & Tan, 2005).

At the same time, the assessment of spelling in syllabic systems takes into account the lexical and visual-memory dimensions of writing. Given that the set of syllabic characters is finite but extensive, the student's ability to quickly and accurately recall graphic symbols from memory, as well as their fluency in writing them, is examined. Finally, in systems where syllabic elements coexist with other writing systems (e.g., kana and kanji in Japanese), the assessment is extended to the functional choice of the appropriate system depending on the lexical and morphosyntactic environment (Koda, 2007). Users of syllabic systems make fewer phonemic errors, but more syllable substitution errors compared to users of alphabetic systems (Perfetti & Liu, 2005).

Overall, the evaluation of spelling in syllabic systems focuses on the accuracy of syllabic matching, the stability of graphic representations, and the functional use of system conventions, providing valuable information about the developmental course of writing and the necessary teaching interventions.

The monographic or logographic writing system is based on symbols that represent whole words or morphemes, often in combination with semantic and phonological information. The best-known example is the Chinese writing system, where each character corresponds to a morpheme rather than directly to phonemes or syllables (DeFrancis, 1989). Mastering writing in monographic systems requires a high degree of visual memory processing and storage of a large number of symbols in the orthographic lexicon. Each written character usually corresponds to a morpheme and carries both semantic and phonological information, which makes spelling assessment a complex cognitive process (DeFrancis, 1989; Perfetti & Dunlap, 2008). The most common errors are related to visual confusion of characters, semantic substitutions, or partial reproduction of morphemes.

The evaluation of orthographic ability in logographic systems focuses primarily on the accuracy of character reproduction, i.e., the correct rendering of their individual structural elements (roots, graphemes, and logographic elements). In particular, importance is attached to the structural correctness of the character (e.g., correct layout and proportion of lines), as well as to the use of the

appropriate character to represent the specific meaning and morphological function. Common errors include omissions or substitutions of graphemic elements, as well as confusion between visually or semantically similar characters (Packard *et al.*, 2006).

A second key assessment criterion concerns orthographic memory and character recall speed. Given that logographic systems require the storage of a large number of visually complex symbols, the student's ability to recall and write characters correctly without a visual model is examined, as well as the consistency of writing in different contexts. Research shows that spelling performance is closely related to visuospatial memory, knowledge of semantic radicals, and understanding of the internal structure of characters (Shu & Anderson, 1997; Liu *et al.*, 2013).

Finally, spelling assessment in monographic systems also includes the functional use of characters, i.e., the ability to choose the correct character in words with the same pronunciation but different meanings. This dimension highlights the decisive role of semantic and morphological awareness in spelling accuracy, in contrast to alphabetic systems where phonological awareness plays a primary role. Therefore, the analysis of spelling errors in logographic systems provides valuable information about the level of development of students' morphological knowledge and visual-semantic processing (Perfetti & Liu, 2005).

MEANS OF EVALUATING ORTHOGRAPHIC WRITING

Spelling assessment can be carried out using a variety of means and tools, which differs in terms of their degree of standardization, diagnostic accuracy, and pedagogical purpose. In international literature, the main types are weighted scales, analytical rubrics, and informal assessment tools, which are often used as supplements (Berninger & Richards, 2010; Graham *et al.*, 2012).

Standardized scales are standardized assessment tools based on normative data (norms) that allow for the comparison of a student's performance with the reference population of their age or grade. They usually include dictation of words of increasing difficulty, evaluation of phrases or sentences, and quantitative scoring (number of correct/incorrect words).

Standardized tests provide reliability and validity indicators and are widely used for diagnostic purposes and to identify learning difficulties in writing. However, their quantitative nature often does not adequately reflect the type of spelling errors, making complementary qualitative analysis necessary (Bahr *et al.*, 2012).

Rubrics are criterion-based assessment tools that clearly describe performance levels in specific areas of spelling. In writing assessment, rubrics may include criteria such as phonological accuracy, application of spelling and morphological rules, consistency in word writing, and use of etymological and historical conventions.

Rubrics allow for analytical and formative assessment, enhance the transparency of criteria, and support feedback to students. Research shows that the use of rubrics contributes to the improvement of students' metacognitive awareness and self-regulation in writing (Andrade, 2005; Graham *et al.*, 2012). The use of assessment rubrics is a technique for assessing student performance, which includes assessment criteria, a detailed description of performance levels, a grading scale, etc. (Ajjawi *et al.*, 2018).

Qualitative error analysis is a specific means of assessing spelling, which examines the nature and linguistic level of errors (phonological, orthographic, morphological, etymological). Spelling assessment can also be carried out using informal assessment tools, such as spontaneous writing, dictation activities with immediate feedback, and dynamic assessment, which examines the student's response to writing instruction. These forms provide rich information about the functional use of spelling in authentic communicative contexts and complement standardized measures (Graham *et al.*, 2012).

CONCLUSIONS

Writing and spelling are multidimensional skills, the acquisition of which is not limited to the mechanical reproduction of graphemes, but requires the mature interaction of motor, perceptual, cognitive, and linguistic processes. The analysis of the prerequisite skills highlighted the decisive role of kinesthesia, gross and fine motor skills, visual-motor coordination, functional grip, and correct posture as fundamental bases for the development of writing, especially during preschool and early school age. At the same time, higher cognitive skills, such as memory, attention,

and executive organization, support the stability and accuracy of orthographic writing.

The approach to writing in the context of literacy highlights the importance of emergent writing and conceptual, procedural knowledge of writing, emphasizing that its development takes place through active participation in authentic, socially determined practices of written language. Furthermore, an examination of different writing systems (alphabetic, syllabic, and logographic) shows that spelling requirements and types of errors vary according to the linguistic and orthographic conventions of each system, which makes it necessary to adapt both assessment and teaching interventions.

Finally, spelling assessment is a multi-level and combined process, incorporating weighted tests, analytical rubrics, and qualitative analysis of spelling errors. This comprehensive approach allows for a more accurate representation of students' developmental profiles and supports the design of targeted and effective pedagogical and therapeutic interventions. Overall, the findings underscore the need for a holistic view of writing and spelling, both at the research and educational levels.

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