

Research Article

Specific Learning Disabilities (SLD): From Clinical Classification to Rehabilitation — Analyzing the Rise in Diagnoses and Proposing an Integrated Approach (Crispiani)

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Abstract

Introduction and Objective: Specific Learning Disorders (SLDs) are neurodevelopmental conditions characterized by persistent and significant difficulties in acquiring academic skills, such as reading, writing, and calculation, despite intact general intellectual functioning. Although these are not pathologies but rather "human conditions," they profoundly impact students' emotional well-being, self-esteem, and motivation, necessitating multidimensional support that extends to the family unit. This paper aims to analyze the complex clinical and statistical evolution of SLDs, specifically addressing the recent surge in diagnoses, and to propose a necessary paradigm shift centered on the "Crispiani Method" to move beyond current diagnostic limitations toward early, integrated, and effective habilitative models. **Method:** This study synthesizes national statistical data from the 2019/2020 and 2020/2021 school years, which reveal a significant rise in diagnoses to 5.3% and 5.4% respectively. The research employs a critical review of current pedagogical and neuropsychological literature, evaluating the effectiveness of traditional compensatory approaches versus innovative, evidence-based cognitive-motor training. Furthermore, it incorporates empirical findings from neurophysiological studies, specifically analyzing the impact of dual-task cognitive-motor protocols on anticipatory brain activity, as measured by the pN component. **Results:** The research highlights that the current Italian diagnostic model is often hampered by bureaucratic rigidity, late implementation (often delaying diagnosis until primary school), and significant geographical disparities in resource access. Conversely, the Crispiani Method offers a robust alternative by reconceptualizing dyslexia as a form of sequential dyspraxia—an executive function and spatio-temporal organization disorder. Empirical results demonstrate that replacing an exclusive reliance on passive compensatory tools with active, habilitative dual-task cognitive-motor training significantly enhances executive fluency, cognitive-motor coordination, and student autonomy. This approach acts directly on neuroplasticity, fostering anticipatory brain processes that are essential for long-term academic and personal success. **Conclusion:** To address the systemic crisis in SLD management, it is imperative to implement uniform preschool observation protocols, formalize professional support roles (such as pedagogues and educators) within the school environment, and prioritize early "pre-diagnosis" initiatives. By integrating neurobiological insights with advanced pedagogical methodologies, we can move beyond mere medicalization, ensuring scalable preventive models that facilitate the full realization of each student's potential, thereby transforming school inclusion from a formal regulatory requirement into a genuinely effective, evidence-based pedagogical practice that supports the student's holistic development and learning freedom.

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Received: 8 November 2025; **Accepted:** 3 June 2026; **Published:** 27 July 2026



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Keywords

Specific Learning Disorders, Rehabilitation, Crispiani Method

1. Introduction

Specific Learning Disabilities (SLD) represent a crucial challenge for modern education systems. They are not pathologies, but neurodevelopmental conditions that impact the acquisition of fundamental skills such as reading, writing, and arithmetic, even in the presence of adequate general intellectual functioning. This paper explores the clinical evolution, the statistical growth of diagnoses, and the innovative perspectives provided by the Crispiani Method. By critically analyzing current diagnostic frameworks and the impact of systemic interventions, the study proposes a paradigm shift toward early prevention and the enhancement of cognitive functions through habilitative, dual-task approaches.

I Disturbi Specifici dell'Apprendimento (DSA) rappresentano una sfida cruciale per i moderni sistemi educativi. Non si tratta di patologie, ma di condizioni neuroevolutive che impattano l'acquisizione di abilità fondamentali come lettura, scrittura e calcolo, pur in presenza di un funzionamento intellettuale generale adeguato. Questo documento esplora l'evoluzione clinica, la crescita statistica delle diagnosi e le prospettive innovative fornite dal Metodo Crispiani, proponendo un cambio di paradigma verso la prevenzione precoce e l'abilitazione delle funzioni cognitive.

