Chapter 18
Mathematical Learning and Its Difficulties in Israel

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Introduction

Adults and children with low numerosity experience disadvantages both in the classroom and in day-to-day life. They have trouble making financial and medical decisions and evaluating risks (Agarwal & Mazumder, 2013; Gerardi, Goette, & Meier, 2013; Reyna, Nelson, Han, & Dieckmann, 2009). Their career choices are limited by their weakness in math, and their chance of being unemployed is increased (Henik, Rubinsten, & Ashkenazi, 2011). However, not until recently has the educational and academic field recognized math difficulties as a stand-alone learning disability. Until now, math learning disability (MLD) has been neglected both in educational and academic fields compared with other learning disabilities such as reading disability (Ashkenazi, Black, Abrams, Hoeft, & Menon, 2013).

There is a debate in numerical cognition research on the nature of the cognitive weaknesses underlying MLD (also known as developmental dyscalculia) and the most effective diagnostic tools for identifying MLD (Träff, Olsson, Östergren, & Skagerlund, 2017). While the core deficit approach suggests that school math is strongly influenced by innate preverbal number sense ability (the ability to intuitively understand approximate quantity and relations between quantities) and, hence, MLD originates from weakness in number sense

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A. Fritz et al. (eds.), *International Handbook of Mathematical Learning Difficulties*, https://doi.org/10.1007/978-3-319-97148-3_18

(Butterworth, Varma, & Laurillard, 2011; Dehaene, Piazza, Pinel, & Cohen, 2003; Halberda & Feigenson, 2008; Halberda, Ly, Wilmer, Naiman, & Germine, 2012; Halberda, Mazzocco, & Feigenson, 2008), other theories suggest that MLDs originate from cognitive abilities that are not unique to math, such as impairments in working memory or executive functions (Ashkenazi, Rosenberg-Lee, Metcalfe, Swigart, & Menon, 2013; Szűcs, 2016; Szucs, Devine, Soltesz, Nobes, & Gabriel, 2013).

Due to this worldwide debate regarding MLD (Träff et al., 2017), locally in Israel, there are inadequate definitions and a deficit of acceptable diagnostic tools for assessing MLD. As a result, currently there is not even a single standardized normed tool to diagnose MLD in children in Israel.

This chapter aims to examine the Israeli case of MLD and mathematics education. First, we will briefly discuss the cultural background of Israel, which has deeply influenced the educational system. We will then describe the mathematics education policy in Israel. Afterward, we will address the international differences in math abilities tested by the Programme for International Student Assessment (PISA). Next, we will look at the definition of MLD in the primary and secondary educational system of Israel, future changes in the policy of diagnosis, and remediation of MLD in children and current remediation programs for children with MLD. Lastly, we will discuss the diagnosis of MLD in institutes of higher education in Israel.

General Description: Population and Diversity

The state of Israel is relatively young, 70 years old (it was founded in 1948). It is defined as a Jewish and democratic state, and it has been constantly changing (Masri, 2017). One of the most significant and ongoing changes is the immigration of new Jewish population into Israeli society (Zangwill, 2017). This resulted in a large number of immigrants from different socioeconomic backgrounds who immigrated to Israel during the years 1948–2000. Most of the founders of Israel arrived from European countries. However, during the years 1948–1960, the population of Israel increased 9.2% and diversified due to immigration. Over half of the new immigrants arrived from Africa and Asia (53%), and the remainder arrived from Europe and the United States. During the years 1990–1995, another wave of immigrants arrived from the former Union of Soviet Socialist Republics yielding a population increase of 3.2% (Eckstein & Weiss, 2004).

Another important change in Israeli society is related to the relatively high religious diversity in Israel. The Israeli population is comprised of religious minorities including Arabs (Muslim, Christian, and Druse) and the Jewish majority. For example, during the first years of the country, the Arab population was 18% of the general population and decreased to 11% during the 1960s. Currently (2017), the religious composition is 74.9% Jews, 20.9% Arabs, and 4.5% others. Hence, the Israeli population is very diverse, both culturally and socioeconomically. The complexity of

Israel's diversity poses great challenges to its education system ("Statistical Abstract of Israel 2017," 2017).

