



## Lecture3 :

### Learning Difficulties (LD)

#### 1. Introduction

Learning difficulties (LD) represent one of the most significant areas within educational and school psychology (مجالات هامة في علم النفس التربوي) (والمدرسي). They refer to persistent difficulties in acquiring and using academic skills (اكتساب المهارات الأكاديمية واستخدامها), particularly in reading, writing, reasoning, or mathematics, despite adequate intelligence, instruction, and sociocultural opportunity (فرصة) (American Psychiatric Association, 2022).

Learning difficulties affect approximately 5–15% of school-aged children worldwide (على مستوى العالم) (American Psychiatric Association, 2022), making them a central concern for psychologists, educators, and policymakers.

#### 2. Definition and Conceptual Clarification

According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR)* published by the American Psychiatric Association (2022), **Specific Learning Disorder (SLD)** is characterized by:

- Persistent difficulties in reading (dyslexia)
- Difficulties in written expression (dysgraphia)
- Difficulties in mathematics (dyscalculia)

These difficulties must:

- Persist for at least 6 months
- Be below expected level for age
- Interfere with academic or occupational performance
- Not be better explained by intellectual disability or sensory impairments

Earlier definitions from the National Joint Committee on Learning Disabilities (1990) emphasized that learning disabilities are intrinsic to



the individual and presumed to be due to central nervous system dysfunction.

أكدت التعريفات السابقة الصادرة عن اللجنة الوطنية المشتركة المعنية بصعوبات التعلم (1990) أن صعوبات التعلم متأصلة في الفرد ويفترض أنها ناتجة عن خلل في الجهاز العصبي المركزي.

### 3. Types of Learning Difficulties

#### 3.1 Reading Disorder (Dyslexia)

Dyslexia involves difficulty with:

- التعرف على الكلمات • Word recognition
- فك التشفير • Decoding
- التهجئة • Spelling
- الطلاقة في القراءة • Reading fluency

Research by Shaywitz (2003) demonstrated that dyslexia is neurobiological in origin and linked to phonological processing deficits • قصور في المعالجة الصوتية.

Phonological awareness deficits are considered the core impairment (Snowling, 2019). قصور في الوعي الصوتي هي الإعاقة الأساسية

#### 3.2 Mathematics Disorder (Dyscalculia) صعوبة الحساب

Dyscalculia includes:

- Poor number sense
- Difficulty memorizing arithmetic facts حسابية
- Problems with mathematical reasoning التفكير

Studies suggest deficits in working memory and numerical magnitude representation (Geary, 2011). تمثيل المقدار العددي

#### 3.3 Disorder of Written Expression (Dysgraphia) صعوبة الكتابة

This includes:

- Poor spelling تهجئة رديئة



- Grammar errors
- Disorganized writing
- الكتابة اليدوية البطيئة Slow handwriting

It is often linked to executive functioning difficulties and fine motor coordination problems • البطء: غالباً ما يرتبط بصعوبات في الوظائف التنفيذية ومشاكل (Berninger & Richards, 2010). في التنسيق الحركي الدقيق

#### 4. Etiology of Learning Difficulties

Learning difficulties are **multifactorial** , involving تتضمن :

##### 4.1 Neurobiological Factors

Brain imaging تصوير الدماغ studies show differences in:

- Left temporoparietal regions (reading) • المناطق الصدغية الجدارية اليسرى
- Frontal cortex (executive function) القشرة الأمامية (الوظيفة التنفيذية)

Functional MRI studies confirm atypical neural activation patterns in children with dyslexia (Shaywitz, 2003).

تؤكد دراسات التصوير بالرنين المغناطيسي الوظيفي وجود أنماط تنشيط عصبي غير نمطية لدى الأطفال المصابين بعسر القراءة

##### 4.2 Genetic Factors

Family and twin studies show heritability rates between 40% and 60% for reading disabilities (Pennington, 2009).

