Therapeutic Strategies for Children with Learning Difficulties: From Differential Diagnosis to the "Proposed Integrative Tree Engineering"

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Abstract:
The present article addresses the development of interest in the category of children with learning difficulties in light of the increasing rates of their prevalence and the need to provide educational services that ensure equal opportunities. The article seeks to refute inadequate diagnostic practices that have arbitrarily classified them within categories of intellectual disability, emphasizing that improving psychological care is based on the skill of differential diagnosis. Within this framework, the "Response to Intervention" approach is proposed as a methodological alternative to the traditional "discrepancy" criterion for building structured therapeutic strategies. The added value of the article lies in presenting the "proposed integrative tree model," whose theoretical dimensions were previously outlined in an earlier study (Haj Sabri, 2026), where it is employed here in designing a comprehensive therapeutic intervention that integrates neuropsychological, procedural, and developmental dimensions, with the aim of harnessing multiple intelligences and correcting the learning and academic trajectory of this category.
Keywords: therapeutic strategies; children with learning difficulties; Response to Intervention approach; remedial education; integrative tree model.

1. Introduction:

After examining the current situation in people's lives on the one hand, and on the other hand interrogating the threatening statistical indicators, as agreed upon by the writings of those concerned who described it as "learning difficulties," this phenomenon has spread widely among the vulnerable hearts of our children, harvesting its victims along a continuum of increasing difficulty and severity in absolute terms. It has represented about (20%) of the world's children as a category of those with learning difficulties, and (10%) of them suffer from reading difficulties that hinder their academic progress. This leads to the loss of their energies and potentials, inevitably affecting their psychological health and quality of life. (Awadallah, 2003)

It should also be noted that learning difficulties represent a major category within special education, where their global prevalence has reached approximately (5–6%) within the same category, occurring within an age range between (6–17 years). Based on recent global statistics, the number has doubled due to poor diagnostic practices currently adopted, where children have been classified in a hasty and exaggerated manner. (Adel, 2010)

Interest in learning difficulties has accelerated due to the accumulation of studies confirming the increasing number of children who have not received the required educational services compared to their typical peers. In addition, they have been arbitrarily classified within the circle of intellectual disability without considering agreed diagnostic standards, and they have also been integrated with emotionally disturbed individuals, which constitutes a serious flaw in dealing with children with learning difficulties. (Suleiman, 2000)

Learning difficulties are considered among the complex challenges facing educational systems, as children show a clear gap between their latent intellectual abilities and their actual academic performance (Hammill, 1990). Remedial teaching strategies are considered an intervention tool aimed at bridging this gap by designing a customized educational environment that meets the special needs of these children (Swanson, 1999).

The essence of improving psychological care for individuals with learning difficulties depends on diagnostic skill, a field that has witnessed new approaches, most notably the Response to Intervention approach as an alternative to the traditional discrepancy criterion, ensuring more accurate identification of this category. This field of intervention has witnessed various programs and multiple strategies, now referred to as remedial education for individuals with learning difficulties, aimed at addressing their learning problems within their academic path. (Laarechi, 2013)

Remedial teaching is defined as a set of organized and planned procedures aimed at correcting the educational path of a student who suffers from difficulties in acquiring basic skills such as reading or arithmetic (Lerner & Kline, 2006). It does not merely simplify content but seeks to modify the "mode of reception" in accordance with the child's cognitive style.

1.1. Foundations of a successful therapeutic strategy

This effective strategy is based on several fundamental pillars documented by modern studies, which operate in an integrated manner to create a safe and motivating learning environment:

1. Individualization: The therapeutic strategy does not only provide simplified content but is based on designing an Individualized Education Plan (IEP) for each child. This plan is not merely an administrative procedure but a "psycho-pedagogical" roadmap built on the results of differential diagnosis, taking into account differences in learning speed and cognitive processing patterns (Bender, 2008).

2. Multisensory Approach: This pillar goes beyond traditional channels (hearing and sight) to involve the kinesthetic-tactile system. Engaging multiple senses activates different areas of the brain, helping children with weaknesses in auditory or visual memory to store information through alternative sensory pathways, thereby enhancing perception and insight (Vaughn & Bos, 2020).

3. Immediate Feedback: In remedial teaching, timing is crucial. Immediate correction prevents the "learning of errors" or the consolidation of distorted concepts in long-term memory. Feedback must be positive and constructive, aiming to build the child's self-confidence and provide the correct response instantly (Hattie & Timperley, 2007).

4. Proposed Addition (Explicit Instruction): It is proposed to add this pillar, as a successful strategy requires the teacher to be clear in presenting the skill, starting with modeling, followed by guided practice, and ending with independent practice, which reduces the child's distraction.

We will attempt to examine the most important therapeutic strategies for individuals with learning difficulties with precision through illustrative diagrams for further clarification in what follows:

1.2. Task Analysis Strategy:

The task analysis strategy is considered a cornerstone of individualized remedial teaching. It refers to the process of breaking down a complex academic or behavioral skill into a sequence of small, logical, and sequential steps, thereby reducing the gap between the child's abilities and the requirements of the skill, making errors in execution less likely (Alberto & Troutman, 2013). This strategy aims to create a psychological shift in the learner by transforming the "impossible task" in the child's view into a "set of simple and cumulative tasks" that can be successfully accomplished.

In the procedural context, task analysis represents both a diagnostic and therapeutic tool; it involves dividing the skill into units or sub-skills that can be trained and measured (Ibrahim, 2010). It is important here to distinguish between the "task" as a whole structure and its components, where the task is defined as "a set of psychomotor skills that require the individual to perform accurately and acceptably." Psychomotor skills refer to a vital activity that requires the use of large or small muscles, or both together, in coordination with the nervous system (Mithqal, 2015).

Researchers' perspectives differ regarding the limits of this concept; some have expanded task analysis to include the description of instructional procedures and media used for skill training (as a dynamic process), while others have limited the term to the analysis of the cognitive content to be taught only (Ibrahim, 2010). However, the modern perspective within the Response to Intervention (RTI) approach integrates both content and procedure to ensure that each mastered small step acts as a "scaffold" for the next step.

1.3. Steps for implementing the strategy in the remedial context:

To ensure the success of this strategy with individuals with learning difficulties, the teacher follows these steps (Cooper et al., 2020):

• **Determining the final objective**: Precisely defining the skill to be mastered (e.g., writing a nominal sentence).

• **Identifying prerequisites:** Ensuring that the child possesses the basic skills preceding the task (e.g., knowledge of letters and diacritics).

• **Breaking down the task:** Writing the procedural steps (e.g., Step 1: choosing the subject, Step 2: placing the nominative marker, Step 3: choosing the predicate…).

• **Chaining:** Teaching the steps either through forward chaining (starting from the first step) or backward chaining (assisting the child in all steps and allowing them to complete the last step to feel achievement).

⇨The task analysis strategy is considered a useful remedial method that relies on enabling the student to master the elements of the partial skill. This approach allows the student to combine these elements after mastering them to form integrated tasks within a clear and structured sequence.

⇨ This approach helps (Salem et al., 2006) in identifying the aspect in which the student failed and determining the parts of the task that the student finds difficult to master, so that they can

be specifically trained on them. This method is used in both the remediation and teaching of skills.

