

# **Test Accommodations and Positive affect among Adolescents with Learning Disabilities: The Mediating Role of Attitudes, Academic Self-efficacy, Loneliness and Hope<sup>1</sup>**

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The growing number of students with Learning Disabilities (LD) who are granted test accommodations raises many theoretical questions with educational implications. The aim of the current study is to examine levels of positive affect as an indicator of wellbeing among students with LD who receive test accommodations and to identify the mediating role of personal resources such as academic self-efficacy, hope, attitudes towards test accommodations and loneliness. Two groups of junior high school students (157 students with LD and 278 typical development peers) completed questionnaires about their attitudes towards test accommodations, their positive affect, academic self-efficacy, loneliness and hope. Results indicate that students with LD who are entitled to test accommodations reported lower levels of academic self-efficacy, hope and positive affect compared to their typical development peers. A serial multiple mediation analysis demonstrates that personal resources as well as attitudes fully mediated the relations between receiving such accommodations and positive affect. This study offers unique, though preliminary, findings about the important relations between receiving test accommodations and attitudes about them, positive affect and personal resources by providing a deeper look at the complexity of the relations between the factors that predict students' wellbeing.

*Keywords:* Academic self-efficacy, Accommodations, Hope, Learning-disabilities, loneliness

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## Introduction

**Test accommodations** are modifications made to tests or testing conditions that allow students with disabilities such as learning disabilities (LD) to demonstrate their knowledge. Common modifications include extending the amount of time students are given to complete a test, having someone else write down their answers, or listening to questions read aloud by text-to-speech software. Since students with LD often face many academic challenges, schools provide them with test accommodations to ensure that they will be able to demonstrate their knowledge without lowering academic standards or threatening the validity of exam scores. Although it is generally considered legitimate to provide academic accessibility to students with disabilities (Fuchs, Fuchs, & Capizzi, 2005), the growing numbers of students who are entitled to such accommodations in Israel, as in many Western countries, have raised questions especially about the impact of the accommodations on the students' achievements (Cawthon, Ho, Patel, Potvin, & Trundt, 2009) and on classroom climate (Lovett, 2014).

Researchers have reported that many students with LD have positive perceptions of testing accommodations (Lang, Elliott, Bolt, & Kratochwill, 2008; Rogers, Lazarus, & Thurlow, 2014). However, only a few studies have examined their impact on students' self-perceptions and wellbeing, as well as the perceptions of their peers. Several studies have suggested that test accommodations might have a positive effect on students' performance on tests by improving test-related self-efficacy and motivation (Feldman, Kim, & Elliott, 2011)

The increase in the number of students who are granted test accommodations is particularly dramatic during the transition from elementary school to junior high school, reflecting students' reactions to the many environmental changes (Forgan & Vaughn, 2000) – changes that may tax their academic self-efficacy (ASE), hopeful expectations, social relatedness and loneliness. Students move from small elementary schools with personalized school environments, familiar peers and supportive teachers to larger junior high schools with more demanding academic tasks (Barber & Olsen, 2004; Madjar & Cohen-Malayev, 2016). There is a need for in-depth studies of their relations with social and emotional demands in order to clarify the dynamics and mediating variables that predict wellbeing and adjustment (Ofiesh, Moniz, & Bisagno, 2015). The goals of the present study are to examine levels of positive affect as an indicator of wellbeing among students with LD who receive test accommodations and to determine whether personal resources, attitudes and interpersonal risks play a mediating role.

### Positive Affect (PA) and Test Accommodations

Positive Affect (PA) is considered a positive activating system of behavior (Watson, Wiese, Vaidya, & Tellegen, 1999), an important element in one's satisfaction with life and wellbeing (Longo, 2015), and a factor related to happiness and engagement (Watson & Naragon-Gainey, 2014). It allows

youngsters to benefit from academic and social opportunities, while enhancing personal resources and buffering the effects of negative affect (Ramsey & Gentzler, 2015). PA in adolescents' daily experiences offers numerous benefits. According to the broaden-and-build theory, PA expands their attention, promoting creative thinking, problem solving, active exploration, approach behaviors and positive social interactions (Fredrickson, 2001). These actions, in turn, allow individuals to build personal resources that outlast the positive states that promoted them in the first place.

