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**Articles**

**The predicting role of school Learned helplessness in internalizing and externalizing problems. An exploratory study in students with Specific Learning Disorder**

*Luana Sorrenti<sup>1\*</sup>, Laura Spadaro<sup>1</sup>, Antonina Viviana Mafodda<sup>1</sup>,  
Giuseppina Scopelliti<sup>1</sup>, Susanna Orecchio<sup>1</sup>, Pina Filippello<sup>1</sup>*

**Abstract**

Research has shown a link between specific learning disorders (SLD) and both internalizing (e.g., anxiety and depression) and externalizing problems (e.g., anger and aggressive behavior). However, the predictive factors of these behaviors have not been examined in significant depth. The main purpose of the present study is, therefore, to investigate the possible presence of learned helplessness as the main predictor of the development of internalizing/externalizing problems in students. The present study also aims to verify whether there are differences between pre-adolescent students with and without SLD in terms of learned helplessness in school and the development of internalizing/externalizing problems. The sample consisted of 84 students, with an average age of 12.9 years (SD= 1.42). A total of 52 males (62 %) and 32 females (38 %) were divided into two groups, based on the presence of SLD (44 students with SLD and 40 without). The results showed that students with SLD demonstrated higher levels of internalizing problems. Further, although learned helplessness in a student was not a predictor of externalizing problems in the group without SLD, it was predictive of internalizing and externalizing problems in the group with it. The study's results, directions for future research, and implications for the psychological wellbeing of students are also discussed.

<sup>1</sup> Department of Clinical and Experimental Medicine, University of Messina, Italy

E-mail corresponding author: [sorrenti@unime.it](mailto:sorrenti@unime.it)



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**1. Introduction**

Specific learning disorder – *SLD* (DSM-5; American Psychiatric Association, 2013) is a disability related to basic psychological processes such as listening, thinking, reading, speaking, writing, calculating, and spelling. Although these disabilities may occur in people identified as gifted, they typically occur in individuals of normal intelligence (Maughan & Carroll, 2006).

Several empirical studies have suggested that SLD is frequently associated with social-emotional and behavioral problems and can cause intense emotional suffering, particularly during the first years of schooling when children realize that their own scholastic performance does not

conform to that of their peers (Ryan, 2006). This situation can cause future psychological discomfort as well (Mugnaini, Lassi, La Malfa, & Albertini, 2009). For example, the presence of dyslexia increases the possibility of psychological distress because it frequently creates disadvantageous and stressful educational and relational experiences for those who suffer from it; if the condition is not adequately treated, it can evolve over time, potentially resulting in forms of psycho-social maladjustment (Ryan, 2006).

In a research by Luci and Ruggerini (2010), the authors review data on comorbidity, highlighting that past research has correlated certain pathological profiles with SLD; in fact, in 15 to 25% of the cases, there is externalizing symptomatology. Other researchers (Lorusso et al., 2014; Mammarella et al., 2016; Mogentale & Chiesa, 2009; Willcutt & Pennington, 2000) have shown comorbidity between SLD and conduct disorder.

Walker and Nabuzoka (2007) examined the academic achievement and social functioning of children with and without SLD. This study found that academic achievement is related to social functioning. The children with high academic achievement scored higher in positive sociometric status than the children with SLD did, while the children with SLD scored higher in negative behaviors, independent to their academic performance.

Agaliotis and Kalyva (2008) reported that many children with SLD show difficulties with social skills, such as in their interpersonal understanding, misconduct in the classroom, and inability to cooperate and establish positive relationships with peers. Numerous students with SLD show poor social skills and various relational problems (e.g., aggressive behavior and high levels of anger) (Leichtentritt & Shechtman, 2010). This may be one reason why they typically have a low social status (Filippello, Buzzai, Messina, Mafodda, & Sorrenti, 2019; Noushabadi et al., 2015).

Conversely, others studies (Halonen, Aunola, & Ahonen, 2006; Klassen, Tze, & Hannok, 2013) have shown that early reading and writing difficulties are a risk factor for the development of both internalizing problems in the early years of schooling and for externalizing problems in the following years. This suggests that SLD and the problematic behaviors mentioned above are evolutionarily connected and have a cumulative effect on development, thus demonstrating that they persist in various evolutionary phases. This finding appears to be confirmed by other studies conducted on adolescents and adults with SLD. In particular, when compared with normative samples of their peers, it was found that adolescents with SLD scored significantly higher in the categories of total problems and of externalizing and internalizing problems (McConaughy, 1986).