Due to the common observance of traditional customs, the average fertility rate of Israel is one of the highest in all of the Organization for Economic Cooperation and Development (OECD) countries. Specifically, in 2015, 45.7% of the population of Israel was younger than 15 years of age; in a comparison of 185 countries, Israel ranks 110 in fertility. The high fertility rate stems from the observant religious sectors (ultra-Orthodox and Arab). In line with the heterogeneous fertility rates in Israel, there is a significant wealth gap. Generally, Israel's gross domestic product (GDP – a score representing the economic performance of an entire country) was 83.2, ranking 48 out of 155 countries. However, in contrast to the heterogenic socioeconomic status in Israel, the government expenditure on education (% of GDP) is medium to high. Specifically in 2013 the government expenditure on education was 5.9, ranking 17 out of 75 countries (see Table 18.1). The government expenditure on education was higher than 6 between the years 1990 and 2000, decreased to 5.5 in

Table 18.1 *Government expenditure on education (GEOE, % of GDP) by country

Country	GEOE*	Rank
Malawi	7.7	1
Sweden	7.7	2
Finland	7.2	3
Ukraine	6.7	6
Mozambique	6.5	7
Malaysia	6.1	11
Ghana	6	12
Honduras	5.9	15
Israel	*5.9*	*16*
United Kingdom	5.7	18
Austria	5.6	19
Bhutan	5.6	20
Netherlands	5.6	21
Barbados	5.5	22
Australia	5.3	25
Rwanda	5	29
Colombia	4.9	30
Niger	4.9	32
Saint Lucia	4.7	33
Benin	4.6	34
Chile	4.6	35
Japan	3.8	48
Mauritius	3.7	49
Albania	3.5	50
Philippines	3.4	53
Iran (Islamic Republic of)	3.2	56

Notes. Data from the United Nations Development Programme (2016)

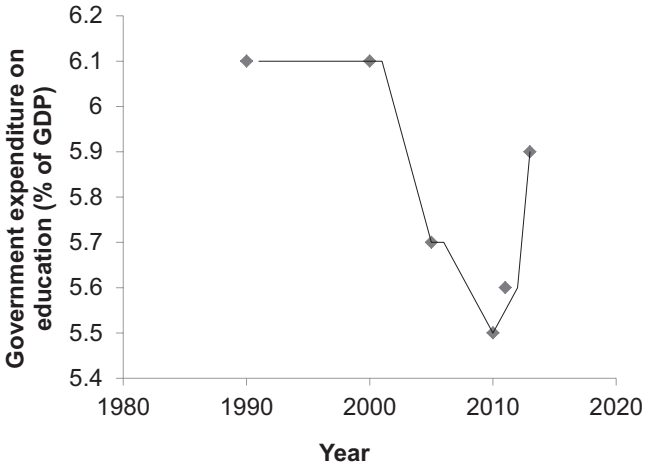

Fig. 18.1 Change in government expenditure on education in Israel 1990–2015. (Data from the United Nations Development Programme (2016))

2010, and since then has been increasing (see Fig. 18.1) (United Nations Development Programme, 2016). These statistic data further emphasize the heterogeneity in Israel (cultural, religious, and socioeconomic). Providing equal educational opportunities in such a heterogeneous society is one of the greatest challenges facing the Israeli educational system. The relatively high expenditure on education in Israel aims to achieve this goal.

General Education and Mathematics Education in Israel

From the early years of the country, due to the cultural diversity and the high number of immigrants in Israel, the local education system has dealt with two main contrasting principles: (1) the education system of Israel should serve as a melting pot, a tool to educate new immigrants and assimilate them to the foundational culture, and (2) acknowledging the cultural diversity of minorities and providing autonomy to schools to make their own educational choices (e.g., particular textbooks for each minority) (Zameret, 2012). In the first years of the country, the education system in Israel emphasized the first principle (i.e., melting pot) and mostly ignored the second one (i.e., cultural diversity) (Zameret, 2012). However, currently the two principles (i.e., melting pot and cultural diversity) are being emphasized simultaneously in the education system of Israel (State of Israel, Ministry of Education, 2003). The Ministry of Education developed a core educational program (including a detailed curriculum for each subject) that should be applied to all subjects in the schools in Israel while providing flexibility to minorities to help achieve specific additional educational goals (State of Israel, Ministry of Education, 2003).