##### 4.3 Cognitive Processing Deficits

Common deficits include:

- Phonological processing
- Working memory
- معالجة speed معالجة
- Executive functions • الوظائف التنفيذية (Swanson & Siegel, 2001)



#### 4.4 Environmental Influences

Although LD is neurodevelopmental, environmental factors such as:

- Inadequate instruction
- Socioeconomic disadvantage
- Emotional stress

may exacerbate • تفاقم academic difficulties (Lyon et al., 2003).

### 5. Theoretical Perspectives

#### 5.1 Neuropsychological Model

This model links academic deficits to specific brain **الدماغ** dysfunctions.  
اختلالات

#### 5.2 Cognitive Information Processing Model

Focuses on deficits in: نموذج معالجة المعلومات المعرفية

- Encoding
- Storage
- Retrieval الاسترجاع
- • الرقابة التنفيذية التنفيذية

#### 5.3 Behavioral Model

Emphasizes • يؤكد :

- Learning history
- Reinforcement patterns أنماط التعزيز
- Instructional quality جودة التعليم

### 6. Assessment of Learning Difficulties

Assessment must be:

- Multidimensional
- Psychoeducational
- • مطبوعات قياسية



Common tools include:

- Intelligence testing اختبارات الذكاء (e.g., Wechsler Intelligence Scale for Children)
- Achievement tests اختبارات التحصيل •••
- Curriculum-based measures التدابير القائمة على المناهج الدراسية
- Classroom observation

Response to Intervention (RTI) models are increasingly used for early identification (Fletcher et al., 2007).

## 7. Intervention Strategies

### 7.1 Evidence-Based Interventions التدخلات القائمة على الأدلة •

Research strongly supports:

- Explicit phonics instruction
- Multisensory structured language approaches
- Strategy instruction in mathematics

Early intervention produces significantly better outcomes يؤدي التدخل المبكر إلى نتائج أفضل بشكل ملحوظ (Snowling, 2019).

### 7.2 Classroom Accommodations

- Extended time
- Reduced workload انخفاض عبء العمل
- Use of assistive technology استخدام التكنولوجيا المساعدة
- Alternative assessment formats أشكال تقييم بديلة

### 7.3 Psychological Support

Children with LD often experience:

- Low self-esteem
- Anxiety



- العجز المكتسب Learned helplessness

Interventions should integrate cognitive-behavioral strategies to support emotional resilience.

## 8. Emotional and Social Impact

Students with LD are at higher risk for:

- School dropout
- Academic failure
- Depression
- Behavioral disorders (Mugnaini et al., 2009)

Therefore لذلك , interdisciplinary collaboration between:

- School psychologists
- Teachers
- Families

is essential.

## 9. Contemporary Issues

### 9.1 Inclusive Education التعليم الشامل

Inclusive educational systems aim to integrate students with LD into mainstream classrooms with support.

تهدف أنظمة التعليم الشاملة إلى دمج الطلاب ذوي صعوبات التعلم في الفصول الدراسية العادية مع تقديم الدعم اللازم لهم.

### 9.2 Neurodiversity Perspective

Modern approaches frame LD not only as deficits but as cognitive differences requiring adapted instruction.

لا تنظر المناهج الحديثة إلى صعوبات التعلم على أنها مجرد قصور، بل على أنها اختلافات معرفية تتطلب تعليمًا مكيّفًا.

## 10. Conclusion



Learning difficulties are neurodevelopmental disorders affecting academic skill acquisition despite adequate intelligence and opportunity.

They require:

صعوبات التعلم هي اضطرابات في النمو العصبي تؤثر على اكتساب المهارات الأكاديمية على الرغم من توفر الذكاء الكافي والفرص المناسبة. وهي تتطلب ما يلي:

- Early detection
- Comprehensive assessment
- Evidence-based intervention
- Emotional and social support

A holistic نظرة شاملة and multidisciplinary approach ensures better academic and psychological outcomes.