



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية
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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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**Visual-Motor Integration Abilities in a Sample of School Age
Children with Specific Learning Disorder (reading disorder)
Following Multi-Sensory Program Remediation:
A Case Control Prospective Study**

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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List of Abbreviations

<i>Abbr.</i>	<i>Full-term</i>
ADHD	: Attention- deficit/ hyperactivity disorder
ATNR	: Asymmetrical tonic neck reflex
DPT	: Dyslexic Training Program
DSM	: Diagnostic and Statistical Manual of Mental Disorders
ESDT	: Early screening dyslexia test
IDEA	: Individuals with Disabilities Education Act
IQ	: Intelligence quotient
LD	: Learning Disabilities
MMN	: Mismatch negativity
PET	: Positron emission tomography
SD	: Standard deviation
SLD	: Specific Learning Disorders
SPSS	: Statistical package for Social Science
SWLD	: Students with Learning Disabilities
TNR	: Tonic neck reflex
VMI	: Visual-motor integration test
VWFA	: Visual word form area
WISC	: Wechsler Intelligence Scale for children

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Introduction

Specific learning disorders are neurodevelopmental disorders where one or more of basic processes involved in understanding or in using language spoken or written are affected despite of average IQ and proper education sufficient to age group. Visual processing and motor integration are related to poor academic outcomes (visual processing is up to 6.6% for reading problem, 2.2% for math computation and 2.7% for spelling) (*Molloy et al., 2017*). That is why the aim of this study is to determine the correlation and to provide a program that is efficient for use to address such problem in children with specific learning disorders especially those with reading disorder. Using Criteria for diagnosis of Specific Learning Disorder according to DSM 5 (*American psychiatric Association diagnostic and statistical manual of mental disorders 5th edition DSM-5, 2013*).

The four diagnostic criteria are to be met based on a clinical senses of the individual's history (developmental, medical, family, educational, school reports and psychoeducational assessment).

- A) Difficulties learning and using academic skills as indicated a difficulty in learning and using Academic Skills, as indicated by the presence of at least one of the following symptoms that have persisted for at least six

months, despite the provision of interventions that target those difficulties.

1. Inaccurate or slow and effortful word reading.
 2. Difficulty understanding the meaning of what is read.
 3. Difficulties with spelling
 - a. Add
 - b. Omit
 - c. Substitute vowels or consonants
 4. Difficulties with written expressions
 5. Difficulties mastering number sense, number facts, or calculation
 6. Difficulties with mathematical reasoning
- B) The affected academic skills are substantially and quantitatively below those expected for the individuals chronological age and cause significant interference with academic and occupational performance.
- C) The learning difficulties beginning during school age years but may not become fully manifest until the demands for those affected academic skills exceed individuals limited capacities.
- D) The learning difficulties are not better accounted for by intellectual disabilities and corrected visual or auditory acuity other mental or neurological disorders. Language, inadequate educational instruction.

Prevalence:

Reading disorder is the most common form of learning difficulties, with prevalence of, at least 10% of any given population depending on the orthographic system worldwide. 4% of school age children in the United States (*Sadock et al., 2009*).

Gender prevalence: increased boy prevalence of reading disorder worldwide than girls reflected a bias of selection, boys act out when having academic problems while girls tends to appear more as if not interested in studding and being missed diagnosed, there is no significant gender difference (*Quinn and Wagner, 2015*).

In Egyptian population, boy to girl prevalence is 1.3:3 for children (*El Sheik, et al., 2016*) 10% prevalence in UK, and world-wide (*Hennessy et al., 2020*).

Problems of visual motor integration in Specific Learning Disorder:

Visual motor integration is the ability of the eye and hand to work together in an effective pattern and functional proper way to translate what is read into Motor activity, therefore helping the comprehension of symbols seen visually (*Carson et al., 2021*). Inappropriate interpretation of visual, auditory, proprioception signals certainly affects motor