⇨This applies to academic subjects such as: (reading, mathematics, writing). The task analysis strategy is applied through the figure below:

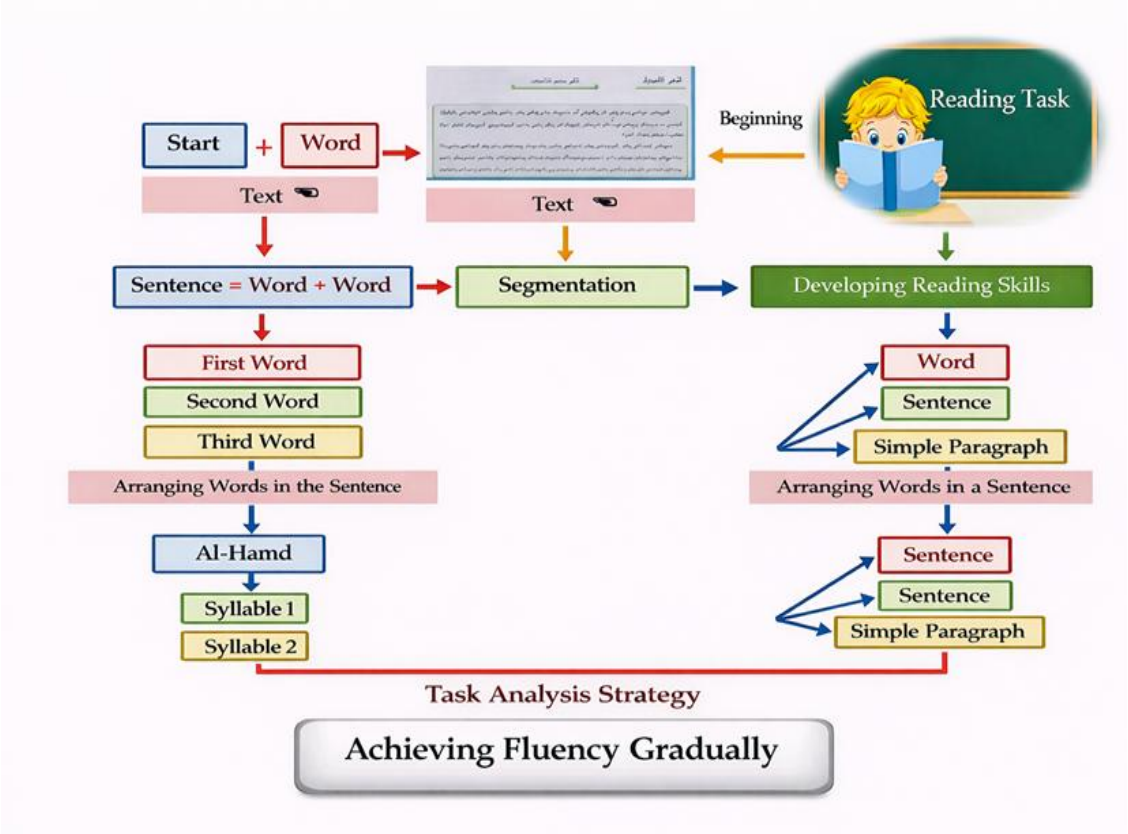

Figure (1): Task Analysis Strategy in Teaching Reading Skills to Children with Learning Difficulties

⇨**Applied Model of the Task Analysis Strategy for Reading**

To operationalize the task analysis strategy, the following illustrative model is presented (reading task analysis map), where the process begins by breaking down the "reading text" as a complex whole structure and passes through sequential stages that ensure cognitive assimilation of the material:

• **First segmentation stage** (from text to sentence): where the sentence is isolated as an independent idea to facilitate focus.

• **Structural analysis stage** (from sentence to word): breaking down the sentence into its smallest verbal units, with training the child on "arranging words in a sentence" to understand context and meaning.

• **Phonological analysis stage** (sound components): this is the deepest level of analysis, where the "word is divided into its syllables." This procedure reduces the cognitive load on working memory and helps children with dyslexia to decode efficiently.

• **Reconstruction stage** (developing reading skills): after mastering the smaller components, the skills are reintegrated (word → sentence → full passage) leading to fluent reading and comprehension.

2- Task Analysis Strategy for Teaching Mathematical Skills to Children with Learning Difficulties:

When applying task analysis in the mathematical field, the arithmetic problem is not treated as a single block, but as a "series of sequential mental operations." The goal is to reduce distraction resulting from overlapping operations (such as addition with carrying or long multiplication).

2.1 Steps of analyzing a mathematical task (model of addition with carrying):

1. Visual recognition: identifying numbers and understanding place value (units, tens).

2. Operation identification: recognizing the (+) symbol and its purpose.

3. Partial execution: starting by adding the units column only.

4. Transitional processing (carrying): training the child to "transfer" the excess number to the tens column as a separate step.

5. Full execution: adding the tens column with the carried number to reach the final result.

2.2 Advantages of this task analysis in mathematics:

• **Identifying the point of difficulty:** instead of saying "the child is weak in mathematics," the analysis allows us to say "the child masters addition but struggles at the carrying stage," making remedial teaching focused and effective.

• **Building self-efficacy:** when the child successfully completes small steps, they develop motivation to complete the complex mathematical sequence (Bender, 2008).

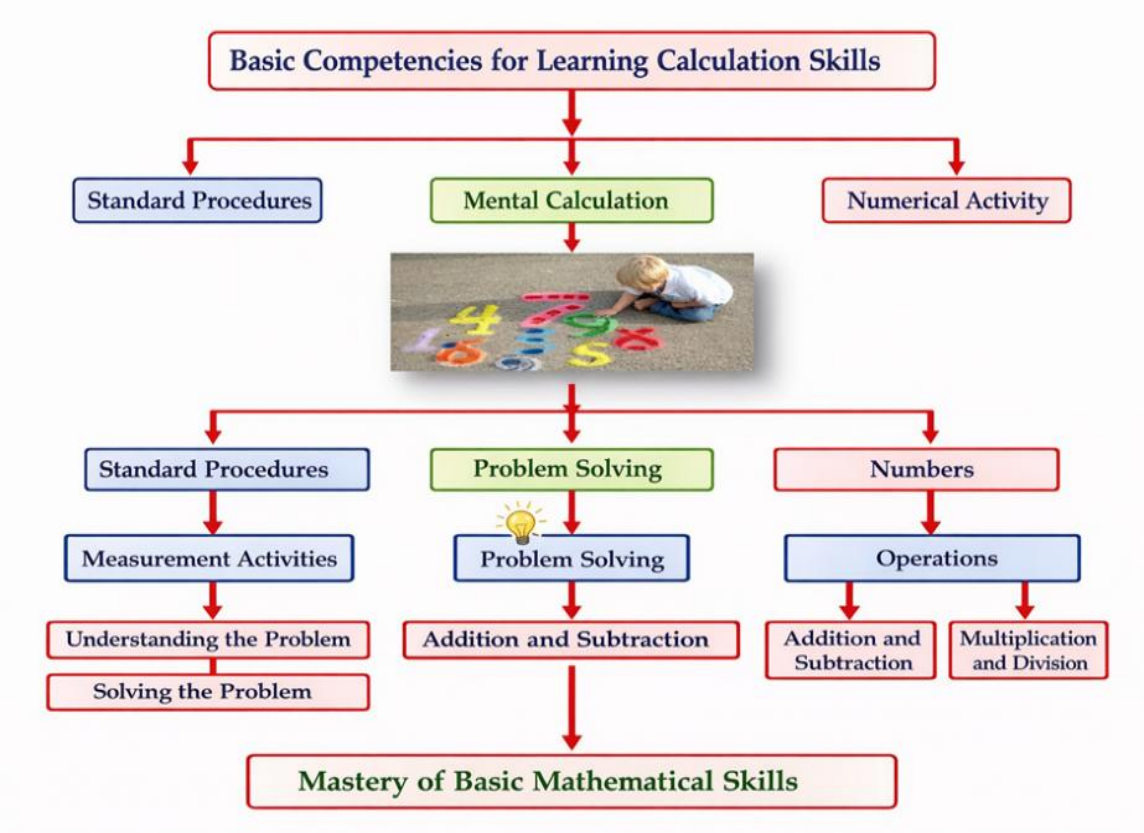

Figure (2) illustrates: the task analysis strategy in teaching arithmetic skills to children with learning difficulties

(Salem et al., 2006) emphasize the necessity of the gradual use of concrete stimuli. There are a number of main justifications for using the task analysis strategy.

2-3 Justifications and objectives of using the task analysis strategy:

The importance of task analysis is not limited to simplifying the learning material only, but extends to include strategic justifications that make it an essential tool in the resource room. Among the most important of these justifications are:

1. Accurate and detailed assessment of the skill: This strategy helps in preparing individualized educational programs by providing a quantitative and qualitative assessment of the skill to be taught; it enables the teacher to know precisely what prior skills the child actually possesses and what they lack (Salem et al., 2006).

