

## TEACHER-PARENTS EXPECTATIONS IN LEARNING DISABILITIES

### **Abstract**

Research has suggested that the relationship between previous academic achievement and student variables is mediated by parent and teacher expectations of the child's ability and future success. The goal of this study was to analyze the mediating role of teachers' expectations and teacher's perceptions of parents' expectations between previous academic achievement and variables in students with Specific Learning Disorders (SLD) that are significant for school learning. The participants were 230 students with SLD from Spain aged between 10 and 14 years old. Extrinsic variables influenced the students' intrinsic variables even more than the students' own experiences of academic success or failure. The way in which teachers in the child's academic life respond to prior results and the expectations they form can affect their instruction, and ultimately the children's motivation, involvement and persistence in learning.

*Keywords:* Peer Relationships, Learning Disabilities, Identification, Parenting, Quantitative Methods

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### **Prior Academic Achievement as a Predictor of Non-cognitive Variables and Teacher and Parent Expectations in Students with Learning Disabilities**

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], 2013) uses the term SLD, which includes difficulties with writing, reading, mathematics, and other academic skills. According to the DSM-5, SLD can vary in severity (mild, moderate, and severe) and need different resources and services. These disorders are considered intrinsic to the individual, are assumed to be due to a dysfunction of the central nervous system and may occur at any time in a person's life. Extrinsic factors in a person's surroundings, and the presence of other co-morbid conditions significantly influence the diagnosis and progression of SLD (Moats, 2009). Although these students' learning difficulties can exhibit similar symptoms, some intrinsic (e.g., self-concept) and extrinsic variables (e.g., teacher's expectations) can result in large differences in the way students face their current and future challenges of having a learning disorder. Understanding these variables and how they relate to each other can help in the design of work plans and strategies focused on stimulating variables that help students approach those challenges.

Among the variables related to students' academic work, previous achievement has been shown to be one of the factors that best predicts perceived self-confidence and self-concept (Ferla et al., 2009), use of self-regulated learning strategies (Winne & Hadwind, 2008), learning results (Ausubel et al., 1978), and future achievement (Au et al., 2010). O'Shea et al. (2017) concluded that previous achievement was a better predictor of motivation and future achievement than having learning difficulties (at least in algebra). However, the results of some studies also suggest that these relationships are not direct because the relationship between previous achievement and student variables is mediated by parent and teacher expectations of the

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child's ability and future success (Pomerantz et al., 2007). In addition, Zhu et al. (2018) indicated that teacher expectations of children's abilities influenced future success. However, the research is not as extensive when it comes to students with SLD.

Although previous achievement may be a significant variable in academic success for those with SLD, research has moved from a reductionist, deficit-based model—focusing on the difficulties children have, or causes and outcomes in terms of maladjustment—towards the Risk and Resilience Model, which emphasizes the capacity of the person with SLD to adapt to and overcome difficulties (Margalit, 2003). As Bryan (2003) indicated, the Risk and Resilience Model becomes necessary from an inclusive perspective, especially when examining the role of factors such as family, school, and community, and their interactions with student variables, which may aggravate or alleviate the problems of students with SLD (Chapman et al., 2004).

This newer perspective highlights the roles of self-esteem, motivation, effort, and persistence as fundamental personal variables in the explanation for the success of of the learning strategies in some students with SLD (Meltzer, 2004). Nevertheless, there are also various other intrinsic and extrinsic factors that make these students more resistant to the limitations caused by their condition (Morrison & Cosden, 1997). Using comprehensive, multidimensional approaches such as the Risk and Resilience Model, researchers have focused on identifying the main predictors that could help students develop their potential to learn and to thrive in different life contexts, despite their difficulties (Damon, 2004). Research by Meltzer et al. (2004) highlighted significant consequences of improved knowledge about the complex interactions between intrinsic factors (e.g., self-concept, motivation, causal attributions, learning strategies) and extrinsic factors (e.g., teachers' perceptions and expectations), which lead some students to persist in the face of adversity and employ protective strategies that help them to minimize the

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effects of their learning difficulties.