In addition to externalizing problems, the literature highlights the comorbidity between SLD and internalizing problems. Adolescents with SLD have greater difficulty than do their peers in regulating their emotions during school tests.

In addition, they perceive themselves to be less able to cope with the tasks assigned to them and they have a strong need to be accepted by their parents and teachers (Tarabia & Abu-Rabia, 2016). Other research shows that adolescents with dyslexia have low academic and social self-efficacy, low mood, and a loss of hope and motivation when faced with scholastic tasks (Ghisi, Bottesi, Re, Cerea, & Mammarella, 2016).

Dealing with numerous school failures can leave students frustrated, generating negative expectations about their results and a consequent negative impact on their subsequent efforts. Low academic performance at school affects the self-image of students with SLD, especially when they compare themselves with their peers who are without them; they perceive their own skills to be insufficient for coping with academic tasks and they feel that their situation will not improve (Tarabia & Abu-Rabia, 2016). These beliefs can intensify feelings of defeat and frustration (Filippello, Harrington, Buzzai, Sorrenti, & Costa, 2014; Sorrenti, Filippello, Buzzai, & Costa, 2015b), which can create the conditions for the development of learned helplessness (Panicker & Chelliah, 2016).

Learned helplessness is characterized by passive behavior, which is one of the risk factors for developing serious emotional disorders such as depression (Abramson, Seligman, & Teasdale, 1978; Abramson, Metalsky, & Alloy, 1989; Seligman & Maier, 1967). Unquestionably, helpless students have a lack of confidence in their own abilities or intelligence. These students believe that they cannot control events; they are convinced that success is unlikely and that failure is likely (i.e., a “pessimistic explanatory style” – Abramson et al., 1978; Abramson et al., 1989; Alloy, Kelly, Mineka, & Clements, 1990).

In their meta-analysis, Maag and Reid (2006) confirmed that students with SLD have significantly higher levels of depression than do students without them. However, due to the heterogeneity of the studies and the instruments used to measure depression, these same researchers believe that this data should be interpreted with caution. Because a low self-concept is also a diagnostic criterion for depression and is frequently associated with SLD, they argue that it would be more appropriate to analyze the variables that represent a risk factor for the development of depression (Maag & Reid, 2006).

Nonetheless, none of the studies in the literature investigate the relationship between SLD and other psychological problems that may derive from a low self-concept and low perception of scholastic competence, such as learned helplessness in school students.

## 1.1 The present study

In considering the lack of studies on the analysis of the predictive factors of these disorders (Maag & Reid, 2006), the present study aims to investigate the possible presence of learned helplessness as the main predictor of the development of internalizing or externalizing problems in school students. This is additionally based on the empirical evidence regarding the comorbidity of SLD and internalizing (Tarabia & Abu-Rabia, 2016; Ghisi et al., 2016; Maag & Reid, 2006) and externalizing problems (Luci & Ruggerini, 2010; Lorusso et al., 2014; Mammarella et al., 2016; Mogentale & Chiesa, 2009; Willcutt & Pennington, 2000; Walker & Nabuzoka, 2007; Agaliotis & Kalyva, 2008; Leichtentritt & Shechtman, 2010) in different evolutionary phases (Halonen et al., 2006; Klassen et al., 2013; McConaughy, 1986), and considering the lack of studies on the analysis of the predictive factors of these disorders (Maag & Reid, 2006). Considering that SLD and the problematic behaviors mentioned above have a cumulative effect on development, which is shown to persist in various evolutionary phases (Halonen et al., 2006), identifying the presence of learned helplessness in pre-adolescent students and the possible repercussions it may have on the development of behavioral problems could prevent an initial risk condition from turning into psychopathology.

In considering the discordant results of the research outlined above regarding the period of occurrence of internalizing and externalizing problems, we aimed to conduct an exploratory study to verify whether there are differences between pre-adolescent students with and without SLD, in terms of internalizing or externalizing problems and learned helplessness in school. In addition, we aimed to verify the role of learned helplessness among school students in predicting internalizing or externalizing problems.