2. Sensory and developmental progression: Researchers emphasize the necessity of the gradual use of stimuli, moving the child from "concrete" stimuli (tangible teaching aids) to "semi-abstract" stimuli (images and drawings), and finally to the "abstract" level (symbols and numbers). This progression protects the child from the shock of cognitive complexity.

3. Deriving a system of performance skills: It contributes to deriving an integrated system of sub-skills required to perform a specific task, ensuring that no link in the learning chain is overlooked. The success of the overall task depends on the proper performance of the smaller psychomotor and cognitive skills that compose it (Kamel, 2005).

Identifying points of failure and building intervention: The importance of analysis lies in its ability to isolate the step that causes difficulty, directing the teacher's remedial effort toward the "core of the problem" instead of re-explaining the entire skill, thus saving time.

Fourth: Procedural steps for implementing the task analysis strategy

To transform the academic skill into learnable units, the remedial teacher must follow these procedural steps accurately:

1. Determining the final behavioral objective: Formulating the major skill clearly and measurably (e.g., the child adds two numbers with carrying).

2. Identifying prerequisite skills: Ensuring that the child possesses the basic requirements identified in the "calculation map" (such as spatial awareness and visual discrimination of numbers).

3. Skill decomposition: Breaking down the skill into small sequential steps. It is recommended that the teacher perform the task themselves and record every mental or physical action involved.

4. Logical sequencing of steps: Starting from easy to difficult, or from known to unknown, to ensure continuous success for the child.

5. Selecting the teaching method: Determining whether instruction will be conducted through "forward chaining" (learning the first step, then the second…) or "backward chaining" (starting with the last step so the child quickly feels a sense of achievement).

2.4- Steps for implementing the task analysis strategy:

Figure (3) illustrates: the steps for implementing the task analysis strategy

⇨Reading task analysis (from text to phonological components):

According to the first applied diagram, teaching reading follows a "deconstructive" path that ensures the cognitive assimilation of the reading material through the following stages:

• **Segmenting the whole text:** starting by isolating the "sentence" from the text.

• **Verbal analysis:** breaking down the sentence into "words," with training on the skill of "arranging words in a sentence."

• **Phonological components:** dividing the word into its "syllables," which is the decisive procedure to enable the child to decode (Phonological Awareness).

• **Generation and reconstruction:** rebuilding the skills (word → sentence → passage) to reach reading fluency.

2. Developmental scheme for learning arithmetic skills:

The second diagram shows that task analysis in mathematics begins with regulating the "basic abilities" that precede the arithmetic operation itself, namely: (Alberto & Troutman, 2013)

• **Developmental foundations:** including (spatial orientation, spatial memory, and visual perception).

• **Conceptual and numerical processing:** including number discrimination, matching numbers, reading and writing them, and distinguishing concepts (greater/smaller).

• **Procedural outputs:** reaching the successful execution of "arithmetic operations."

3. Procedural steps for implementing the strategy:

Based on the third diagram, the analysis is implemented according to the following practical steps: (Vaughn & Bos, 2020)

• **Observing and accurately identifying errors:** to determine the source of difficulty.

• **Setting specific objectives for each step:** to ensure clarity of the remedial path.

• **Breaking down a single task into small units:** to reduce cognitive load.
• **Implementation and reinforcement:** starting instruction with sub-skills, determining the appropriate type of reinforcement for each skill, and following a "hierarchical sequence" from easy to the complete task.
- Basic requirements for teaching tasks:
 Providing additional assistance and encouragement for slow learners
 Utilizing students' motivation at the beginning of the task
 Observing the following conditions:
(a): learning the association between (stimulus–response)
(b): maintaining the correct sequential order
(c): emphasizing the principle of repetition
(d): distinguishing between sub-skills according to their order

⇨The necessity of following guidance and instructions when teaching tasks
⇨Paying attention, when breaking down the task into sub-skills, that they are logically sequenced and interconnected
⇨Not moving to the next skill until it is fully mastered; and for mastery, the following must be considered:
(a): neuromuscular coordination
(b): speed
(c): accuracy with speed
(d): timing
(e): the ability to perform under different conditions and settings
⇨Reinforcing each sub-skill upon mastery (feedback)

4- Capacity development strategy (training on psychological processes):

It is one of the remedial educational strategies for individuals with learning difficulties. It is considered the main approach that focuses on developing the child's developmental capacities: (thinking, attention, memory, perception). The therapist identifies the specific developmental deficit and then designs a targeted program to treat it.

Educators use this approach with preschool children, where children can be trained in (observation, listening, comparison, understanding). Consequently, these developmental capacities will be well developed for future use in (academic, achievement) skills (Ibrahim, 2010).

⇨The strategy of training on psychological processes aims to treat manifestations of developmental deficits that affect learning. This approach focuses on treating the functions of (psychological, perceptual, cognitive) processes responsible for learning. It helps the student develop perceptual skills such as (discrimination, comparison, generalization), thereby increasing their learning opportunities.

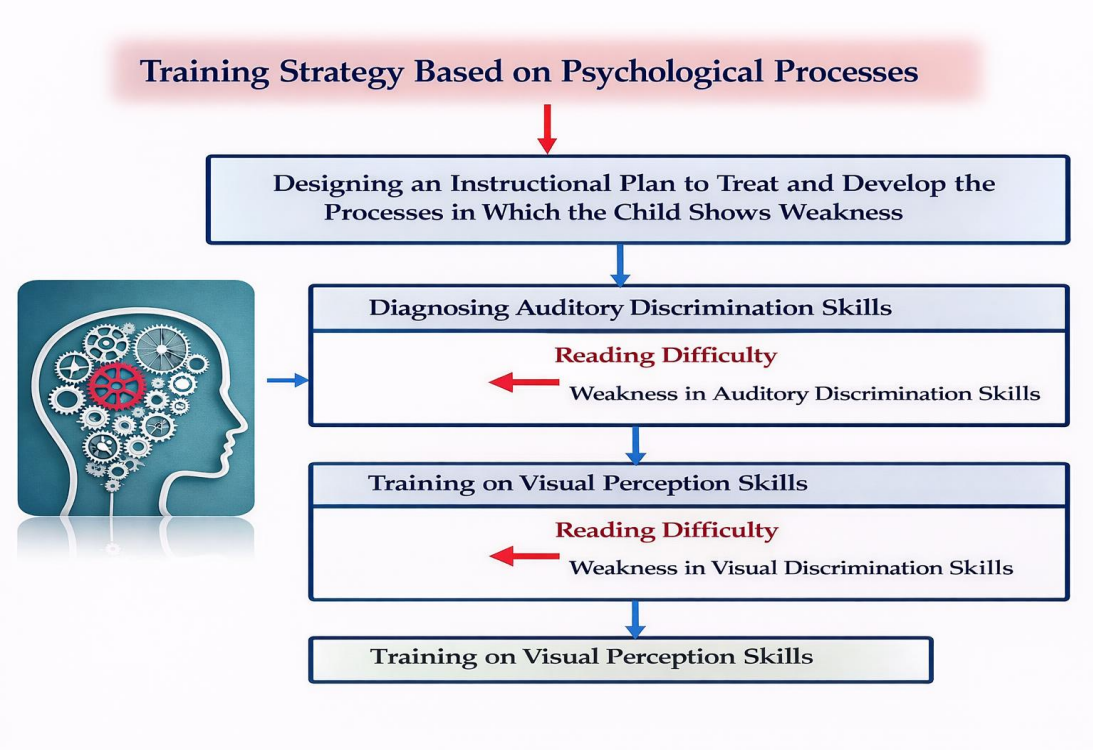

Figure (4) illustrates: the strategy of training on psychological processes

This diagram reflects the "developmental" philosophy in the treatment of learning difficulties, where intervention does not focus solely on observable academic symptoms, but rather delves into addressing the "psychological roots" causing the difficulty. The diagram can be analyzed through the following essential points:

1. Intervention philosophy: designing a therapeutic plan for cognitive functions

The diagram is based on the principle that successful learning is the result of the efficiency of basic psychological processes. Therefore, the primary goal is to design a teaching plan that does not merely simplify content, but targets the remediation of deficient process functions in the child (such as attention, perception, and memory), making the brain more capable of receiving and processing academic information later.