Specific Learning Disabilities (SLD) represent a crucial challenge for modern education systems. They are not pathologies, but neurodevelopmental conditions that impact the acquisition of fundamental skills such as reading, writing, and arithmetic, even in the presence of adequate general intellectual functioning. This paper explores the clinical evolution, statistical growth of diagnoses, and innovative perspectives provided by the Crispiani Method, proposing a paradigm shift towards early prevention and the enhancement of cognitive functions.

2. Definition and Classification of Specific Learning Disorders (SLD)

SLDs (dyslexia, dysorthographia, dysgraphia, and dyscalculia) are characterized by persistent difficulties lasting at least six months, not explained by sensory, neurological, or sociocultural deficits. From a neurobiological perspective, they arise from the interaction between genetic, epigenetic, and environmental factors. The classification varies between mild forms, manageable with compensatory tools (Law

170/2010), and severe forms, which require specialized multidisciplinary intervention involving neuropsychiatrists, speech therapists, and pedagogists.

Nature and Diagnostic Criteria of DSA

Specific Learning Disorders (SLD) are a group of neurodevelopmental disorders characterized by persistent and significant difficulties in acquiring and using fundamental academic skills: reading (dyslexia), writing (dysorthographia and dysgraphia), and arithmetic (dyscalculia). The "specificity" of the disorder indicates that the difficulties are limited to one or more learning areas, leaving general intellectual functioning intact. For a diagnosis, these difficulties must persist for at least six months and be unexplained by intellectual, sensory, neurological deficits, or sociocultural disadvantage [2].

It is important to remember that learning disabilities (LDs) are not pathologies, but *disorders*, and can manifest themselves differently from child to child, from adolescent to adolescent. They can be classified into *mild or severe forms and the most appropriate treatment* is chosen based on their "severity".

In *mild forms of DSA*, the use of compensatory tools and dispensatory measures may be sufficient, both for learning at school and at home, in accordance with Law 170/2010. This means that the support of specialists is not necessary, or at least not in daily activities, although it should be noted that some cognitivist schools of thought do not favor the use of compensatory and dispensatory tools for learning disabilities.

Meanwhile, in *severe forms* of learning disabilities, more careful and targeted intervention is required with the support of specialists, for example child neuropsychiatrists or in closely related areas: *speech therapists, pedagogists and tutors* are the *main professionals* who can intervene in these cases.

Whether mild or severe, treatment for learning disabilities (LDs) must focus *not only on strengthening deficient skills*, but also *on the emotional and relational sphere*. The difficulties caused by learning disabilities significantly impact the *confidence, self-esteem, and motivation* of children who suffer from them. This is why *psychological support*, aimed not only at the student but also at the parents, is essential to prevent *more serious problems*, such as depression, early school drop-

out, undervaluation of one's abilities, and feelings of frustration¹.

The clinical etymology of SLD is based on a neurobiological basis: these are disorders that arise from the interaction between genetic, epigenetic, and environmental factors, which influence the brain's ability to perceive, process, and use verbal and nonverbal information [3]. The clinical etiology of SLD is based on a neurobiological foundation, stemming from the interaction between genetic, epigenetic, and environmental factors. In this regard, research has extensively demonstrated how the dynamics of the Home Literacy Environment (HLE) significantly influence cognitive development in children from the earliest years of life [5, 18, 21, 22, 28, 33, 34]. In particular, it has emerged that early visual attention directed toward environmental print serves as a fundamental predictor for future literacy skills [14, 15]. The clinical manifestations of SLD can vary depending on age and environmental demands, and comorbidity with other emotional and behavioral disorders, such as attention-deficit/hyperactivity disorder (ADHD), anxiety, and depression, is often found.

Clinical manifestations of ASD can vary in relation to age and environmental demands, and comorbidity with other emotional and behavioral disorders is often found, such as attention-deficit/hyperactivity disorder (ADHD), anxiety and depression [2].