## 2. Method

### 2.1 Participants

The sample consisted of 84 students, with an average age of 12.9 (SD= 1.42), attending school in the city of Messina, Italy. There were 52 males (62 %) and 32 females (38 %), divided into a group of 44 students with SLD (52.4 %), with prevalent dyslexia and dysorthography, and a group of 40 students without SLD (47.6 %).

Participants ranged from those attending first grade to those attending upper secondary school. The SLD students were recruited from three different rehabilitation centers operating in the Messina city area. These centers provided diagnoses for all of the participants, following the standard DSM-5 criteria (American Psychiatric Association, 2013).

All of the students in the sample were of Italian nationality, spoke Italian, and were from two-parent families. Regarding socioeconomic status (SES): 83% of the families were of medium socioeconomic status (both parents were educated to the secondary level or at least one parent to the university level), 6.7% of the families were of low socio-economic status (both parents were educated to the primary level or at least one to the secondary level), and 10.3% were of high socioeconomic status (both parents were educated to the university level). The SES was based on the education of the father and the mother, merging the maternal and paternal educational level into a single SES category (Sirin, 2005).

## 2.2 Measures

The MT reading test (Cornoldi & Colpo, 2012) test and the battery for evaluating writing and orthographic skills in the primary school (Tressoldi & Cornoldi, 2000) were administered to ensure that the SLD group met the above criteria. The MT sub-test (Cornoldi & Colpo, 2012) involved reading a text chosen to be consistent with each child's level of education. Scores were assigned on the basis of the specific errors that the child made while reading aloud.

A score of 1 was assigned to each error in reading a syllable, a syllable omission, a word or row omission, a syllable or word intrusion, repetition of the same row, and more than a 5-second pause; a score of 0.5 was assigned to an emphasis shift or hesitation.

The battery for the evaluation of writing and orthographic skills (Tressoldi & Cornoldi, 2000) evaluated the phonological processes involved in the writing abilities, using two different dictation tasks (sentences and a text with homophones). The tests were consistent with each child's level of education. The task measured the number of phonological and non-phonological errors. A score of 1 was assigned to each error.

These instruments showed good psychometric characteristics (Cornoldi & Colpo, 2012; Tressoldi & Cornoldi, 2000) and have been used in several studies in an Italian context (Cecilia, Vittorini, & Di Orio, 2015; Filippello & Spadaro, 2014; Filippello, Spadaro, Sorrenti, Mafodda, & Drammis, 2016; Filippello et al., 2016; Filippello, Tassone, Spadaro, & Sorrenti, 2016; Padovani, 2006; Filippello et al., *in press*). The SLD group was composed of children with a result lower than the two standard deviations in the reading/writing test.

The students were administered the Youth Self Report (YSR - Achenbach, 1991b) to evaluate the presence of internalizing and externalizing problems. This instrument is composed of 119 items, one of which is open-ended; the classification of behavior and syndrome scales was the same as those used in the Child Behavior Checklist (CBCL; Achenbach, 1991a). The CBCL was administered to the parents to evaluate the behavioral problems of their children, according to

two behavior types: internalizing (*withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, and attention problems*) and externalizing (*delinquent and aggressive behavior*). A composite score, called *total problems*, was then tallied based on the sum of all eight of the syndrome scales.

The CBCL instrument is composed of 118 problem items and two open-ended items. Each item was rated on a scale from 0 to 2 (0 = not true, 1 = somewhat or sometimes true, and 2 = very true or often true). This instrument showed good psychometric characteristics and it has been used in several studies in an Italian context as well (Maltese et al., 2017; Miragoli, Milani, Camisasca, & Di Blasio, 2016; Camisasca, 2009).

The CBCL was administered to the parents to confirm the reliability of the answers provided by the students through the YSR (internalizing behavior:  $r=.69$ ,  $p<.001$ ; externalizing behavior:  $r=.46$ ;  $p<.001$ ).

The student's learned helplessness in school was measured using the subscale Learned Helplessness Scale of the Italian version of the instrument Learned Helplessness Questionnaire (LHQ; Sorrenti, Filippello, Buzzai, & Costa, 2015), which consists of six items measuring learned helplessness of students at school (e.g., "When you fail one part of a task, you look discouraged – you are certain to fail at the entire task").