Test accommodations might have paradoxical impacts. While they are granted to ensure equal academic opportunities, offering significant help in coping with challenging academic demands, at the same time, they affirm the youngster's painful, stigmatic status as someone with disabilities who is engaged in a constant struggle with schoolwork. Therefore, it is not clear if these test accommodations support PA or reduce it. Academic self-efficacy, loneliness, hope and effort as personal resources may mediate the relation between test accommodations and PA.

### **Academic Self-Efficacy (ASE)**

The importance of academic self-efficacy (ASE) and its relation to academic achievement has already been established (Zimmerman, 2000). Beliefs about one's ASE represent the expectations and judgments about one's own competence (Bandura, 2015). Research has examined the ASE of typical development (TD) students as well as of students with a high incidence of disabilities such as LD and ADHD, who are entitled to test accommodations. These studies have demonstrated the positive relations between academic achievements and ASE, while focusing attention on the diminished ASE reported by students with LD (Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2011; Høigaard, Kovač, Øverby, & Haugen, 2015; Lackaye & Margalit, 2006). Only a few studies have dealt with the relations between test accommodations and ASE, suggesting that the former have a positive effect on students' test performance by improving test-related self-efficacy and motivation, especially for students with learning disabilities (Feldman, Kim, & Elliott, 2011). We propose that the first mediating factor that might explain the relations between the experiences of students with test accommodations and PA is their ASE as a personal resource. In addition, considering the developmental importance of social relations with peers (Margalit, 2012), loneliness may be considered a risk factor for PA.

### **Loneliness**

Loneliness is a global indicator of a painful psychological experience, reflecting a discrepancy between one's expected and existing social connections (Stein & Tuval-Mashiach, 2015). For many youngsters, it is a transient state, but for some, it is a prolonged, distressful reality (Qualter et al., 2015) and a major developmental risk. Research has identified it as a predictor of negative affect, depression, and reduced PA (Joiner, Catanzaro, Rudd, & Rajab, 1999; Maes,

Vanhalst, Spithoven, Van den Noortgate, & Goossens, 2016; Vanhalst et al., 2015). Students with disabilities often report greater loneliness than their peers. Still, several studies documented inconsistent results, focusing attention on resilient subgroups of young people with disabilities whose loneliness did not differ from that of their peers (Houghton, Roost, Carroll, & Brandtman, 2015; Margalit, 2012; Zach, Yazdi-Ugav, & Zeev, 2016). It is not clear if in addition to academic accessibility, the provision of test accommodations might emphasize the adolescents' personal and social difficulties, contributing to painful stigmatization (Pinel & Bosson, 2013), and increasing their social exclusion and alienation. The past experiences of social difficulties and loneliness during childhood may also predict persistent loneliness and less PA during adolescence. Nevertheless, hope as a future expectation and effort in engaging in school may lead to changes that provide a different perspective and serve as mediating factors.

### **Hope**

Hope consists of two interdependent factors essential to realizing one's goals: agency and pathways. The former is the belief in one's ability to achieve his/her personal goals. The latter refers to the ability to identify multiple methods for coping with the obstacles one encounters along the way to these goals (Snyder, 2002). Students who exhibit heightened feelings of hope at different age levels are more likely to stay engaged in their studies, invest more effort in school activities, and report more PA (Feldman & Kubota, 2015; Sharabi & Margalit, 2014; Valle, Huebner, & Suldo, 2006). Studies have documented the relations between students' difficulties and their lower levels of hope compared to their TD peers (Sharabi & Margalit, 2014).

### **Theoretical Integration and the Purpose of the Present Study**

In summary, the growing number of students who receive test accommodations raises many questions about academic outcomes. Nevertheless, consideration of the attitudes towards such accommodations and their emotional impact has been neglected. The large numbers of students with LD who receive test accommodations create a new reality in classrooms' environment that might have an emotional impact not only on the students who receive them, but also on their TD peers. Earlier studies have documented struggles of children with LD who face academic challenges resulting in their lower levels of ASE and hope and higher levels of loneliness. We hypothesized that students with LD would have more positive attitudes towards the test accommodations than their TD peers and consider them helpful and a legitimate right. In addition, their ASE, loneliness and hope will mediate the relations between receiving test accommodations and their PA.