Psychoeducational, pedagogical and rehabilitative interventions for DSA aim to "cure" the disorder and to strengthen or compensate for deficient skills, supporting the child or young person's learning path and promoting autonomy, motivation and self-esteem [4]. The approach must be early, personalized and multidimensional, involving school, family and specialists.

These disorders have been identified with the acronym DSA, and much scientific progress has been made in certifying the disorder, assessing comprehension, and in educational and rehabilitative treatment by various researchers and specialists in the field. However, it remains an area in which much remains to be explored, especially regarding aspects related to the *limitations of diagnosis, access to diagnostic resources, and the area of inhibition and anticipation of symptoms that determine the diagnosis* remains unexplored. Considering that diagnoses are made only after a long educational process where the symptoms are already completely evident and manifest, it seems that "nothing can be resolved" except resorting to a diagnostic assessment and activating educational-rehabilitative pathways to recover cognitive, practical, motor, and neurological skills, this remains an area of concern. Therefore, it would be appropriate to develop a research project on the "pre-diagnosis" prevention of SLD, even in comorbid situations, both for those requiring educational and rehabilitative interventions, starting from the first years of school and continuing through the end of secondary school, and probably

also in the academic field. It would also be appropriate to implement formal training programs for professionals and specialists in the field. Therefore, prevention programs should be promoted that allow for the identification of the underlying causes and symptoms that determine these disorders, through the implementation of observation protocols in preschool and older children. If these disorders are already present in the individual during their life cycle, preventive training, psychoeducational, didactic, rehabilitative, and methodological interventions should be implemented for the relevant personnel. Therefore, promoting research projects for the training of professionals, including teachers at all levels of school, aims to develop adequate knowledge of appropriate teaching-learning strategies to implement and, above all, to understand the psychoeducational, didactic, and rehabilitative methodologies suitable for improving the learning processes of students with DSA. Furthermore, it is important to clearly clarify the concepts of *strategy* (adaptive tools) and *methodology* (*systemic approaches*), which are different from each other, but which still today tend to be simply confused. This is done in order to then apply evidence-based techniques and interventions to enhance cognitive, practical-motor, visuo-spatial, linguistic, and communicative skills, to improve learning and executive cognitive functions. Indeed, these scientific concepts of *strategies and methodologies* may often seem obvious in their etymological understanding by professionals in the sector (teachers, educators, etc.), but this is not always the case, and in professional practice, a tendency towards confusion is observed, especially when it is up to them to develop personalized and individualized educational paths. It would be appropriate to develop preventive intervention protocols, through training and family awareness projects for children with ASD, who often convince themselves that their child has a manifest condition for which they find no support. Therefore, implementing specific protocols for these types of needs and requests, which often arise verbally and are not always formalized, can also be extended to family members/parents of people with disabilities with comorbid autism spectrum disorder, ADHD, and Fragile X [4].

Implementing this project would require the creation of motivated collaborative networks not only among various professionals and families, but also involving not only schools, but especially local and central governments, fostering a process of facilitating the implementation of protocols, given that recent scientific research shows an increase in individuals and students with specific learning disabilities. Indeed, the increase in student cases underscores the urgency of scalable preventive models, capable of addressing difficulties before they impact students' academic progress and pathology.

Another factor that inhibits and prevents the development of learning disabilities is the establishment of rigid diagnoses, the lack of uniform protocols, limited diagnostic resources, confusion between early indicators and normal developmental

¹ [https://www.fatebenefratelli.it/blog/riabilitazione-trattamento-dsa-significato-](https://www.fatebenefratelli.it/blog/riabilitazione-trattamento-dsa-significato-prognosi-linee-guida)

[prognosi-linee-guida](https://www.fatebenefratelli.it/blog/riabilitazione-trattamento-dsa-significato-prognosi-linee-guida)

difficulties, poor training of professionals, and the aforementioned lack of family awareness. Regarding the establishment of diagnoses, rigid diagnostic criteria are observed, with the diagnosis being made official only at the end of the second year of primary school for dyslexia or dysorthographia, and from the third year for dyscalculia and dysgraphia, limiting the possibility of early intervention [24]. Typically, SLD diagnoses are made when difficulties become evident, often after years of schooling; implementing an early approach could help intervene before difficulties worsen [27].