Today there is a compulsory education law in Israel. The law determines that every child in Israel must be in the framework of education (kindergarten or school) from the age of 3 through kindergarten until the 12th grade. This law obliges the child's parents to enroll in the educational institution and to ensure the regular attendance of the child. The duty of the state is to provide free education from kindergarten to the end of high school (The Knesset, 2007). The Israeli educational system can be classified into schools that are under the full supervision of the Ministry of Education and schools that are not. This latter category consists mainly of the ultra-Orthodox Jewish school system and comprises approximately 20% of all students in the Israeli school system. According to governmental regulations, these unofficial schools must also uphold a set of standards, including administrative, pedagogical, physical, and social that are similar to the standards of official schools (State of Israel, Ministry of Education, 2003).

Math education in Israel begins at the age of 3 and continues throughout primary and secondary schooling. Each age group has a specific math curriculum. The math curriculum details what should be taught in each class level and how many hours each subject should be taught (see Table 18.2 for the curriculum for elementary school) (State of Israel, Ministry of Education, 2003). In general, there are five to six math lessons a week in the main educational system. However, due to the guiding principle of cultural diversity, the core educational program obligates the study of math for 3, 4, or 5 h a week in schools that are not under the full supervision of the Ministry of Education, in effect defining a standard but allowing variance based on school administrative choices (State of Israel, Ministry of Education, 2005). National tests are conducted by the Ministry of Education which monitors students' level of achievement in different areas of the country and in the various population sectors.

Various teaching methods are allowed by the Ministry of Education, as illustrated by the number of authorized math textbooks in Israel. Each school can choose their preferred textbooks. All textbooks are written in Hebrew and Arabic and include digital versions with hyperlinks to additional math activities.

Table 18.2 Math curriculum in elementary schools in Israel by grade

	1st grade	2nd grade	3rd grade	4th grade	5th grade	6th grade
Natural numbers	X	X	X	X	X	X
Operation in natural numbers	X	X	X	X	X	X
Fractions	X	X	X	X	X	X
Decimals					X	X
Percentages					X	X
Ratio						X
Units of measurements	X	X	X	X	X	X
Data research		X	X	X	X	X
Measurements	X	X	X	X	X	X
Geometry	X	X	X	X	X	X

International Educational Tests in Math in Israel

One way to evaluate math ability in Israel compared with other countries is with international educational tests. Israel has participated in a large number of these international tests including Trends in International Mathematics and Science Study (TIMSS) and PISA. On these early tests (1960s), Israel was ranked among the first 12 countries in mathematical achievements. However, only part of the Israeli population was permitted to take part in these tests: the Arab pupils as well as new Jewish immigrants from underdeveloped countries were excluded (Cohen 2007, taken from Feniger, Livneh, & Yogev, 2012), improving the relative performance of Israel on those international tests. To this day some Israeli students are still excluded from these international tests, however, to a lesser extent than previous years: (1) The strictly Orthodox Jews, which are not obligated to participate in the general math curriculum, and (2) the Arab students in Jerusalem, of whom approximately 90% are studying according to the Palestinian curriculum. These two categories of students could reach 20% of the students in Israel, yielding an overestimation of Israel's national average on these international tests.

One of the most updated published scores of international tests in Israel is the PISA. The PISA is administered to 15-year-old students from all the OECD countries, and it tests mathematics, among other subjects. In 2015, Israel received a score of 470 points in PISA in the mathematics section, a score that is 20 points lower than the average OECD score, ranking Israel 42 out of 70 countries (see Table 18.3) (OECD, 2017). Questions on the PISA mathematics section can be categorized into Levels 1–6. Level 1 proficiency identifies students that can answer questions with familiar contexts (e.g., about money) where all relevant information is present and the questions are clearly defined. Level 6 proficiency includes students that can draw on a range of interrelated scientific ideas. 32% of the students scored at Level 1 on the PISA (considered low achievers), compared with 23% on average for OECD (see Table 18.3). Israel's mathematics scores on the PISA have improved every year since 2006 (OECD, 2017). However, mathematical achievement in Israel still remains below average and a large percentage of students still exhibit weakness in mathematics. This can partially be explained by the low economic status of Israel and the high fertility rate in Israel (Feniger et al., 2012).