## Method

### Participants

The sample consisted of 435 Israeli junior high school students in grades seven through nine (201 boys and 234 girls) ranging in age from 11.0 to 15.0 years ( $M=13.12$ ,  $SD=0.82$ ). All students who attended 13 classes in 5 junior high schools serving neighborhoods in urban areas of central Israel participated in the study except those students that their parents did not provide their consent to their participation. The participants included 157 students (69 boys and 88 girls) with LD and 278 non-LD students (132 boys and 146 girls) from the same classes. A comparison of the students' ages and gender proportions among the groups (group with LD and the comparison group) did not yield significant differences.

The accommodations consisted mostly of extended testing time (149 children, 94.9% of the group with LD), a reader to dictate questions (110 students, 70.1% of this group) and a writer to record responses (64 students, 40.8% of this group).

In order to compare the self-reported learning status of the groups (TD peers and students with LD), a MANOVA was performed with the groups of youngsters and gender as the independent variables, and their average level of achievement in history, mathematics and English as a second language as the dependent variables. The MANOVA yielded a main effect for the LD groups, ( $F(3, 429) = 17.47$ ,  $p = .00$ , partial  $\eta^2 = .11$ ) and for gender ( $F(3, 429) = 3.47$ ,  $p = .02$ , partial  $\eta^2 = .02$ ), but not for interactions. Means, standard deviations and F scores of the univariate analysis are presented in Table 1. As expected, students with LD reported lower levels of achievement than the TD students in the three subjects. Gender comparisons revealed that boys had higher achievements in mathematics (boys:  $M = 3.04$ ,  $SD = 1.00$ ; girls:  $M=2.81$ ,  $SD = 1.02$ ),  $F(1,435) = 8.07$ ,  $p<.01$ , partial  $\eta^2 = .02$ ), and in English as a second language (boys:  $M = 3.07$ ,  $SD = 0.96$ ; girls:  $M=2.84$ ,  $SD = 1.02$ ;  $F(1,435) = 5.87$ ,  $p<.05$ , partial  $\eta^2 = .01$ )), but no significant differences were found in history.

Table 1. Group Comparisons among the Research Variables: Means, SDs, and F Scores

Variables	LD group <sup>a</sup> (N=157)	TD group <sup>b</sup> (N=278)	F(1,431)	Partial Eta <sup>2</sup>
	M (SD)	M(SD)		
History	3.11 (0.81)	3.49 (0.66)	25.20**	.055
Mathematics	2.85 (0.99)	3.22 (0.82)	15.90**	.036
English <sup>1</sup>	2.54 (1.04)	3.17 (0.90)	24.42**	.089
ASE <sup>2</sup>	4.57 (1.36)	5.02 (1.28)	10.95**	.025
Loneliness	1.60 (0.46)	1.58 (0.47)	0.43	.001
Hope	4.00 (0.95)	4.38 (0.91)	15.35**	.034
Positive Mood	2.93 (0.77)	3.17 (0.83)	8.57**	.019
Attitudes	2.47 (0.60)	1.99 (0.54)	86.00**	.166

\* $p<.05$ ; \*\* $p<.01$

Note: <sup>1</sup>English – English as a second language; <sup>2</sup>ASE – Academic Self-Efficacy

<sup>a</sup>Group 1: LD (Students with Learning disabilities who got accommodations)

<sup>b</sup>Group 2: TD (Typical Development Peers)

All of the students with LD were identified using the Israeli Ministry of Education's criteria. These criteria included the presence of a verbal and/or performance IQ score in the low to average range (IQ higher than 90), scores on achievement tests at least one standard deviation below their IQ score in one or more areas of functioning, and evidence of a processing deficit in one or more cognitive and/or linguistic domains. These students had been previously identified via psycho-educational evaluations as demonstrating LD in reading, writing, and/or mathematics. In line with educational policy, these students were deemed entitled to learning and test accommodations, including accommodations on national examinations at the end of high school. Diagnostic evaluations were conducted by the municipality's psycho-educational agency and by the psycho-educational team of each school. In line with the recommendations resulting from the diagnosis, students with LD received assistance from resource teachers with special education accreditation during school hours, as well as test accommodations when needed, including changes in testing conditions such as extended time, the ignoring of spelling errors, and oral examinations. The diagnostic assessments included instruments such as the Wechsler Intelligence Scale for Children (3<sup>rd</sup> edition) (Wechsler, 1991), the Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983), the Bender-Gestalt Test (Koppitz, 1975), and the Hebrew adaptation of the Rey Auditory Verbal Learning Test (Vakil & Blachstein, 1993), as well as achievement tests in reading, writing, and arithmetic. Due to confidentiality directives, only group data, rather than specific information regarding individual children's disabilities, were available. Their LD diagnosis was confirmed by the school counselors.