2. Reading difficulty and its relation to auditory discrimination (Auditory Discrimination):

The diagram shows that reading difficulties may not be due to lack of training, but rather to weakness in auditory discrimination skills, where the child struggles to distinguish between similar sounds (such as distinguishing between the sounds of the letters "d" and "ḍ"). In this case, remedial training focuses on strengthening phonological awareness to enable the child to isolate sounds and distinguish their unique auditory characteristics.

3. Reading difficulty and its relation to visual perception (Visual Perception):

In the other pathway presented by the diagram, reading difficulty appears as a result of weakness in discrimination skills related to visual perception. Here, the child needs specific training to help distinguish letter shapes, their orientations, and the subtle differences between them (such as distinguishing between "b, t, th"), ensuring accurate visual input before engaging in the actual reading process.

3- Strategy (training on psychological processes) combined with task analysis:

This strategy is based on integrating the basic concepts of the two previous approaches. It focuses on evaluating the child's abilities and difficulties, conducting task analysis, and identifying the skill that needs to be developed (Ibrahim, 2010).

4- Direct brain training strategy:

A number of studies and research have agreed on the importance of this strategy in balancing the two hemispheres of the brain, by providing stimuli to activate the non-dominant hemisphere of the learner, that is, fully utilizing brain activity in both hemispheres (right/left).

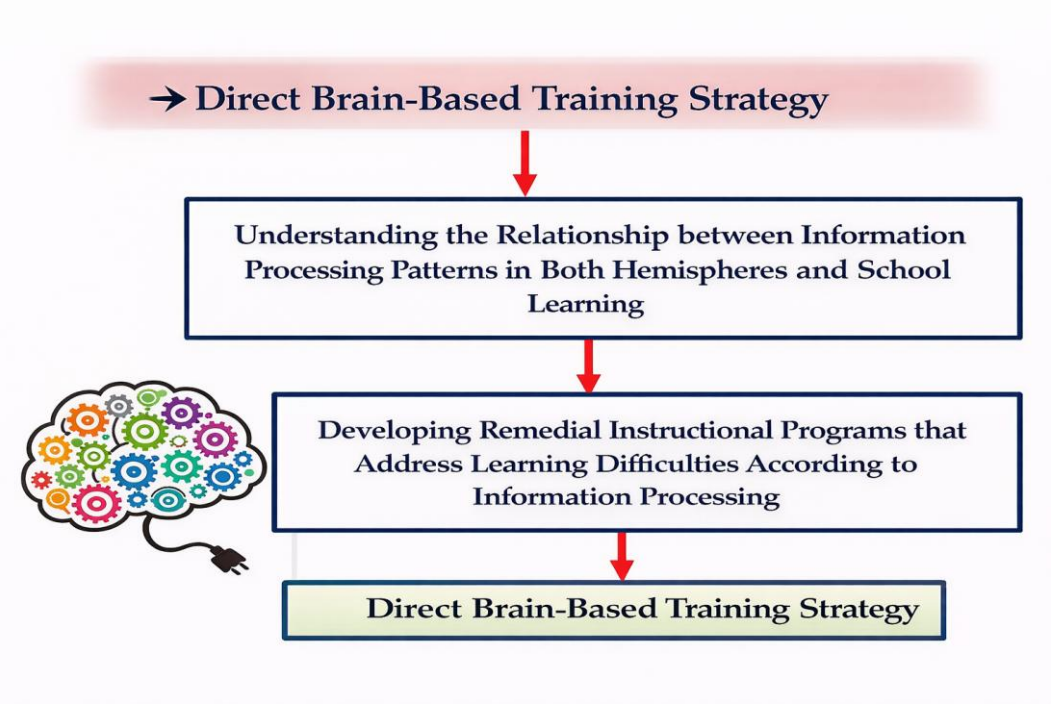

Figure (5) illustrates: the direct brain training strategy

⇨ **Direct Brain Training Strategy (Neuro-Cognitive Intervention)**

This strategy is based on understanding the neural mechanisms underlying the learning process, and it branches into two main pathways as illustrated in the diagram:

1. Understanding processing patterns between the two cerebral hemispheres:

This component relies on studying the "functional specialization" of each hemisphere of the brain. Children with learning difficulties may suffer from a dysfunction in the coordination between the left hemisphere (responsible for analytical, linguistic, and logical processing) and the right hemisphere (responsible for holistic, visual, and spatial processing).

• **Objective:** identifying which pattern dominates the child's information processing, and where the deficiency lies in transmitting neural signals through the "Corpus Callosum."

2. Studying patterns of information processing and school learning:

Here, the diagram moves from anatomy to "function." This pathway examines how the brain receives academic stimuli (reading, arithmetic, writing), and how it encodes and retrieves them.

• **Link to school learning:** if the child's information processing is slow or disorganized, school learning will appear as academic difficulty. Training here aims to improve "neuroplasticity" to increase the speed and efficiency of these processes.

3. Designing specialized remedial teaching programs:

This is the applied outcome of the diagram. Based on understanding the child's "brain map," a remedial program is designed:

• It does not focus on "repetition" of the learning material, but on "activating" the brain areas responsible for the skill.

• Using sensory stimulation techniques to strengthen neural connections related to attention and working memory.

5- Behavior modification strategy:

The behavior modification strategy is based on modifying the individual's observable behavior. It is used in the following cases:

(a) Cases of attention deficit and hyperactivity.

(b) Learning difficulties to improve learners' performance (arithmetic, language).

The behavior modification method through reinforcement has proven to have a positive effect in improving the performance of students with learning difficulties. (Hewett, 1988) treated this category by designing a remedial program aimed at modifying the behavior of children with attention problems, where children were given token reinforcers that could be exchanged for rewards (sweets, games) (Laarechi, 2013).

⇨This strategy is based on the principles of behaviorism, which views behavior as a response to environmental stimuli that can be controlled. It aims to shape or reinforce desirable behaviors and eliminate undesirable ones. It is highly effective in the following cases:

• **(a) Cases of attention deficit and hyperactivity (ADHD):** where distracting stimuli are controlled and the child is trained on focus and sitting for specific periods through structured reinforcement systems.

• **(b) Academic learning difficulties (arithmetic, language):** to improve learners' motivation to complete academic tasks that they often find frustrating.

Reinforcement mechanism through "Token Economy":

Studies have shown that reinforcement is the most powerful driver for improving the performance of students with learning difficulties. Among the leading models is that presented by (Hewett, 1988), who designed a remedial program targeting children with attention problems using a "token economy" system.

This idea is based on giving the child tokens (stickers, plastic pieces, or points) immediately after performing the desired behavior (such as completing a math exercise or remaining calm for a few minutes), which the child can later exchange for material or moral reinforcers of value to them (such as sweets or extra playtime) (Laarechi, 2013).

6- Self-learning strategy:

⇨The self-learning method is considered one of the most suitable approaches for children with learning difficulties to guide and control behavior. In this method, the teacher presents a live model using specific strategies to deal with the student's problems, and the student is asked to observe and imitate:

- ❖ The model performs the task while speaking to themselves aloud (model/teacher).
- ❖ The child performs the same role under the supervision of the model.
- ❖ The child reviews the instructions with themselves.
- ❖ The child uses the self-questioning technique (What should I do? How was my performance?) (Adel, 2010).

❖ The importance of the self-learning strategy:

Figure (6) illustrates: the importance of the self-learning strategy

⇨There is another strategy related to self-learning, including the method known as the general study rules (SQ3R) by the psychologist Robinson. It consists of the student talking to themselves while previewing or scanning the chapter, then reformulating the chapter titles into questions to answer. In other words, the student learns to focus on reading the chapter, then recalling what was read, and finally reviewing the chapter after completing the work. By using this strategy, the student becomes able to work with a greater degree of independence from the teacher (Al-Khafaf, 2014).