Another limiting aspect is access to diagnostic resources, where not everyone has easy and timely access to diagnostic assessments, especially in rural areas or with limited resources [18].

Another important factor to consider for research concerns the uniformity of protocols, given that there is no standardized approach for early identification, with observation protocols often varying between regions and schools. Diagnostic resources are often limited, and access to specialist assessments is uneven, with long waiting times that delay the start of interventions [25]. Furthermore, there is a gap between early indicators and typical developmental difficulties; distinguishing predictive signs of specific learning disabilities from transient developmental difficulties can be challenging, leading to underestimations and false alarms [1]. Furthermore, there is a complex situation involving bilinguals or individuals living in multicultural contexts, requiring a specific approach and diagnosis that requires specific approaches that are not always available and applied correctly. Although individualized instructional plans (PDPs) exist, their effective implementation may vary depending on available resources and teacher training [18]. Despite the law 170/2010 and Legislative Decree No. 66 of April 13, 2027, full inclusion and adequate support for students with learning disabilities can still be improved in some schools. It would be appropriate to introduce and formalize, also from a legal standpoint, professional support roles for students with learning disabilities. The literature underscores the importance of a clear professional framework to support school inclusion and the clinical management of SLD [16]. These roles include professional educators in personal services, pedagogists, and school pedagogists, not just psychologists or other professionals with expertise in this scientific and cultural field.

Overcoming these obstacles requires greater integration between schools, health services, and families, as well as investment in research and training for professionals and the dissemination of effective and uniform observation protocols [25]. Further attention is also needed from government bodies, jointly reviving the same bill of December 6, 2016, No. 2613, which established the professional role of school psychologist and adding other professional support roles to schools for students with learning disabilities (LD). This should enable them to address emotional and motivational challenges. Consistent and accessible psychological support is crucial for their well-being, and raising awareness and social acceptance of LD can

still be improved to reduce stigma and increase support for families and affected individuals [9]. Despite this, research data shows that *DSA diagnoses* have further *doubled*, and we refer specifically to the school years monitored, from 2019/2020 and 2020/2021, where 318,678 and 326,548 students were diagnosed with a learning disability, representing 5.3% and 5.4% of the total number of students, respectively. These students are in the third, fourth, and fifth grades of primary school and all classes of lower and upper secondary school with a DSA certification pursuant to Law 170/2010. Going into detail by type of disorder, in the 2020/2021 school year, 198,128 students had dyslexia, 99,769 had dysgraphia, 117,849 had dysorthographia, and 108,577 had dyscalculia.

Certifications for specific learning disabilities were issued most frequently in the *Northwestern regions of Italy*, where, in the 2020/2021 school year, the percentage of students with learning disabilities (LD) out of the total number of students attending was 7.9%. This percentage is higher than the national average of 5.4%, even for the Central and Northeastern regions, with percentages of students with learning disabilities out of the total number of students equal to 6.7% and 5.8%, respectively. In the *Southern regions*, however, the number of certifications is significantly lower, averaging 2.8%. [29]

In recent years, diagnoses of learning disabilities have more than doubled, from 2% in 2016 to much higher figures. According to Dr. Messina, this increase is primarily due to the increased attention and sensitivity introduced by Law 170/2010, which has led schools and families to better recognize and address these disorders. At the same time, diagnoses of other neurodevelopmental disorders, such as autism, ADHD, and Tourette syndrome, have also increased, thanks to a more thorough preventive and diagnostic approach than in the past. Furthermore, many students are initially able to compensate for their difficulties, but these become more evident as school demands increase, also impacting their emotional and motivational state.