## Instruments

**Beliefs about test accommodations.** To determine the various aspects of students' beliefs about test accommodations, we developed an attitude scale consisting of 22 items on a 5-point Likert-type scale, ranging from 0 (I don't agree) to 5 (I agree completely). A higher score reflects a more positive attitude. It consisted of statements that expressed the desire for various test accommodations such as: "I wish I got extended time," statements that expressed beliefs about the benefit of test accommodations in promoting academic achievements such as: "How much do you believe that the accommodation helps improve grades?" and statements that emphasized disability rights such as: "Students with LD should get accommodations because of their difficulties." The Cronbach's alpha for the total scale was .82.

**Positive affect.** To assess positive affect (PA), we used the Hebrew adaptation (Ben-Zur, 2002) of the short 20-item scale positive and negative affect scale (PANAS) in its trait format (Watson, Clark, & Tellegen, 1988), which refers to everyday feelings and affects. The scale is comprised of 20 adjectives depicting various affective states (e.g., enthusiastic, hostile), with 10 positive items rated on a 1–5 scale (1=not at all; 5=a lot), and 10 negative items rated on the same scale. The two subscales, namely, positive and negative affect, show high internal reliabilities (Watson et al., 1988). In the current study we used only the positive

subscale with a Cronbach's alpha of .83

**Academic Self Efficacy (ASE).** To measure ASE, we used the Hebrew adaptation of the ASE scale (Zimmerman, Bandura, & Martinez-Pons, 1992) consisting of 11 statements describing the students' beliefs about how they can cope with various academic tasks in order to succeed in their studies (e.g., "I can concentrate on my studies," "I can do my homework"). The measure uses a 7-point Likert scale with endpoints of 1 (not sure at all) to 7 (completely confident). A Cronbach's alpha of .85 was obtained in earlier studies. Our Cronbach's alpha was .92.

**Loneliness.** The Hebrew adaptation of the loneliness scale (Gierveld & Tilburg, 2006) consists of nine statements describing social and emotional loneliness. Items include: "I miss having a really close friend," and "I often feel rejected." The measure uses a 1 (no) to 3 (yes) scale. The Cronbach's alpha in the current study was  $\alpha = .82$ .

**Hope.** The hope scale assesses beliefs in one's ability to pursue desired goals and employ the strategies needed to achieve them (Snyder, 2002). The Hebrew adaptation (Lackaye & Margalit, 2006) of the Children's Hope Scale consists of six items to which youngsters responded on a 6-point Likert-type scale ranging from 1 (never) to 6 (all of the time). A sample item is: "I can think of many ways to get things in life." A higher score reflects a higher level of hope. In the current study, a Cronbach's alpha of .88 was obtained.

**Learning status.** We used the self-reports of the youngsters with regard to their average grades at the end of their first semester in history, mathematics and English as a second language. They were asked to report the levels (1-4) of their grades in three subjects: history, mathematics and English as a second language. The lowest level (1) refers to grades less than 55. Level 2 covers low to medium grades: 56-75. Level 3 is comprised of good grades: 76-89. Level 4 indicates very good grades: 90-100.

## Procedure

The Israeli Ministry of Education ethical office and the schools' directors gave their approval for the study, and parental consent was subsequently requested. Students who did not agree to participate or whose parents did not provide consent were not included in the study. Students completed the questionnaires as a group in their classrooms at the midpoint of the academic year.