Diagnosis of Mathematical Learning Disabilities in the Israeli School System

The current diagnosis of MLD in the Israeli school system is founded on the definition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) IV (1994). MLD should be diagnosed if one can prove two observed learning disparities: (1) within students, a gap between the expected level of math abilities according to intellectual level and actual performances, and (2) between students,

Table 18.3 PISA Scores on 2015, by country, mean score, and rank of scores and percentage of low achievers in math (Below Level 2) and rank of low achievers

Country	Mean score			Percentage of students below Level 2	
	Mean	S.E.		Percentage of students	Rank
Hong Kong (China)	548	(3.0)	2	9.0	3
Macao (China)	544	(1.1)	3	6.6	1
Korea	524	(3.7)	7	15.5	11
Switzerland	521	(2.9)	8	15.8	12
Canada	516	(2.3)	10	14.4	9
Denmark	511	(2.2)	12	13.6	8
Finland	511	(2.3)	13	13.6	7
Belgium	507	(2.4)	15	20.1	25
Germany	506	(2.9)	16	17.2	17
Poland	504	(2.4)	17	17.2	18
Norway	502	(2.2)	19	17.1	16
Sweden	494	(3.2)	24	20.8	26
Australia	494	(1.6)	25	22.0	32
France	493	(2.1)	26	23.5	37
European Union total	493	(0.8)	27	22.1	33
United Kingdom	492	(2.5)	28	21.9	31
Czech Republic	492	(2.4)	29	21.7	29
Portugal	492	(2.5)	30	23.8	39
OECD average	490	(0.4)	31	23.4	36
Italy	490	(2.8)	32	23.3	35
Iceland	488	(2.0)	33	23.6	38
Spain	486	(2.2)	34	22.2	34
Hungary	477	(2.5)	40	28.0	43
Slovak Republic	475	(2.7)	41	27.7	42
Israel	470	(3.6)	42	32.1	48
United States	470	(3.2)	43	29.4	46
Greece	454	(3.8)	46	35.8	50

a gap of 2 or more years between math abilities that are expected from the student according to grade level and actual performances. There is a fundamental problem related to the second gap in Israel: currently, there is no normed diagnostic tool for assessing MLD for Israeli children. Therefore, a reliable gap between observed math level and expected math level according to grade level cannot be accurately tested in Israeli children. Instead, most of the MLD diagnostic tests in Israel are local curriculum-based tests including grade level math test, similar to those administered in schools. Curriculum-based tests are examinations of math subject matter that should be learned in each grade level, according to the Israeli Ministry of Education. Please see Table 18.2 for the subject matter in the mathematical curriculum in Israel according to grade level. Table 18.4 presents an example for an Israeli curriculum-based test that was developed by e.g. the authors of this section

Table 18.4 Israeli curriculum-based test subdivided into subtest and content

Subtest	Content	Example
Part A. Knowledge of numbers		
Number-word sequence	Counting forward Counting backward	Count from 793 to 801 Count from 506 to 498
Numerical system	Understanding of the base-ten system	Build biggest/smallest number from a given set of written digits (e.g., 3, 7, 4, 8)
	Equation transformation from horizontal to vertical position	Write: 340 + 3+ 5706 = 6049
	Recognition of a numerical place value within a written number	What is the value of the digit 5 in the number: 1252?
Series of numbers	Number series completion	Complete the following series: 463, 473, 483, ___, ___, ___
Part B. Knowledge of number operations		
Equation	Addition Subtraction	200 + ___ = 550 ____ – 100 = 600
Simple multi-digit arithmetic	Addition Subtraction Multiplication Division	20 + 50 = 70–30 = 40 × 30 = 90/30 =
Written word problems	Arithmetical operation presented in verbal format	In each class there are 25 children. How many children are there in 5 classes?
Arithmetic algorithm	Addition	24 *+37*
	Subtraction	56 *−43*
	Multiplication	45 *×3*
	Division	*94* 6
Estimation of written math problems	Multiplication	Is 32 × 19 bigger or smaller than 400?

(Ashkenazi, Mark-Zigdon, & Henik, 2009, 2013). Although Israel's population is highly heterogeneous, the math curriculum serves as a guideline for each grade level. However, due to the various permutations of the curriculum used across different schools, the use of non-normed curriculum-based tests is insufficient. Alternatively, normed tests from other countries have been applied. This method is also flawed due to international differences in math curricula. Therefore, a normed tool is urgently needed to correctly diagnose MLD.