Dr. Sergio Messina, a child neuropsychiatrist and former president of AID (Italian Dyslexia Association), emphasizes that the increase in difficulties among children is due to several factors, including the social disruptions caused by the Covid pandemic, which have particularly affected preschool children during the crucial learning phase. Messina emphasizes the need to update teaching methods, adapting them to modern, multimedia learning strategies. He adds that exposure to different linguistic stimuli, such as videos in English, should not be confused with language problems, but rather be interpreted as a matter of stimulation and communication. Finally, he reiterates the importance of interaction with children, both at school and at home, to support language development, which is essential for academic learning.

Schools identify students at risk of Specific Learning Disabilities (SLD) early through specific tests administered in preschool and the first two years of primary school. "Schools identify students at risk of Specific Learning Disabilities (SLD) early through specific tests administered in preschool and the

first two years of primary school. Modern eye-tracking analysis techniques allow for the identification of precursors to learning disorders during the preschool years [6, 23, 35]. These approaches are based on established studies concerning visual sensitivity and pattern processing [7, 30-32]. Ministry data indicate that for the 2019/2020 school year, approximately 5,572 cases of pre-diagnosis were reported..." These tests are designed to identify predictive factors for possible future problems, but these tests do not yet constitute a definitive diagnosis. Ministry data indicate that for the 2019/2020 school year, approximately 5,572 cases of pre-diagnosis were reported (0.23% of students), while in 2020/2021, the number of cases was 5,091 (0.22%). Observation and monitoring of reading, writing, and arithmetic skills, along with collaboration between teachers and families, are essential for early identification of difficulties and deciding whether to proceed with further specialized treatment [29].

Another key aspect is clearly explaining to families of individuals with learning disabilities that this disorder is not a pathology, but a "human condition," according to Piero Crispiani, a renowned honorary professor at the University of Macerata. Crispiani characterizes this condition by neuromotor dysfunction, particularly in sequential coordination and spatial-temporal organization, defining it as a form of sequential dyspraxia. His praxis-motor theory (TPM) interprets dyslexia as a disorder of praxis, that is, executive functions related to the sequencing and fluidity of cognitive and motor actions, with particular attention to lateral dominance and the temporal succession of reading, writing, and calculation operations [3]. Learning disabilities are specific neurodevelopmental disorders that require comprehensive and personalized care. Psychoeducational and rehabilitative interventions must be timely, targeted at both academic skills and emotional and relational well-being, and involve all aspects of the child's or youth's life to promote autonomy, motivation, and the full development of their potential.

The "Crispiani Method" is based on an integrated approach that combines cognitive and motor education, with progressive and personalized interventions aimed at strengthening individual skills, improving attention, memory and autonomy in studying, and promoting active inclusion in school and society.

In summary, Crispiani proposes treating SLD through a functional and pedagogical assessment that views difficulties as neuromotor dysfunctions to be enabled and strengthened, not as pathological deficits to be cured, with a method that involves diagnosis, prevention, rehabilitative treatment, and support for school and family.

3. Diagnostic Screening Methodologies and Tools for People with Learning Disabilities

Among the many methodologies recognized in Italy for specific learning disabilities is the Crispiani Method, which is

based on an integrated approach that combines cognitive and motor skills training with progressive and personalized interventions aimed at strengthening individual skills, improving attention, memory, and independent learning, and promoting active inclusion in school and society.

The Crispiani Method, developed by Professor Piero Crispiani, represents an innovative and multidimensional approach to the treatment of Specific Learning Disabilities (SLD), including dyslexia, dysgraphia, and dyscalculia. This method is based on a holistic view of learning, considering the individual as a whole and unique individual, and is distinguished by the integration of cognitive and motor activities. *The distinguishing features of this method are:*