## Data Analysis

Analyses in this study were conducted using IBM SPSS 24 for Windows. The preliminary analysis consisted of Pearson correlations in order to examine associations among the research measures and a MANOVA to explore the differences among the groups of students. Hierarchical regressions were performed to investigate the predictors of the students' PA. For the serial multiple mediator analysis, we used SPSS macro PROCESS (model 6), applying four mediators. As recommended by Hayes, the regression/path coefficients are

all in unstandardized form.

Before turning to the results, it is important to add a word of caution about the language that we used in reporting the findings of our study. The results are explicated in terms of associations rather than effects, due to the correlation nature of the data. However, an important feature of mediation analysis is that it allows for a distinction among direct, indirect, and total effects. Thus, in discussing the mediation results, we have chosen to use the word "effect," but its use does not imply that causality has been established.

## Results

### Preliminary Analyses

First, in order to explore the associations among the research measures, we performed Pearson correlations. Inter-correlations among the measures are presented in Table 2. In order to compare the attitudes towards test accommodations, ASE, loneliness, hope and PA among the three groups of students, we conducted a two-way MANOVA with LD/TD groups and gender as the independent variables. The MANOVA yielded a main effect for the LD groups ( $F(5, 427) = 21.13, p = .00$ , partial  $\eta^2 = .198$ ), but not for gender or interactions. Means, standard deviations and F scores of the univariate analysis are presented in Table 1. As expected, attitudes, ASE, hope, and PA differed among the two groups of students. When compared to their TD peers, students who were granted test accommodations reported more positive attitudes towards accommodations and lower levels of ASE, hope and PA. The two groups did not differ in their levels of loneliness.

Table 2. Correlations among ASE, Loneliness, Hope, Positive affect and Attitudes towards Accommodations

	1	2	3	4	5
1.ASE <sup>1</sup>	—				
2.Loneliness	-.31**	—			
3.Hope	.58**	-.34**	—		
4.Positive affect	.51**	-.27**	.53**	—	
5.Attitudes	-.11*	.04	-.09*	.01	—

\* $p < .01$ ; \*\* $p < .01$  (2-tailed) (N=475)

Note: <sup>1</sup>ASE – Academic Self-Efficacy;

### Predictors of Students' Wellbeing

In order to determine whether the LD status, attitudes towards accommodations and personal resources predict PA as an indicator of wellbeing, we performed a multiple hierarchical regression with PA as the criterion variable (see Table 3).



Table 3. Hierarchical Multiple Regression Analysis to Predict Positive Affect

	Variable	B	SE	$\beta$
Step 1, $R^2 = .03$	Gender	- 0.114	0.077	-.070
	LD <sup>1</sup>	-0.227	0.080	-.134**
	Age	-0.096	0.048	-0.095*
Step 2, $R^2 = .32$	Gender	-0.081	0.065	-.050
	LD <sup>1</sup>	0.156	0.075	.092*
	Age	-0.115	0.040	-.115**
	Attitudes <sup>2</sup>	0.100	0.044	.101*
	ASE <sup>3</sup>	0.294	0.026	.478**
	Loneliness	-0.245	0.073	-.139**
Step 3, $R^2 = .38$	Gender	-0.026	0.063	-.016
	LD <sup>1</sup>	- 0.099	0.072	-.058
	Age	-0.101	0.039	-.101**
	Attitudes <sup>2</sup>	0.093	0.042	.094*
	ASE <sup>3</sup>	0.200	0.029	.325**
	Loneliness	-0.145	0.072	-.082*
	Hope	0.267	0.042	0.308**

Note: \* $p < .05$ ; \*\* $p < .01$

<sup>1</sup>LD –learning disabilities;

<sup>2</sup>Attitudes – Attitudes towards accommodations

<sup>3</sup>ASE- Academic Self- efficacy

In step one, we entered gender, age, LD status into the model as control variables, explaining 3.4% of the variance. In this stage, gender was not significant. Age and LD predicted PA.

In step two, we added attitudes towards accommodations, ASE and loneliness as predicting variables, reaching an explanation of 31.8% of the variance. At this step the group belonging, age, attitudes, and loneliness predicted the level of PA. Although belonging to the LD group predicted lower PA, positive attitudes towards test accommodations, higher ASE and lower levels of loneliness predicted higher levels of PA.