7- Educational applications of multiple intelligences in the field of learning difficulties:

By reviewing many previous studies related to the theory of multiple intelligences and learning difficulties, it has been found that there are a number of strategies based on multiple intelligences in improving the achievement of students with learning difficulties. The study by (Stone, 1985), which aimed to identify the academic achievement level of children with learning difficulties through a teaching strategy based on the theory of multiple intelligences, showed a clear improvement in the academic achievement of students with learning difficulties (Salem, 2000).

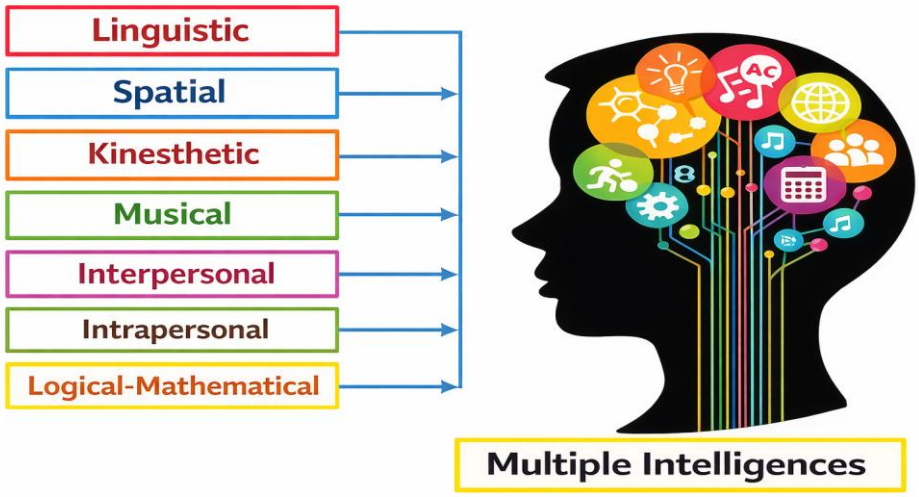

Figure (7) illustrates: types of multiple intelligences.

In what follows, we will attempt to define each strategy individually through illustrative diagrams for further clarification

⇨ **(A): Linguistic intelligence:**

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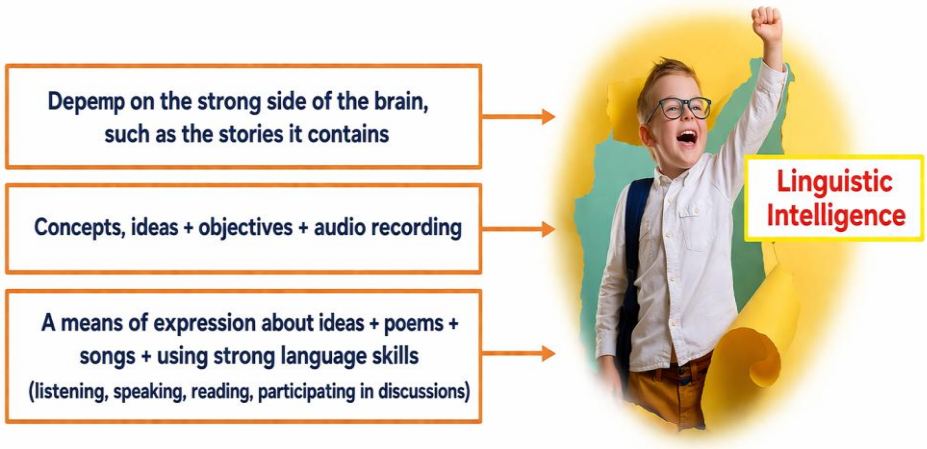

Figure (8) illustrates: linguistic intelligence

The linguistic intelligence strategy is utilized as an effective compensatory channel for children who possess strong verbal or expressive abilities despite difficulties in writing or mechanical reading skills. This strategy relies on employing the "area of strength" in spoken language to overcome the "obstacles" of written language, through the use of storytelling techniques, rich discussions, and audio recordings as alternatives to written note-taking. This approach not only allows the child to express their ideas and feelings freely, but also contributes to building the "semantic bridge" that connects the spoken word with its written symbol, thereby enhancing self-confidence and reducing the level of academic frustration resulting from learning difficulties.

⇨ **(B): Logical intelligence:**

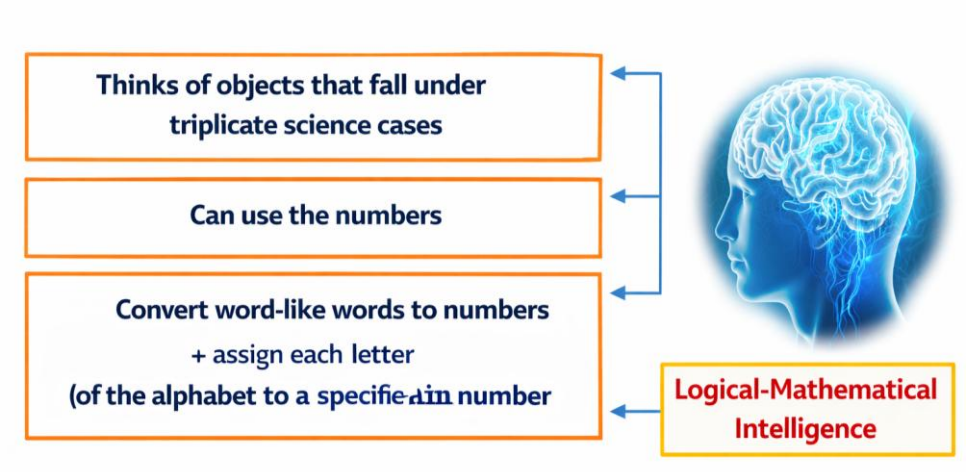

Figure (9) illustrates: logical-mathematical intelligence

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⇨ **(C): Intrapersonal intelligence**

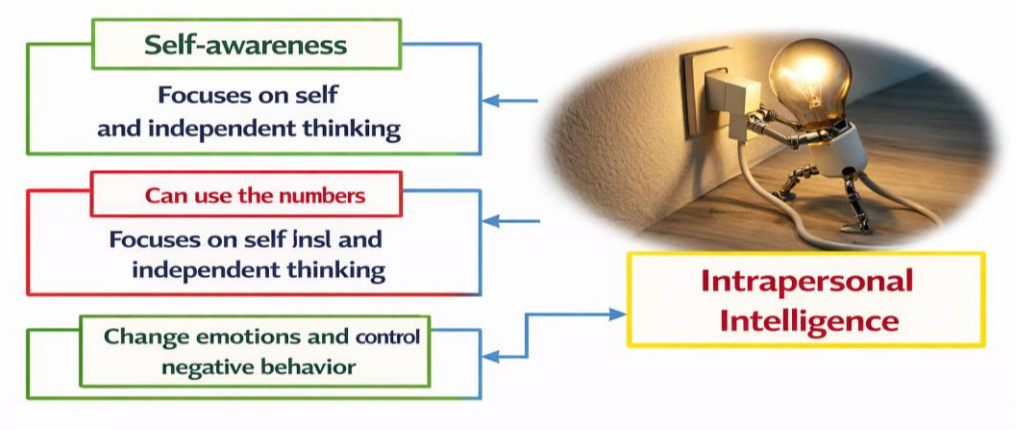


Figure (10) illustrates: intrapersonal intelligence

The intrapersonal intelligence strategy aims to build "psychological resilience" in children with learning difficulties by focusing on self-awareness and understanding the inner world. The therapeutic role of this model is reflected in:

1. Self-esteem and understanding emotions: training the child to recognize their feelings and emotions toward academic failure or success, helping them regulate their reactions and reduce the impact of external criticism.

2. Planning and self-organization: enabling the child to recognize their strengths and weaknesses, and helping them to "properly plan their academic life," transforming them from a passive learner into an active learner aware of their goals.

3. Building intrinsic motivation: by enhancing self-awareness, the child becomes more capable of facing educational challenges with flexibility, where learning difficulty is not seen as a "total inability," but rather as an obstacle that can be overcome through conscious planning.