Students in Israel who are diagnosed with MLD are entitled to receive appropriate school accommodations, including special assistance in school (personalized teaching methods and out-of-classroom interventions) and testing accommodations. Currently the Ministry of Education places an emphasis on the latter, i.e., testing accommodations (see the next section for a full explanation). In order to receive testing accommodations throughout schooling and during the final high school exam, two MLD

diagnostic evaluations are authorized: (1) didactic evaluation, including testing of learning processes, such as math, and the building blocks of these learning processes, such as numerical comparison, and (2) psycho-didactic evaluation, including the didactic assessment, in addition to testing cognitive abilities and emotional difficulties that may impair learning. While a specialized psychologist is allowed to perform a psycho-didactic evaluation, the law regarding how didactic diagnosis is to be performed is less clear. However, there are very clear rules in the educational system about the evaluation (didactic or psycho-didactic) required to receive specific testing accommodations especially during the final high school exam.

Testing accommodations were divided into three levels in Israel according to their potential to benefit students without learning disabilities. Level 1 – testing accommodation does not change the content of the test and will not benefit children without learning disabilities (such as providing an extended formula page during the math test). Level 2 – testing accommodation might change the content of the test. Level 3 – testing accommodation will change the content of the test; hence they will be granted with extra caution and only to students with very severe cases of learning disabilities. For example, students diagnosed with severe MLD, accompanied by weakness in understanding basic numerical quantity mechanisms, receive the opportunity to replace the final high school math exam with another scientific subject such as biology or chemistry. While the testing accommodations of Levels 1 and 2 are approved by an in-school committee based on a didactic or psycho-didactic diagnosis, Level 3 testing accommodations are approved by an out-of-school district committee, according to the recommendations of a psycho-didactic evaluation only.

Please note that the diagnosis of MLD in Israel, based on the DSM-IV, has not been updated following the release of the new DSM-V in 2013. In the DSM-V, two major changes have been made in relation to the DSM-IV. Firstly, the in-student gap (discrepancy between intelligence level and math performance) is no longer necessary for the diagnosis of learning disability. Secondly, the separated diagnoses of dyslexia, dyscalculia, and dysgraphia are all united as one category of specific learning disabilities (one can specify particular weakness in an individual's reading, writing, or mathematical performance). Hence, major changes should be made in the diagnosis of learning disabilities in Israel and across the world. The next section will address the future plan, announced by the ministry of education, to change the diagnostic process.

Current Changes in the Diagnosis and Treatment of MLD in Israel

The percentage of students that are diagnosed as suffering from learning disabilities in the Israeli educational system increases every year. During the year 2000, 14% of the students in the education system were diagnosed with learning disabilities. The percentage of diagnosed students increased each year, and during 2013, it reached 41.3% (Psychological Consultation Services, 2017); this percentage is much higher than

expected in reference to different studies examining prevalence rates of learning disabilities. Specifically in Israel, in 1996, the prevalence rate of MLD was found to be 6.4% (Gross-Tsur, Manor, & Shalev, 1996), the prevalence rate of MLD worldwide is between 3 and 6% (Reigosa-Crespo et al., 2012; Shalev, Manor, Amir, & Gross-Tsur, 1993; Von Aster & Shalev, 2007), and similar prevalence rates can be found in dyslexia (between 5% and 17% in different studies (Shaywitz, 1998)) and a similar prevalence rate of ADHD (the ADD/HD worldwide-pooled prevalence was 5.29%) (Guilherme, Maurício, Bernardo, Joseph, & Luis, 2007). Due to the inconsistency between the expected prevalence rate and the observed number of students that receive a diagnosis of learning disabilities, and as a result receive test accommodations, in addition to worldwide changes in the view that related to learning disabilities (moving to the diagnosis criterion of DSM-V, see the above section), a professional committee was called by the Israeli Ministry of Education during 2014 to discuss current changes in the policy toward students with learning disabilities: "Margalit Committee II" (Margalit et al., 2014). This committee included both professors from the Israeli universities investigating learning disabilities and policy-makers from the Ministry of Education. The main recommendation of the committee was to increase the resources devoted to remedial teaching in the school system while decreasing the resources devoted to diagnosis. Accordingly, the Ministry of Education created a new program that is now being piloted; according to the new program, the diagnostic process of learning disabilities will follow the model of response to intervention (RTI). Hence, the model of diagnosis of MLD will focus on a few in-school processes:

1. Mapping the math achievements of the entire school population by administering an in-class test. The children with the lowest achievements on the test will then be tracked and provided with in-class personalized teaching strategies.
2. Follow-up assessment of math achievement consisting of an in-class test and identifying students that still exhibit low achievement in class. These students will be provided with evidence-based remedial teaching in small groups, by a teacher who is specifically trained for that purpose.
3. Follow-up assessment of math level using a special tool (assessing MLD) and tracking the lowest achieving students. These students will be given personalized intervention by educators specialized in learning disability.
4. If a student did not reach the needed level after the personalized intervention, then a full diagnosis will be given to the student outside of school by a professional examiner with knowledge of learning disability (Psychological Consultation Services, 2017).

Teaching Accommodations for Children Suffering from MLD in Israel

The current theoretical approach of the ministry of education in Israel is to increase the resources devoted to remedial teaching in the school system while decreasing the resources devoted to diagnosis. Hence, it is important to set guidelines to create

a customized intervention program according to the individual abilities and needs of each student. The intervention program should follow the general math curriculum. Teachers can create accommodations for each student by modifying the mathematical material: reducing or expanding it according to the child's strengths and weaknesses identified by the in-class diagnosis or providing an alternative math topic that requires application of the same mathematical principles (see Ministry Protocol, November 1, 2005, Amendment 3.1). To facilitate this process, the "Accommodations Document of the General Math Curriculum for Special Education Students" was published (Ministry of Education, 2014). This document is organized by mathematical topics and notably not by grade level. Each topic is broken down into specific math sub-topics and goals, recommending the appropriate teaching methods and didactic clarifications related to typical difficulties in the teaching of mathematics for students with MLD.

For example, for the goal of "acquisition of the multiplication tables," three subgoals were suggested, aimed at students with different cognitive styles of learning:

1. Understanding-based multiplication table learning. The recommended activities for this sub-goal require that the children rely on an understanding of the connection between addition and multiplication or on mathematical laws such as commutative and distributive laws and use known facts to solve new problems.
2. Memorization-based multiplication tables learning. Here, games, songs, patterns, and cards were suggested.
3. Combination-based multiplication tables learning.

In order for the teachers to choose the appropriate goals for the learner's characteristics, they should bear in mind: (1) the assessment results, which provide information on the student's numerical knowledge and cognitive skills and (2) awareness of the required math knowledge for the student's age and grade level curriculum. Based on these considerations teachers may choose the appropriate goals and subgoals to initiate. By referring to the relevant documents, they can administer the appropriate accommodations and activities to use. This program was designed for students in the special education system. Students in the general education system with the diagnosis of MLD are expected to learn according to the curriculum's requirements (see Table 18.2).

Diagnosis of MLD in Universities in Israel

On 2008, a law determining the rights of students with learning disabilities that are studying in post-secondary educational institutions was signed by the Knesset (Israel's parliament). The law included a few main requirements: every post-secondary educational institute should build a support center for students with learning disabilities and provide customized testing accommodations for students with learning disabilities and follow the recommendation of an approved diagnosis tool (derived from the law for the rights of students with learning disabilities that are studying in above high school institutes (Olmert, Tamir, Yishai, Peres, & Itzik,

2008). However, most of the diagnostic tools in Israel at that point were inadequate. For example, there was not even one single standardized norm tool to test math abilities. To fill this void, the MATAL was developed by Israel's National Institute for Testing and Evaluation. The MATAL assesses proficiency in mathematics, reading, writing, and English (as a second language), as well as ADHD (Ashkenazi & Danan, 2017; Ashkenazi & Silverman, 2017). The diagnostic battery includes 2 questionnaires and 20 tasks to test reading, writing, math abilities, and English as a second language. The diagnostic battery includes three mathematical or numerical tasks:

1. Calculation automaticity. The goal of the task was to measure retrieval of arithmetic facts. The task included 80 simple arithmetic equations (e.g., $2 \times 3 = 6$) that were presented sequentially on the computer screen; the participant needed to answer if the equation was correct or incorrect by keypress. The equations are divided equally into addition, subtraction, multiplication, and division problems.
2. Procedural knowledge. The participants needed to ascertain if the equation was correct or incorrect by keypress. The equations included numbers that ranged from one to four integers. All the equations required logarithmic, simple calculations. The equations were divided equally into addition, subtraction, multiplication, and division and evenly into correct and incorrect solutions within each category (e.g., $45 + 25 = 70$ or $1850 - 350 = 1550$).
3. Number line knowledge. This task measured understanding of the mental number line. For each trial, different values appeared at the anchors of the number line, below the line. Two target points marked with the same value are presented on the number line, and the participant needs to ascertain which of the target points were marked correctly. The distance between the target points was 20% or 40% of the length of the whole line. The number lines included natural numbers, fractions, and negative numbers.

Based on the result of these tests, computerized algorithms will determine whether a student is suffering from MLD and, if so, its severity: light, moderate, or severe. According to the evaluation results, the support center for students with learning disabilities might suggest specific testing accommodations and specialized academic assistance to the student.

Conclusion

This chapter introduced the complexity of the Israeli educational system and MLD. Confronted by a diverse influx of new immigrants (e.g., European and North African) and composition of residents (e.g., Muslim, Christian, and Jewish), the educational system mediated between two contrasting principles of assimilation to uniform educational standards and providing autonomy to schools to make their own educational decisions based on their unique cultures. To this day, this dichotomy exists (with greater emphasis on autonomy), and the burden on the educational system is further compounded by a growing young population.

Regardless of the type of schooling, math is one of the core subjects in Israel. The Israeli math curriculum starts at the age of 3 and includes a very detailed plan accompanied by national evaluation of math ability in each grade level. However, in comparison with other OECD countries (using international performance tests), Israeli students receive relatively low math scores. One of the explanations for these lower scores may be the high socioeconomic diversity in Israel. This indicates a need to examine new ways to promote math education in Israel.

Two areas of future growth for math education in Israel are the diagnosis of MLD and the development of appropriate interventions. There is still worldwide debate regarding the most effective diagnostic and remediation processes for MLD. In Israel, no standardized normed tool has been developed to assess MLD. Instead, local curriculum-based tests are used to test MLD. Difficulties in MLD diagnosis may be related to the assessment process of learning disabilities in Israel in general. Current diagnostic procedures have resulted in a relatively high percentage of Israeli students who receive test accommodations on their final high school exams, in relation to the expected prevalence rates found in literature. Future plans by the Ministry of Education to diagnose learning disabilities according to RTI are expected to greatly change MLD assessment in Israel, among other learning disabilities, and impact intervention plans. This will further the current Education Ministry's aim to reduce the resources dedicated to diagnosis and increase the resources devoted to remedial teaching.

Notably, MLD diagnosis in Israel is most advanced in institutes of higher learning. By law, every post-secondary educational institute is obligated to establish a support center for students with learning disabilities. In these support centers, a standardized normed tool was developed to assess MLD, among other learning disabilities.

The development of a standardized normed tool to diagnose MLD in institutes of higher learning, but not yet in primary and secondary schools, demonstrates one of the complexities and discrepancies in the case of MLD in Israel. However, current plans are underway in the creation of a standardized normed tool for assessing MLD in students under the age of 18.

Another weakness in the assessment process of learning disabilities in Israel is the assessment and treatment of MLD on the basis of outdated definitions. Following the new definition of specific learning disability in the DSM-V, the Ministry of Education in Israel has created a detailed plan to change the diagnostic process and treatment of MLD. This program will promote tailored in-school interventions. In parallel, the out-of-school diagnostic process will be postponed to allow students remediation through in-school interventions. Delayed assessment will be carried out by authorized out-of-school diagnostic centers in the case of lack of improvement following in-school remediation.

As reflected by this chapter, the most appropriate assessment of MLD and subsequent remedial plans are still under debate. Plethora of new endeavors, including emphasis on attempts at in-school early remediation and development of standardized normed assessment tools, indicate current and future progress in the treatment of MLD in Israel.

Acknowledgment The authors would like to thank Sarit Silverman for her help in conceptualization of this chapter and Dr. Dorit Neria, the director of the discipline of mathematics for preschool and primary school education in the Ministry of Education, for her valuable feedback.

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