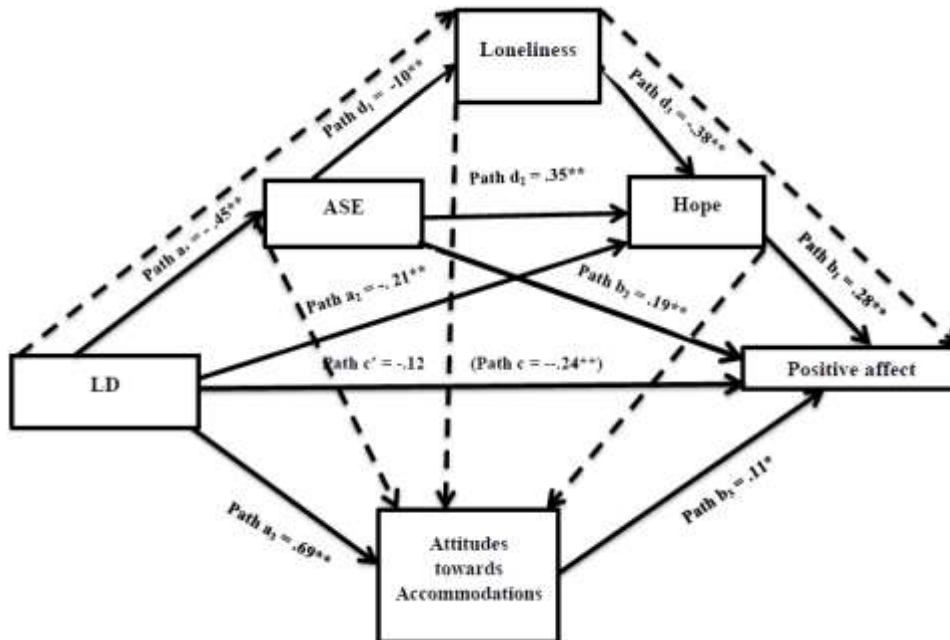
In step 3 we added the hope score as a predicting variable, and we reached 37.6% of the variance. At this step, age, attitudes, and loneliness continued to predict the level of PA together with the hope scores. However, the belonging to the LD group lost its significance.

### Serial Multiple Mediation

In order to further explore the relations between the predicting variables and to identify the significant mediating paths in the model, we used a serial multiple mediator (model 6 in PROCESS). We used PROCESS (Hayes, 2013) to analyze the indirect effects in serial mediation models. To determine the relationship between receiving test accommodations and PA, while considering the following variables: attitudes towards test accommodations, ASE, loneliness and hope, we followed Hayes' (2013) recommendations and used the regression-based approach with bootstrap method. In this approach, non-standardized beta coefficients are calculated in order to reduce Type 1 errors. However, through the bootstrap

method used for examining indirect effects, values obtained upon re-sampling and problems that might be due to distribution can be controlled. Figure 1 illustrates the findings.

Figure 1. Serial Multiple Mediation Model for Accommodations and Positive Affect



Note. \* $p < .05$ , \*\* $p < .01$

$R^2 = .37$  MSE = .43  $F(5,429) = 49.58$   $p = .00$

As the figure demonstrates, initially, the total effect of belonging to the LD group on PA was at a significant level ( $c = -.24$ ,  $SE = .08$ ,  $t = -3.01$ ,  $p < .00$ ). In addition, the direct effects of belonging to the LD group on attitudes towards accommodations ( $B = .69$ ,  $SE = .08$ ,  $t = 8.87$ ,  $p = .00$ ), on ASE ( $B = -.45$ ,  $SE = .13$ ,  $t = -3.45$ ,  $p < .01$ ), and on hope ( $B = -.21$ ,  $SE = .08$ ,  $t = -2.75$ ,  $p < .01$ ) were at significant levels. The direct effect of the attitudes as the first mediating variable on PA was at a significant level ( $B = .11$ ,  $SE = .04$ ,  $t = 2.54$ ,  $p < .05$ ). The direct effects of ASE as the second mediating variable on loneliness ( $B = -.10$ ,  $SE = .02$ ,  $t = -6.23$ ,  $p < .00$ ), on hope ( $B = .35$ ,  $SE = .03$ ,  $t = 12.29$ ,  $p < .00$ ) and on PA ( $B = .19$ ,  $SE = .03$ ,  $t = 6.66$ ,  $p < .00$ ) were also at significant levels (Step 2).