The student indicated on a five-point Likert scale (from 1 = "not true," to 5 = "absolutely true") how much he or she agreed with the statements. The reliability and validity of the LHQ have been demonstrated in previous research (Filippello, Harrington, Costa, Buzzai, & Sorrenti, 2018; Filippello et al., 2017; Filippello, Buzzai, Costa, Orecchio, & Sorrenti, *in press*; Filippello, Sorrenti, Buzzai, & Costa, 2015a; Sorrenti, Filippello, Buzzai, Buttò, & Costa, 2018; Sorrenti, Filippello, Costa, & Buzzai, 2014; Sorrenti, Filippello, Orecchio, & Buzzai, 2016).

### 2.3 Procedure

This study was performed in accordance with the ethical standards of the Declaration of Helsinki, as revised in 2013. Only participants whose parents provided informed consent took part in the study. The study participants were tested during school hours, during two separate individual sessions in their classrooms. During the first session, the SLD students were presented with assessment tests (i.e., the MT reading test and the battery for the evaluation of writing and orthographic skills). During the second session, the participants were administered the questionnaire packet (the YSR and the LHQ). The study procedures were explained to the students and any questions they had were answered. The instructions stated that the questionnaires were voluntary and that the responses were confidential. A matching procedure was implemented to avoid any influence due to the order of the presentation of the instruments.

## 2.4 Data analyses

The Statistical Package for the Social Sciences (SPSS 17) was used to conduct descriptive statistics, ANOVA and MANOVA to evaluate the group differences, and linear regression to evaluate the predictive role of school LH.

## 3. Results

### 3.1 Descriptive analyses

Table 1 shows the Cronbach's alpha, means, standard deviation, skewness, and kurtosis values for all variables under investigation for the total sample, SLD and without SLD students. The descriptive analysis showed that all scales have good scores of symmetry and kurtosis (Table 1). The internal reliability of all the instruments ranged from .75 to .85.

**Table 1.** Mean, Standard Deviation, Skewness, Kurtosis, Cronbach's alpha for total sample and for SLD group (N=44) and without SLD group (N=40).

	Total Sample					SLD		Without SLD	
	M	SD	Skew	Kurt	$\alpha$	M	SD	M	SD
<b>Internalizing</b>	13.35	9.73	1.07	.83	.85	17.34	10.72	8.95	6.07
<b>Externalizing</b>	10.79	7.59	1.37	2.18	.87	11.66	7.85	9.82	7.26
<b>School LH</b>	14.98	5.79	.35	-.90	.75	17.05	5.93	12.7	4.75

### 3.2 Group differences

To investigate group differences a ANOVA and MANOVA were conducted.

A MANOVA was conducted with the internalizing and externalizing problems as the dependent variables and the two participant groups (students with SLD and students without SLD) as the independent variables. There was a significant multivariate main effect of group [(Wilks'Lambda=.77;  $F(2;81)=11.85$ ,  $p<.001$ ,  $\eta^2p=.23$ )] with a significant univariate effect for internalizing problems,  $F(1;82)=18.97$ ;  $p<.001$ ;  $\eta^2p=.19$ , while there was not a significant univariate effect for externalizing problems,  $F(1;82)=1.23$ ;  $p>.05$ ;  $\eta^2p=.01$ .

An ANOVA was computed with the school LH as the dependent variables and the two participant groups (students with SLD and students without SLD) as the independent variables. There was a with a significant univariate group effect for school LH,  $F(1;82)=13.58$ ;  $p<.001$ ;  $\eta^2p=.14$ .

### 3.4 Regression analysis

A series of linear regression analyses were conducted separately to assess the contribution of school LH in predicting internalizing and externalizing problems (Table 3). Two group (group with SLD = 1; group without SLD = 2) and LH was entered as independent variables, while internalizing and externalizing problems was entered as dependent variables.

