

Regulating the Diagnosis of Learning Disability and the Provision of Test Accommodations in Institutions of Higher Education

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Prevalence of LD in Higher Education

- Research suggests 3% severe and 6% moderate-mild dyslexia (Miles, 2006)
- 10% in 2008 in GB (Dyslexia Action and BDA)

Higher education in Israel

- 3.0% in 1998
- 6.7% in 2008 (Israeli Council of Higher Education)

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Background

- The diagnosis of learning disabilities (LD) is a very complex undertaking
- It is especially challenging when the main purpose is determining eligibility for accommodations in high-stake tests
- In this context, standardization, objectivity and fairness must not be compromised

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Objectives

This paper describes an endeavor to develop policy and procedures for –

- Standardizing and regulating the diagnosis of LD
- Provision of test accommodations in the academic context
- The endeavor was undertaken by NITE in cooperation with the Council of Higher Education in Israel

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Standardizing and Regulating the Diagnosis of LD

1. Development, validation and norming of a comprehensive test battery for the diagnosis of LD
2. Development of a statistical decision rule for determining diagnosis based on a combination of test results
3. Development of guidelines for the provision of test accommodations
4. Establishment of diagnostic centers within institutions of higher education
5. Dissemination of the regulations and policy

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Requirements of Diagnosis for Determining Eligibility

- Maximal standardization of tests and the decision-making process
- Definitive diagnosis of specific disabilities
- Accurate estimation of severity
- Screening for possible malingering
- Legal admissibility
- Transparency

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Standardization of the Diagnosis Procedure

- A comprehensive, standardized, computer-based test battery for the diagnosis of LD was developed (**MATAL**)
- Standard administration procedure was defined
- All test and performance measures were validated
- National norms were developed (N=508)
- A standard, structured, diagnostic report was designed

Professional experts in LD served on an advisory committee and were involved in all aspects of the test battery development process.

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MATAL : Development Process

1. Operational definition of learning disability
2. Classification of learning disabilities
3. Identification of relevant academic & cognitive functions
4. Development of appropriate diagnostic tools
5. Validation of the diagnostic tools
6. Norm development
7. Development of criteria for determining disability
8. Development of validity-oriented guidelines for the granting of test accommodations

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MATAL Test Battery: Special Features

- Target population: adults aged 16-30
- The disabilities diagnosed are: Dyslexia, Dysgraphia, Dyscalculia and Attention Deficit Disorder
- Deficits in memory, attention, visual perception and speed of processing are also diagnosed
- All tests are administered by computer.
- A trained examiner is present throughout the entire session

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MATAL Test Battery: Special Features

- Instructions appear on screen and are available in audio mode
- Each test is preceded by a training session
- Oral responses are recorded by the computer
- Specific checks are applied to detect malingering
- Response latencies are recorded with ± 7 ms accuracy

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MATAL: Diagnostic System

Standardized diagnostic tools

- Extensive personal questionnaire (58 items)
- ADD questionnaire (98 items)
- Test battery:
 - 20 tests
 - 54 performance measures

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MATAL: Diagnostic System

Additional data collected

- Medical & educational history
- Previous diagnoses of LD
- Other documents indicating various difficulties
- School reports
- Examiner observations report
- Intake interview

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MATAL: Test Battery

Language (Reading & Writing)		Mathematics / Numeracy	Visual Perception
Vocal Text Reading	Verbal Fluency	Computational Automaticity	Parallel processing
Non-word Reading (production)	Syntactic Awareness	Procedural Knowledge	Serial processing
Non-word Reading (Identification)	Reading Comprehension	Number Sense	Attention
Phonemic Deletion	Dictation	Memory	Continuous Performance Task (CPT)
Phonemic Count	English Reading Comprehension	Auditory Verbal Memory	Attentional Network (ANT)
Rapid Automatic Naming (RAN)	English Listening Comprehension		ADHD self-report questionnaire

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Statistical Decision Rule for Determining Diagnosis