The direct effect of loneliness as the third mediating variable on hope ( $B = -.38$ ,  $SE = .08$ ,  $t = -4.66$ ,  $p < .00$ ) was significant, but not on PA ( $B = -.14$ ,  $SE = .07$ ,  $t = -1.95$ ,  $p = .052$ ) (Step 3). The direct effect of hope as the fourth mediating variable on PA ( $B = .28$ ,  $SE = .04$ ,  $t = 6.57$ ,  $p < .00$ ) was also at a significant level (Step 4). The remaining paths were not significant.

A review of the direct paths of the mediating variables on PA showed that the effects of attitudes towards test accommodations, ASE and hope were at significant levels. Given that we entered LD and the four mediating variables simultaneously into the equation, the relations between group belonging and PA became non-significant (Path C,  $B = -.12$ ,  $SE = .07$ ,  $t = -1.66$ ,  $p = .10$ ). Based on

these results, we concluded that personal resources such as ASE, loneliness and hope as well as positive attitudes towards receiving test accommodations fully mediated the negative relations between belonging to the group with LD and PA. The model similarly presented the indirect paths of loneliness with LD (through ASE) and with PA (through hope). Thus, the model also emphasized the central role of hope as a factor that mediated the relations between ASE and PA as well as between loneliness and PA. The model overall was significant ( $F(5, 429) = 4958, p < .001$ ) and explained 36.6% of the total variance. In addition, the paths between attitudes and personal resources were not significant.

## Discussion

The goals of the study were to identify the mediating role of academic self-efficacy, attitudes towards test accommodations, loneliness and hope in predicting PA of students with LD. The results confirmed that these factors mediated the relations between students with LD and PA as will be further explained.

First, as a preliminary examination, the comparisons between the students with LD and their TD peers revealed that they have more positive attitudes towards test accommodations, considering them as an important help, and also as their legitimate right, one that allows them access to learning, tests and success regardless of their disability. This finding emphasizes the important and valid role that students with LD attributed to the test accommodations.

It should be noted that the self-reported academic achievements in the three major subjects among students with LD achievement was lower than that of their TD peers, although they performed their tests using test accommodations. Thus, regardless this mean of academic accessibility, they continue to consider themselves less academically competent reporting not only lower academic achievements, but also lower ASE. In addition, they were less hopeful and experienced less PA. Interestingly, the expectation that they would also feel more alienated and lonely due to the possible stigma emerging from the use of test accommodations and/or their LD diagnosis was not confirmed, suggesting their distinction between the academic and social domains.

In order to further identify the factors that predicted PA, we performed a multiple hierarchical regression. First we controlled the demographic details. The results demonstrated that attitudes related to the importance of test accommodations in addition to their self-competence with regard to school work and social relatedness evident in one's degree of loneliness predicted PA. When hope was entered into the analysis, the significant predicting role of the LD belonging was lost, focusing attention at the importance of hopeful thinking.

We conducted further examinations in order to clarify the interrelations between the mediating variables, based on clinical observations and a psycho-educational theoretical approach. We used a serial multiple mediation to identify the different indirect paths that predicted PA. The results confirmed that PA was mediated by the positive attitudes towards test accommodations such as confirming individuals with LD that they provide meaningful help with academic

challenges and at the same time they are their legal rights that promote accessibility and ensures equal opportunities to academic success.

In addition, PA was also mediated by ASE and hopeful thinking. Therefore, these results demonstrate that PA can be predicted and mediated by different personal resources (in addition to the attitudes). The results also emphasized the key role of hopeful thinking among these personal strengths. Surprisingly, interpersonal alienation (loneliness) predicted lower levels of PA only indirectly through lower levels of hope. Hope also mediated the ASE that predicted higher levels of PA not only directly, but also indirectly through enhanced hope. It seems that hopeful thinking extended the predictive value of the remaining personal resources.