Internalizing problems were significant,  $F_{(2,81)}=16.89$ ;  $p<.001$ ,  $R^2_{adj}=.28$ , explained 29% of the variance, with school LH ( $\beta =.35$ ,  $t =3.50$ ,  $p<.01$ ) being a significant positive predictor of internalizing problems and group without SLD ( $\beta =-.30$ ,  $t =-2.98$ ,  $p<.01$ ) being a significant negative predictor of internalizing problems.

Externalizing problems were significant,  $F_{(2,81)}=5.61$ ;  $p<.01$ ,  $R^2_{adj}=.10$ , explained 12% of the variance, with school LH ( $\beta =.35$ ,  $t =3.14$ ,  $p<.01$ ) being a significant positive predictor of externalizing problems, while group was not significant.

**Table 2.** Regression analysis

	<i>Internalizing problems</i>			<i>Externalizing problems</i>		
	$R^2_{adj}$	t	$\beta$	$R^2_{adj}$	t	$\beta$
	.28***			.10**		
School LH		3.50	.35**		3.14	.35**
Group		-2.98	-.30**		.10	.01

\*\*\* $p<.001$ , \*\* $p<.01$ , \* $p<.05$ .

### 4. Discussion

The purpose of this study was to investigate the presence of any differences related to internalizing and externalizing problems and learned helplessness in school students, both with and without SLD. The study's results showed that, in a school setting, students with SLD demonstrated higher levels of internalizing problems and learned helplessness than the students without SLD. This finding is supported by the literature that suggested that SLD is frequently associated with social-emotional problems and intense emotional suffering that can cause future psychological discomfort and psycho-social maladjustment (Mugnaini et al., 2009; Ryan, 2006). Undoubtedly, if students with SLD have low academic and social self-efficacy, low mood, negative expectations about their results, and loss of hope and motivation when faced with scholastic tasks (Ghisi et al., 2016), encountering failure can intensify their feelings of defeat and



frustration, causing the subsequent development of learned helplessness. The results of the study showed that the two groups of students (with and without SLD) had the same level of externalizing problems. This result seems to confirm the studies of Klassen and colleagues (2013) and Halonen et al. (2006), which posit that internalizing problems develop earlier than externalizing problems, which appear in the later years of schooling, suggesting that the behavioral problems related to SLD have a cumulative effect on development.

In terms of the second aim of this study—to investigate whether learned helplessness in school is predictive of internalizing or externalizing problems—the results showed that it is indeed predictive of internalizing and externalizing problems in the group with SLD. This result can be explained by referring to studies that show that students with SLD perceive themselves as less able to cope with the tasks assigned to them, especially when compared with their peers without SLD (Tarabia & Abu-Rabia, 2016). After experiencing several failures, they may feel frustrated, exhibiting helpless behaviors or high levels of anger (Leichtentritt & Shechtman, 2010), difficulties in socializing, and an inability to cooperate and establish positive relationships with their peers (Agalotis & Kalyva, 2008). Walker and Nabuzoka (2007) demonstrated that academic achievement and the social functioning of children with SLD are closely related: Children with SLD scored higher in negative behaviors than children with high academic achievement and without SLD. Therefore, in line with the literature, the results of this study have educational implications. First, rather than focusing training exclusively around improving the students' reading, writing, and mathematical skills, they emphasize the importance of structuring appropriate psycho-educational interventions at school for students with SLD. Consequently, it is important to pay attention to the different emotional and motivational aspects of students with a diagnosis of SLD (e.g., self-efficacy and dysfunctional beliefs). Finally, given the externalizing problems that these students show, it is necessary to structure appropriate training to improve their social skills.

## **5. Limitations and Directions for Future Research**

Several limitations of the current study need to be acknowledged. First, the learned helplessness was not observed directly in the school. As a result, it is uncertain whether the ratings reflect the actual behavior. Second, the correlational nature of the study is insufficient to provide strong evidence of a casual relation between the variables. For this reason, it would be useful for future studies to test these relationships in longitudinal or experimental designs. In addition, the small sample studied, which was due to the difficulty of recruiting a clinical group, does not allow us to generalize our results.

Further research is essential, as understanding the factors that promote successful psycho-social adjustment is essential to the development of effective prevention and intervention strategies. For this reason, the 2010 Consensus Conference recommends conducting studies to better investigate these links and attempt to understand the scholastic and working prognosis of individuals with SLD (Lorusso et al., 2014).

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