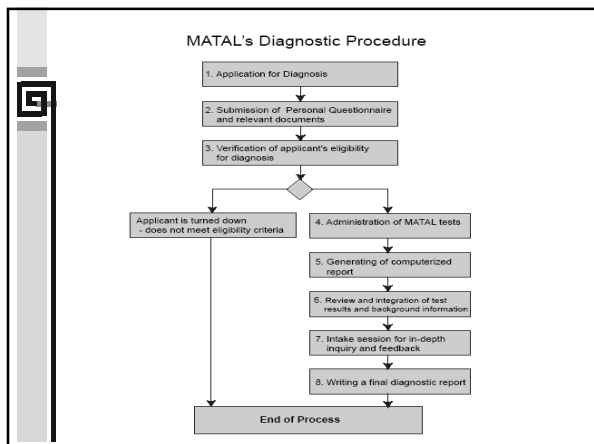
- A prediction model was developed for each of the four disabilities using *ridge Logistic regression*
- Three levels were defined for each disability:
 - none / light-moderate / moderate-severe
- Two cutoff points were set using the following criteria:
 - 2 std below norm mean
 - The mean score of the relevant clinical group

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Computerized Diagnosis Report

Summary of results based on MATAL tests				
	Dyslexia	Dyscalculia	Dysgraphia	ADD
Diagnosis	Moderate - severe	ND	Light - moderate	ND
# of extreme results	1		1	
# of missing measures	-	-	-	-
Diagnosis for valid results	Light - moderate	ND	Light - moderate	ND

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Guidelines for the Provision of Accommodations in Academic Tests

- Detailed guidelines were developed to standardize the provision of accommodations and to facilitate the work of the support centers
- The document was developed by a committee of 18 members, representing 14 institutions of higher education
- Committee members were expert clinicians and/or heads of support centers
- Implementation of the guidelines is not obligatory

Each institution is autonomous in adopting the guidelines in accordance with its general policy, the availability of appropriate resources, and the specific requirements of each academic program.

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Guidelines for the Provision of Accommodations in Academic Tests

- The Guidelines include:**
 - General principles for the provision of test accommodations
 - A list of 17 accommodations, and detailed criteria for their provision, with respect to each of the four disabilities diagnosed by MATAL

Each accommodation is also classified by:

- **Level:** the extent to which it compromises validity
- **Type:** cost and applicability

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Accommodation Guidelines: Example

Use of word processor		Level=1; Type=Standard	
Dyslexia	Dysgraphia	Dyscalculia	ADD / ADHD
Frequent and/or severe spelling errors	Incomprehensible handwriting Very slow writing pace Frequent and/or severe spelling errors	NA	Difficulties in organization of writing products
Comments: <ul style="list-style-type: none"> Access to Internet should be blocked Eligibility for use of word processor overlaps eligibility for ignoring spelling errors 			

Establishment of Diagnostic Centers

- MATAL**-based diagnostic centers were opened in 12 colleges and universities
- The centers are geographically spread out
- Diagnosis cost is regulated and affordable
- Specific criteria were set with respect to personnel qualifications, facilities and equipment required for testing
- Extensive training workshops prepare clinicians and examiners to administer and use **MATAL**

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Dissemination of the Regulations & Policy

- The accommodations provision guidelines were made available to clinicians and support centers
- Orientation materials for managerial and academic staff were developed and published
- A nationwide network of clinicians who use **MATAL** was established to facilitate communication and to resolve professional dilemmas
- A nationwide network of LD support officers in universities and colleges was established
- Seminars for **MA TAL** users and clients were held
- A central internet-based registration site was established

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Future plans

- Development of a central database for research purposes
- Mapping of learning aids and types of assistance
- Conducting validation studies based on larger samples
- Translation and adaptation of **MATAL** for Arabic-speaking students
- Development of special norms for immigrant students
- Adaptation of **MATAL** for other clients in Israel, such as the K-12 education system

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Thank you

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