➪ **4. (D): Spatial intelligence:**

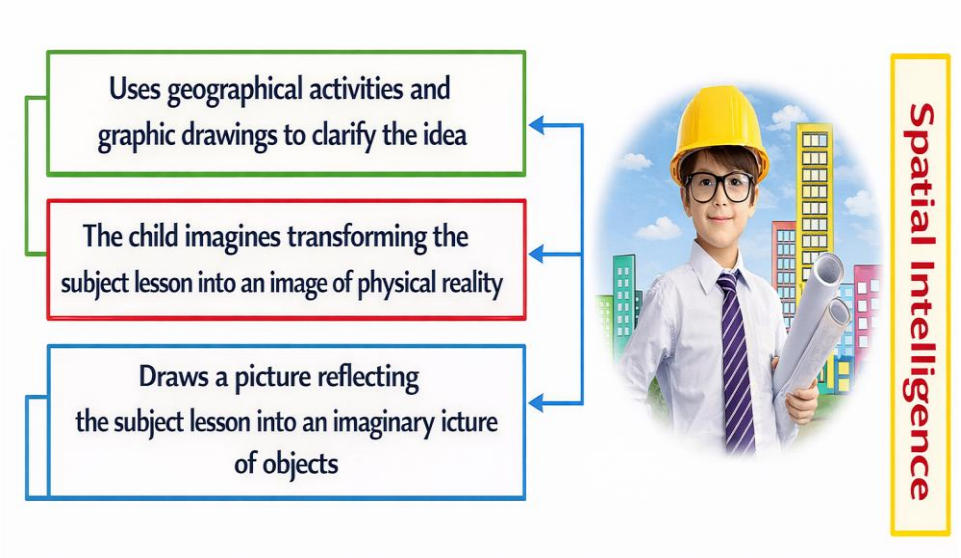
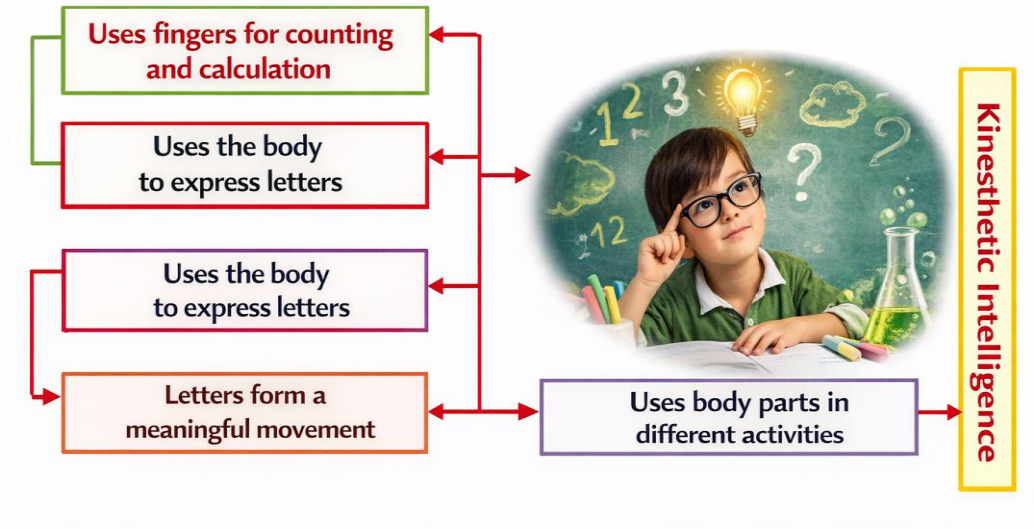


Figure (11) illustrates: spatial intelligence

The spatial intelligence strategy focuses on utilizing the child's ability to "think in images" and transforming abstract concepts into tangible visual models. Its therapeutic role lies in using images, drawings, and diagrams to facilitate the understanding of information, helping the child build a mental map of the learning material instead of relying solely on written texts. This approach also includes the use of colors and designs to differentiate skills, as well as assembly and disassembly games (puzzles) that develop visual-motor coordination, making it an ideal strategy for addressing reading difficulties (dyslexia) and mathematical difficulties by visually representing spatial and quantitative relationships in a way that is easier to store and retrieve.

➪ **(E): Bodily-kinesthetic intelligence**



The bodily-kinesthetic intelligence strategy relies on integrating the body and movement into the learning process, making it a dynamic approach for children who struggle with prolonged sitting or purely theoretical understanding. This model is based on three procedural pathways:

• **Using body parts in various activities:** this includes using fingers for counting and calculation, which concretizes abstract mathematical concepts.

• **Using the body to represent letter movements:** this is an advanced technique in treating reading difficulties, where a distinction is made between moving letters (standing) and static letters (sitting) through corresponding body movements, helping to reinforce phonological awareness and the shape of the letter in the child's muscle memory.
• **Transforming the lesson into logical linguistic patterns:** by linking concepts to movement-based verbal expressions, which facilitates the retrieval of information through neural pathways associated with movement.

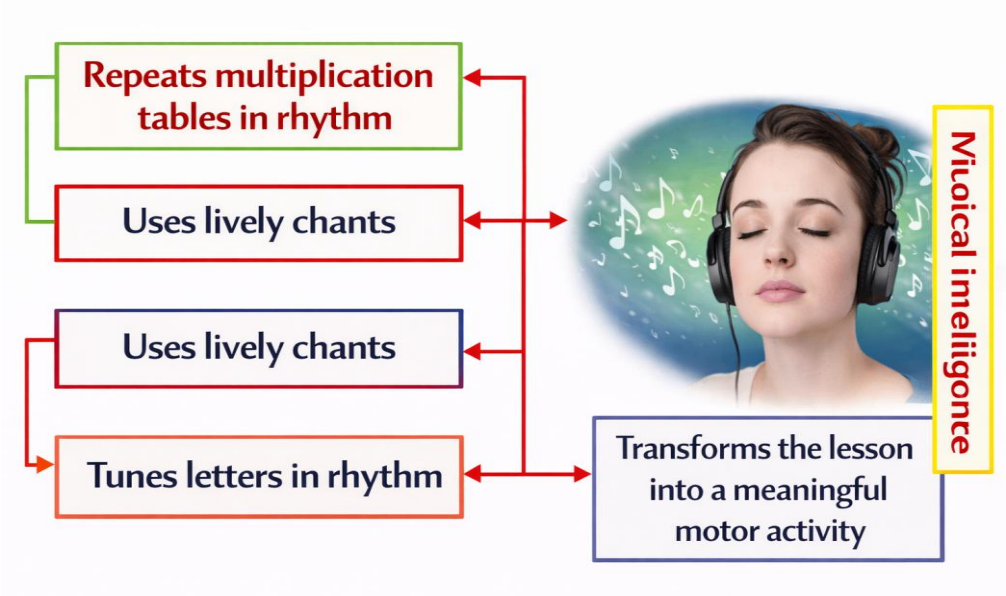
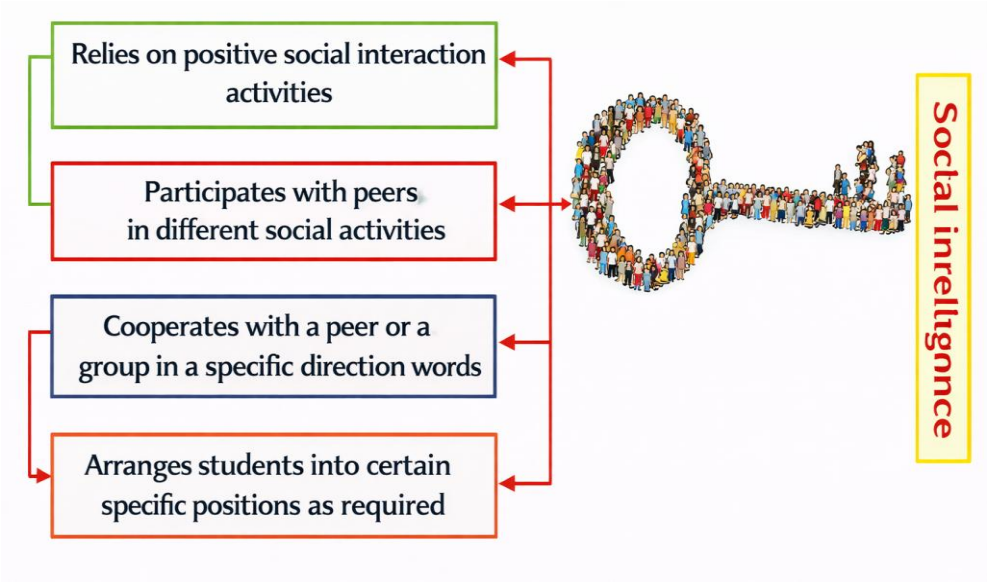


Figure (13) illustrates: musical intelligence

The musical intelligence strategy relies on utilizing "rhythm and melody" to facilitate the encoding of academic information and its retrieval from long-term memory. Its procedural role lies in transforming dry learning material into meaningful educational songs, and using rhythmic patterns to train children on difficult skills such as memorizing multiplication tables or spelling letters. This rhythmic pattern helps increase attention focus and reduce the stress associated with the learning process, making it a highly effective compensatory channel for children who suffer from weakness in auditory memory or difficulties in the logical sequencing of information.