- 1) *Integrated cognitive-motor approach:* The Crispiani Method combines motor exercises with cognitive stimulation, promoting the development of coordination, attention, memory, and spatial-temporal organization. This integration has proven effective in strengthening basic skills such as reading, writing, and arithmetic.
- 2) *Habilitation and non-rehabilitation:* Treatment does not aim to "recover" lost abilities, but rather to "strengthen" existing ones, promoting a reorganization of cortical flows and greater executive fluidity. Excessive use of compensatory measures is avoided, preferring instead to actively stimulate the affected functions;
- 3) *Personalization and graduality:* Interventions are progressive, systematic, and personalized, tailored to the characteristics and potential of each student. The program follows a gradual and consistent approach, with achievable and motivating goals that foster independence and self-esteem.
- 4) *inclusive vision:* The method is not limited to school learning, but promotes active inclusion in social and school life, improving the general well-being and participation of students with DSA.

The objectives of the Crispiani Method for specific learning disabilities are multiple, and in particular concern:

- 1) *enhancing the fluency* and accuracy of overall executive functions;
- 2) *, writing and mathematical performance skills;*
- 3) *promote social contact*, class participation and willingness to do homework;
- 4) *develop functional autonomy*, avoiding dependence on compensatory tools, except in cases of selective exams and tests;
- 5) *build motivation and confidence* by rewarding effort and not criticizing mistakes.

The daily application of the Crispiani Method has demonstrated significant results detected in research carried out in 2022 [11].

The results of this study aimed to test the effects of dual-task cognitive-motor training on the athletic and cognitive performance of young basketball players and to investigate the underlying effects on anticipatory brain activity using ERP

measures. Specifically, we focused on the BP and pN components, which indicate preparatory motor and cognitive activity, respectively, prior to stimulus presentation during a DRT.

The results showed that the experimental treatment was either only as effective or more effective than standard training in several of the variables studied.

Specifically, in all basketball tests, only the experimental groups improved their athletic performance.

Behavioral performance in the cognitive test showed reduced response times, greater coherence (ICV), and fewer omissions in both groups, but the effect on errors of commission was more pronounced in the experimental group.

At the electrophysiological level, motor preparation to the task (BP) increased in both groups in the post-test, while cognitive preparation (pN) was earlier and larger in the post-test only in the experimental group.

The evidence that dual-task cognitive-motor training alone improved performance on basketball-specific tests in just five weeks may be related to the increased cognitive load required by training, thus stimulating cognitive functions necessary for fast and accurate basketball dribbling, such as anticipation and selective and divided attention.

Dual-task cognitive-motor training also improved cognitive test accuracy more than standard training, likely because the dual process required by the experimental task particularly stimulates higher cognitive functions such as attention, facilitating response accuracy. Specifically, after the intervention, the experimental group committed fewer errors of commission than the control group.

Regarding response time and its consistency, both types of training were equally effective; this could be explained both by task learning effects and by the fact that standard training was designed to improve decision-making speed and consistency. This is consistent with the cognitive processes model proposed by Weigel and Wollny, which proposes that high-level athletes in team sports are particularly trained to effectively capture action-related information, allowing for optimal tactical decisions [27]. Regarding the omission rate, the values were too low after treatment (close to zero), and a likely floor effect may have masked possible differential effects of the two training sessions, although they still indicated learning effects and an excellent index of accuracy and readiness in young athletes.

The behavioral results observed in the cognitive test were also reflected by distinctive ERP modulations. Indeed, the increase in BP amplitude after both treatments was accompanied by faster response times in both groups, confirming previous literature suggesting a possible correlation between anticipatory premotor activity and response speed.

Crucially, pN was affected differently by the two types of training, being increased and anticipated only after dual-task cognitive-motor training. This result also supports their hypothesis regarding the reduction in commission errors after cognitive-motor training, indicating improved attentional and inhibitory control. The evidence that the increase in pN was

limited to the experimental group could be explained by the fact that this electrophysiological index of proactive cognitive control is sensitive to this type of training and could represent the neural basis of the observed effects. This proactive control allows us to be active before an event occurs and is tied to task-specific demands [11, 18, 20].