### **Implications, Limitations and Directions for Future Studies**

The study offers unique preliminary findings, focusing attention on the factors that predict PA for students with and without LD. Their attitudes regarding the accommodations and their personal resources mediated the relations. Accommodations may be considered as a positive supporting and helping strategy for students with academic challenges. They are also a disability right to provide accessibility that may enable students to cope with their school demands. Without discounting its importance, they may also be considered as social confirmation of one's disability status, emphasizing distressing academic experiences both past and present, accentuating the stigma of disability embedded in school related frustrations. The results of this study reported that students with LD, whose levels of difficulties entitled them to test accommodations, experienced lower levels of PA, ASE and hope than their TD peers. Yet, they did not differ from their TP with regard to their social alienation, and the results confirmed that fears about being stigmatized for their learning difficulties and test accommodations were not substantiated.

The current study emphasized the importance of the students' attitudes towards the test accommodations, presenting it as a unique predictor of wellbeing, unrelated to personal characteristics. Future studies should focus on the implicit beliefs of students, their hopes and expectations from this provision, and their ability to benefit from it. School psychologists should be aware to the importance of the attitudes towards accommodations within classroom environment and a target for future clarification and enhancing their legitimation within the school context, targeting effective usages and accepting attitudes. In an earlier studies teachers clearly expressed their need and requests to learn more about learning disabilities and test accommodations (Levi et al, 2013), emphasizing the limited training in this area.

Special attention should be paid to the unique role of hope in the proposed model. Indeed, all four mediators played a significant role in the predicting paths, each one of them representing a distinct area of personal resources. However, in accordance with the hope theory (Ciarrochi, Parker, Kashdan, Heaven, & Barkus, 2015), we initially predicted lower levels of hope due to being categorized as educationally disabled and also as a result of the student's level of social

relatedness and academic lower competence. The consideration of hope allowed us to take a deeper look at the complexity of the relations between factors that predict students' PA. Our findings demonstrated the multifaceted nature of hope for predicting wellbeing. It was directly related with the learning disabilities, but also indirectly through ASE and loneliness. It seems that students with LD who was able to develop high hopeful approach, as a personal characteristics and also through feeling of social connectedness to their peers (and lower loneliness) as well as through enhanced ASE will experience better PA. Longitudinal studies are needed in order to further clarify the emotional aspects of the test accommodations and their impact on academic achievements, as well as on emotional wellbeing. Future research that explores the use of empowering hope interventions (Feldman, Davidson, & Margalit, 2015) in relation to effective usages of test accommodations may also facilitate their coping with learning challenges.

Several limitations of this study call for further research. The correlational nature of this study precludes the assumption of causal relationships. The present findings were gathered at one point in time and did not indicate causality. To validate and generalize these results, future studies must examine the longevity of these relations over time and use a mixed design approach by including qualitative methods such as interviews to examine the youngsters' self reports in-depth.

In addition, as described in the method section, the Israeli confidentiality directives precluded our direct access to the students' individual diagnoses and academic achievements. Therefore, we could confirm the validity of the participants' classification as students with LD belonging only through self-reports and their counselors' information. In addition, we focused exclusively on the adolescents' self-perceptions, targeting their subjective experiences related to learning disabilities. Additional information from teachers and parents might further clarify our proposed model.

Third, conceptual matters merit a word of caution regarding the proposed personal resources. Considering that various components might mediate the relations between test accommodations and PA, additional resources and ecological conditions such as classroom climate, teachers' attitudes towards test accommodations and their hopeful expectations about the abilities of these students to succeed should be considered in future studies (Levi, Einav, Raskind, Ziv, & Margalit, 2013). Tapping into the multifaceted and complex relations between disabilities, affect, perceptions and actual achievements may help policy makers, teachers and students alike approach their capabilities and challenges in a more efficient way.

## **Conclusions**

This study offers unique, though preliminary, findings about the wellbeing of students with LD, focusing attention on their attitudes towards receiving test accommodations, as well as their positive affect and personal resources. It provides a deeper look at the complexity of the relations between attitudes, cognitions and emotional factors. Regardless the valid contribution of the test

accommodations to students' success, the lower academic achievements and the personal perceptions, school psychologists and educational counselor should alerted to the students' comprehensive emotional needs. The study showed that the accommodations provide only a partial solution to ongoing struggles with clear psychological implications. There is a need for inclusive intervention planning to promote the hopeful thinking among students and teachers and to train them to use strategies that will support their ASE, in order to foster their future wellbeing.

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