➪ **(Z): Interpersonal intelligence**



➪ **(W): Naturalistic intelligence**

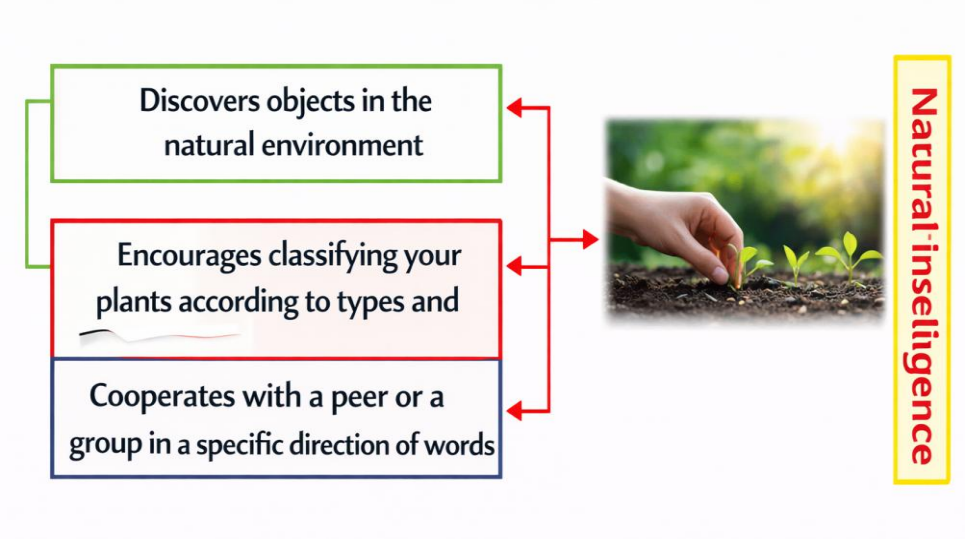


Figure (15) illustrates: naturalistic intelligence

8- Multisensory Training Teaching Strategy:

➪The teacher focuses on all the child's senses (skills, teaching), using instructional materials based on the senses (auditory, visual) (Al-Sartawi, 2014).

➪This approach is based on the principle that the child becomes more receptive to learning when more than one sense is engaged.

➪The (Fernald) method, known as the (VAKT) approach, is considered a model of these methods, where:

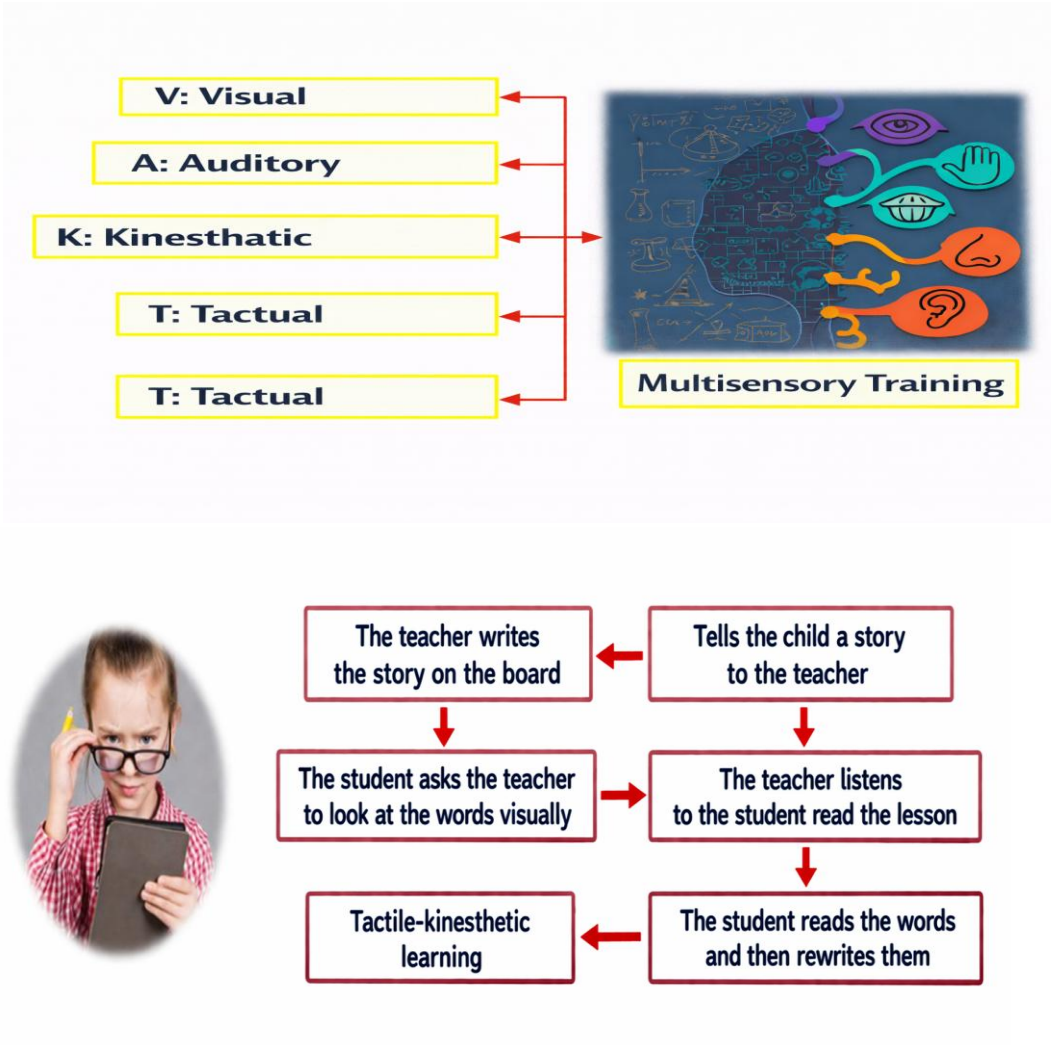


Figure (16) illustrates: naturalistic intelligence

9- Explicit Instruction Strategy:

The explicit instruction strategy (Archer & Hughes, 2011) is distinguished as one of the effective pillars in teaching individuals with learning difficulties. It aims to transmit skills based on clarity and gradual progression, thus leaving no room for guesswork or unguided discovery. Researchers (Pearson & Gallagher, 1983) referred to it as the theory of the "Gradual Release of Responsibility," where the learner is guided sequentially through three stages: (modeling, guided practice, independent practice). This was confirmed by (Gabay et al., 2025), even with individuals with attention deficit and hyperactivity disorder and especially those with dyslexia, as it reduces cognitive load and provides an organized learning environment.

(Hattie, 2023) also confirmed that meta-analyses of explicit instruction show high indicators of academic achievement for this group, making it an urgent therapeutic necessity in early intervention programs.

Based on the review of various strategies, and stemming from the need to overcome procedural fragmentation in dealing with individuals with learning difficulties, the researcher (Fatima Zahra Haj Sabri) proposes the integrative tree model (STM), as illustrated in Figure (17).