Considering that pN increases with the cognitive load of the task, it has also been shown that a five-week treatment requiring high cognitive loads can modify this brain function allowing for greater accuracy in the task even after treatment.

The main novelty of the present study compared to previous literature using dual-task cognitive-motor training was the use of sport-specific exercises alongside cognitive training; in fact, other studies have used more general exercises training aerobic capacity, strength, balance, and flexibility, or walking, progressive resistance, and functional balance training, along with general tasks that stimulate executive functions, including working memory, attention, or calculation ability. Here, as in the work of Fleddermann et al. with volleyball athletes, the training was more specific with respect to the study objectives and the characteristics of the athletes.

However, some limitations must be recognized, which are listed below:

- 1) In this study, we recruited only male participants, but gender differences in cognitive control have been reported in previous studies, indicating a more proactive and cautious approach to cognitive processing in females and a more reactive and faster cognitive processing in males. Therefore, gender is an important variable to consider in future studies;
- 2) Because the training design was intense and lasted five weeks, we cannot rule out that different levels of mental and physical fatigue between the groups may have modulated the pN and BP components and behavioral outcomes in the cognitive test. To overcome this limitation, future studies should monitor mental and physical exertion before testing.
- 3) We do not know how long the effect found will last after the end of treatment, and a follow-up would be necessary;
- 4) considering that several of the five basketball tests and four cognitive tests were highly correlated, future studies should focus on a smaller, but more independent, number of tests;
- 5) The motor actions of the dual-task motor and cognitive-motor training sessions were designed to be as comparable as possible, both focusing on dribbling, but they are not identical. In fact, both groups performed two individual dribbling sessions with changes of hand and direction, but while the control group's dribbling was followed by shots at the basket, the experimental group performed the dual task and not shots at the basket.

This research study demonstrated that the proposed cognitive-motor training protocol is highly effective in improving athletic performance. This improvement was considered from a practical perspective for psychologists or coaches who wish

to incorporate cognitive training in addition to technical-motor training into their team's exercise program. At the neural level, we showed that anticipatory prefrontal activity could be a preferential target for cognitive-motor training. Furthermore, we propose that the *pN* is not only associated with anticipatory attention and inhibition, but is also involved in achieving specific athletic goals, presumably through neuroplasticity processes.

Furthermore, it is clear that the Crispiani method for specific learning disabilities leads to improved attention span, working memory, and text comprehension; increased independence in studying and time management; strengthened self-esteem and motivation; reduced performance anxiety and increased personal confidence; increased social and relational participation, with a positive impact on the quality of school and personal life.

This method has led to a paradigm shift and is also distinguished by its conception of learning disabilities: not as pathologies, but as human conditions requiring targeted rehabilitative intervention aimed at enhancement, not mere compensation or medicalization. Dyslexia, for example, is interpreted as a form of sequential dyspraxia, that is, a disorder of executive function and spatial-temporal organization, rather than an isolated deficit.

The value of the Crispiani Method for learning disabilities (LDs) lies in its ability to offer a personalized, integrated, and progressive rehabilitation program that goes beyond simply compensating for difficulties. The method promotes the development of lifelong skills, autonomy, and well-being, proving particularly effective in improving academic performance and the personal growth of students with LDS, in Italy and around the world.

4. Beyond the Diagnostic Emergency: The Crispiani Method as a Dual-Task Intervention Paradigm

The contemporary pedagogical and neuropsychological landscape is facing an unprecedented systemic crisis, crystallized by the exponential doubling of Specific Learning Disorder (SLD) certifications recorded in the 2019-2021 biennium, with incidence rates now surpassing the critical 5% threshold of the student population. This figure, far from being a simple gain in awareness, highlights the failure of a diagnostic-assistance model incapable of ensuring national equity, as evidenced by the unacceptable statistical abyss between the 7.9% reported in the Northwest and the 2.8% in the South. This territorial fracture, which renders diagnosis a geographical privilege, is a symptom of structural sclerosis: the bureaucratic rigidity of diagnostic criteria—too often applied with excessive delay—and the chronic scarcity of local resources preclude timely interventions, leaving preschool years devoid of universal observation protocols. Complementing this oper-

ational paralysis is a cultural myopia: the pernicious terminological confusion between "strategies," understood as mere compensatory tools that offer only accessory support, and "methodologies," configured as systemic approaches necessary for actual cognitive reorganization. Such overlap has induced a "mass medicalization" that, far from resolving vulnerabilities, tends to crystallize them, confining the student to a state of chronic technological dependence that undermines their intellectual autonomy. Facing this impasse, the Crispiani Method emerges as a necessary paradigmatic revolution, enacting a radical reversal of course: SLD is no longer categorized as an immutable pathological deficit but is instead interpreted as a peculiar "human condition" characterized by neuro-functional disorganization requiring responses rooted in plasticity. By redefining dyslexia as a sequential dyspraxia—an alteration of executive functions and complex spatio-temporal architecture—the method shifts the center of gravity of the intervention: from the mere compensation of symptoms to the profound strengthening of neuro-cognitive structures. The pulsating heart of this approach lies in cognitive-motor dual-task training, an advanced procedure that challenges the mind to manage simultaneous complex stimuli and responses, stimulating transformative brain plasticity. The empirical evidence validating this methodology is unequivocal: the intervention does not merely "support" the learner but acts at a neurophysiological level by enhancing anticipatory brain activity, scientifically identified through the *pN* component. This increase in executive fluency and cognitive foresight represents a true break from traditional practices: the student is no longer a passive user of vicarious tools, but becomes the active architect of their own rehabilitation. The enhancement of executive functions is based on theoretical models that integrate cognitive control and neuroplasticity [12, 13, 17, 19]. The efficacy of this approach is supported by a rigorous analysis of the variables involved [8, 10, 26]. Through this methodological rigor, the Crispiani Method restores the student's lost autonomy, transforming the overcoming of dyspraxia into an opportunity for global growth and marking the definitive transition beyond subalternity to compensatory tools, in favor of genuine and effective learning freedom.

4.1. Analysis of the Diagnostic Increase and Current Critical Issues

Data for the 2019/2020 and 2020/2021 school years show that DSA certifications have doubled, reaching 5.3% and 5.4% of the student population, respectively. A strong regional disparity has emerged: the Northwest regions have an incidence of 7.9% compared to 2.8% in the South. The main obstacles include the rigidity of diagnostic criteria (often late), the scarcity of local resources, the lack of uniform observation protocols in preschool, and the terminological confusion between "strategies" (compensatory tools) and "methodologies" (systemic approaches).

4.2. The Crispiani Method: Innovation and Dual-Task Training

The Crispiani Method interprets DSA as "human conditions" rather than pathological deficits. Dyslexia is defined as a form of sequential dyspraxia, a disorder of executive function and spatial-temporal organization. The method distances itself from excessive medicalization, favoring rehabilitation through dual-task cognitive-motor training. Empirical studies have shown that this approach improves executive fluency and anticipatory brain activity (pN component), promoting student autonomy and reducing reliance on compensatory tools

5. Conclusion

Overcoming current challenges requires a model based on prevention and "pre-diagnosis." It is necessary to implement standardized observation protocols starting in preschool, formalize the role of pedagogues and educators within schools, and promote ongoing teacher training in evidence-based teaching methodologies. Only through a collaborative network that unites families, institutions, and specialists will it be possible to ensure the full development of each student's potential, transforming school inclusion from a regulatory requirement to an effective pedagogical practice.

Abbreviations

DSA	Specific Learning Disorders
ADHD	Attention Deficit/Hyperactivity Disorder
SLD	Specific Learning Disabilities

Author Contributions

Vitiello Salvatore: Data curation, Research, Resources, Visualization

Perrotta Francesco: Conceptualization, Formal Analysis, Methodology, Project Administration, Supervision, Validation, Writing – original draft, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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