This model aims to engineer therapeutic intervention by linking four integrated levels that together form a growing living entity:

• **The roots (neuropsychological foundation):** where neural pathways and basic processes (attention, auditory and visual training) are activated, as they are a fundamental condition for **any real learning.**

• **The trunk (behavioral procedural mechanisms):** which represents the solid structural base, including task analysis, skill decomposition, and a reinforcement system based on token economy to ensure consistency in implementation.

• **The branches (utilization of multiple intelligences and developmental channels):** which represent alternative pathways to reach the learner according to their individual talents (linguistic, bodily-kinesthetic, musical, spatial, intrapersonal, interpersonal, naturalistic).

• **The fruit:** representing the ultimate goal of the model a competent, confident, and academically independent learner.

The structure of this model is completed by surrounding it with the "soil," which represents the surrounding environmental context (family, school, specialists, community), as the nurturing medium that ensures the sustainability of intervention and the generalization of skills. Just as a tree cannot grow in poor soil, therapeutic intervention cannot yield academic independence unless the surrounding environment aligns with its principles, supports its applications, and is capable of embracing the child's neurodiversity with awareness and support.

Thus, the "soil" becomes an active element in the success of the model, interacting with the roots (reinforcing neuropsychological training at home), supporting the trunk (continuity of the reinforcement system), and nourishing the branches (providing an environment rich in multiple intelligences). The originality of the model lies in its vertical integration (from roots to fruit), combined with horizontal multiplicity (across branches), and its embedding within a supportive environmental soil, making it a comprehensive framework that balances the stability of therapeutic procedures with flexibility in adapting to individual and contextual characteristics.

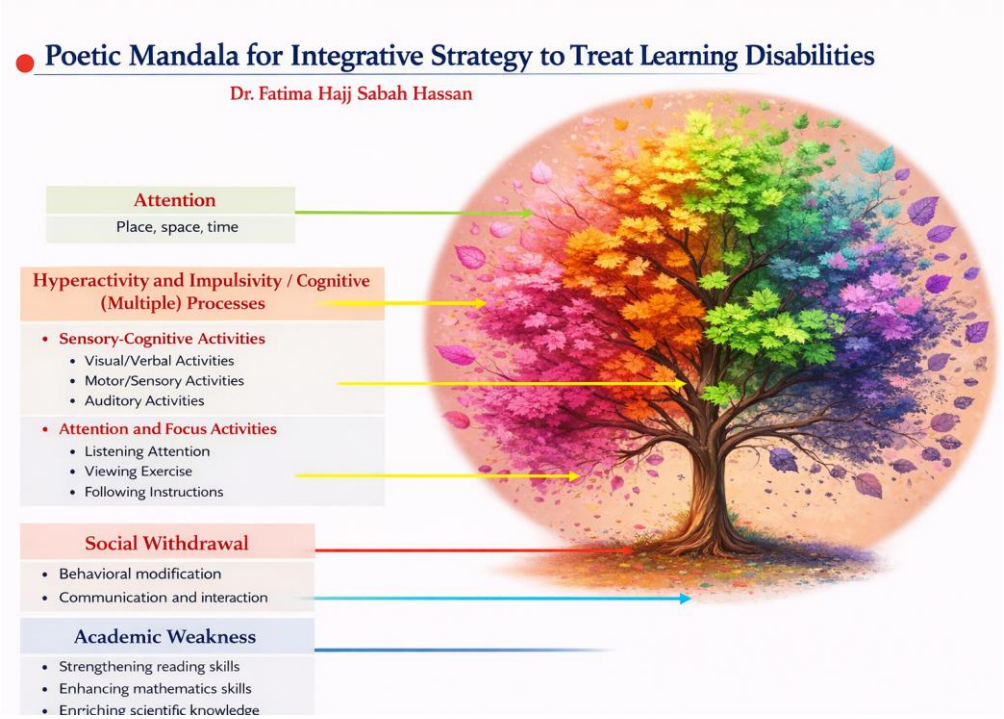


Figure (17) illustrates: the integrative tree model for the therapeutic strategy of children with learning difficulties

⇨Reading of the proposed integrative tree model:

The main focus of therapeutic intervention appears to lie in the "roots" (neuropsychological): where direct brain training and activation of both cerebral hemispheres take place. This represents the foundational base in the proposed model, as no real learning can occur unless neural pathways and basic psychological processes (attention and auditory and visual training) are rehabilitated.

• **Strength in the "trunk" (behavioral procedural):** the trunk serves as the structure that connects theory with practice. By placing task analysis, skill decomposition, and behavior modification at this level, it becomes clear that implementing the therapeutic plan requires a solid structure and a stable reinforcement system (token economy).

• **Diversity in the "branches" (multiple intelligences):** using bright colors for the branches to represent intelligences (linguistic, bodily-kinesthetic, musical, spatial, intrapersonal, interpersonal, naturalistic) gives the impression of flexibility in solutions and the multiplicity of pathways that can be followed with the child according to their talents.

• **Clarity in the "fruit":** the final goal (a competent, confident, and independent learner) appears as a natural outcome and maturity of all previous processes, providing great hope for the reader or practitioner.

• **Surrounding by the "soil" (environmental context):** the family, school, and community represent the nurturing environment that ensures the sustainability of intervention and the generalization of skills. Just as a tree cannot grow in poor soil, therapeutic intervention cannot yield academic independence unless the surrounding environment is aligned with the child's needs and differences.

Future recommendations and prospects:

Since the integrative tree model represents an original theoretical framework, it requires empirical testing to demonstrate its effectiveness in practice. The researcher recommends the following:

First: Conducting longitudinal studies

Tracking samples of children with learning difficulties for at least two years, and measuring changes across the four levels of the model: roots (executive functions and basic processing through neuropsychological tools), trunk (procedural and behavioral adherence through monitoring systems), branches (development of multiple intelligences through performance measures), and fruit (academic independence through achievement and psychosocial adaptation indicators).

Second: Developing quantitative measurement tools

Designing specialized tools to measure the effectiveness of each level of the model separately, especially regarding the "multiplicity of pathways" across the branches and how dynamic feedback between branches and roots is activated.

Third: Testing the model in different cultural contexts

To ensure its generalizability and adapt it according to the characteristics of different educational environments and cultures, through comparative studies across diverse communities.

Fourth: Designing training programs for practitioners

Developing training programs for teachers and specialists based on the integrative tree model, and measuring their impact on professional competencies and the quality of interventions with children with learning difficulties.

Fifth: Studying the role of the environmental context (soil)

Exploring the relationship between the "soil" represented by family, school, and community and the sustainability of the model's impact, in order to identify the most influential environmental factors in the success of therapeutic intervention.

In conclusion, it can be said that the field of therapeutic strategies for children with learning difficulties has witnessed remarkable development in recent decades through diverse procedural approaches and theoretical perspectives that have attempted to bridge the gap between children's latent abilities and their actual academic performance. However, most of these strategies have suffered from procedural fragmentation and a partial view that reduces the child to a single dimension, whether behavioral, cognitive, or developmental.

Based on this limitation, the researcher proposed the Sabri Tree Model (STM) as an original integrative framework that re-engineers therapeutic intervention through five interconnected levels forming a growing living entity: neuropsychological roots, behavioral procedural trunk, branches represented by multiple intelligences, fruit represented by academic independence and psychosocial empowerment, and soil represented by the supportive environmental context (family, school, community). The originality of this model lies in its vertical integration (from roots to fruit), horizontal multiplicity (across branches), and its embedding within a supportive environmental soil, making it a comprehensive framework that balances the stability of therapeutic procedures with flexibility in adapting to individual and contextual characteristics.

The Sabri Tree Model (STM) does not merely present a procedural tool, but rather offers a therapeutic philosophy that restores the child's right to be understood holistically, supported in their diversity, and empowered to be an active participant in their learning journey. It also opens broad horizons for future research, especially in the areas of quantitative effectiveness measurement, longitudinal studies of sustainability, and applications in different cultural contexts. Thus, the Sabri Tree Model represents a scientific contribution to the development of services provided to children with learning difficulties and a step toward achieving the equation: Sustainable human = sustainability + empowerment.

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