Various factors have been identified from a comprehensive, multidimensional perspective (Meltzer et al., 2004) that significantly contribute to the behavior of students who are able to adapt to and overcome adverse conditions. These factors include students' awareness of their own skills and limitations, their level of self-concept, perceived competence, causal attributions and the level of perceived control over their own successes, teachers' expectations and attributions, and trust in the availability of social support (e.g., parents, peers, teachers). For example, the level of an SLD student's academic self-concept, in its interaction with teacher perceptions, seems to act as a risk or protective factor with respect to the student's academic progress, aggravating or ameliorating their learning difficulties (Rubie-Davies, 2010).

These findings have driven research in different areas about individual (social, motivational, emotional, and cognitive) differences in students with SLD (McGovern et al., 2016). Studies have found that differences are related to various intrinsic and extrinsic factors (Meltzer, 2004; Woodcock et al., 2018) and it would be useful to understand how they relate to each other and to academic achievement.

### **Intrinsic variables**

This study focuses on three intrinsic variables that are important in students' academic learning: students' academic self-concept, internal causal attributions, and motivation to learn. Many researchers have concluded that children and adolescents—both with and without SLD—often exhibit maladaptive attributional styles, low motivation, low expectations of success, little persistence in school tasks, and low self-esteem (Klassen et al., 2008; Núñez et al., 2005; Núñez et al., 2011; Sideridis, 2006; Sideridis & Scanlon, 2006). This in turn reduces motivation and generates negative feelings towards academic work itself (Kloomok & Cosden, 1994). This type

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of attributional trend has been termed a “maladaptive attributional pattern,” given the negative motivational consequences for these children (Núñez et al., 2005). These affective-motivational conditions (low self-esteem and demotivation) represent an added weakness to personal conditions that already make it difficult to deal with subsequent learning experiences (Ben-Naim et al., 2017), often leading to more academic failure. Some students have even generalized these beliefs to academic tasks and areas they had not previously had problems in (Shifrer, 2016).

With regard to internal causal attributions, Pasta et al. (2013) observed that when children with SLD achieved good results, they were more likely than students without SLD to attribute these achievements to external factors such as luck, rather than internal factors such as ability. Pasta et al. (2013) also saw how students with SLD were more dependent on their teachers and asked for help more often than students without SLD. In this vein, Núñez et al. (2005) found distinct attributional profiles for groups of students with SLD. One subgroup demonstrated a *helpless attributional profile*, characterized by the belief that their successes were principally due to external circumstances and owed little to their abilities or efforts, while their failures were due to a lack of ability or a lack of effort (internal causes). The other subgroup demonstrated an *adaptive attributional profile*, characterized by the belief that their success was mainly due to internal causes (effort and ability) rather than external causes, whereas failure was due to external variables and had little to do with a lack of ability or effort. The two groups (*helpless and adaptive attributional profiles*) exhibited different levels of involvement and persistence in the face of failure, as well as different levels of academic performance, which was better in the *adaptive attributional profile*. Similarly, the students with *adaptive attributional profiles* also demonstrated a more positive academic self-concept than those with *helpless profiles*.

With regards to academic self-concept, Möller et al. (2011) noted academic self-concept

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as an important moderator variable not only in terms of subsequent academic achievement, but also for students' engagement and long-term educational aspirations. In typical students, positive self-concept leads to better academic achievement and vice versa (Marsh & Craven, 2006). In students with SLD, Ju et al. (2013) found that prior academic self-concept and parental support predicted subsequent academic achievement, and similarly prior academic achievement predicted subsequent academic self-concept.

Finally, in relation to motivation to learn, students with SLD have exhibited less motivation to learn, although few studies have examined how prior academic achievement influences motivation in students with SLD (O' Shea et al., 2017). In fact, most studies have used samples of typical students. For instance, DiPerna et al. (2005) found that prior academic achievement and interpersonal skills were predictors of motivation. Garon-Carrier et al. (2016) also found a directional association from prior achievement to subsequent intrinsic motivation in elementary students (previous achievement predicted intrinsic motivation although intrinsic motivation did not predict achievement).

### **Extrinsic variables**

One of the most consistent findings from research using the *Risk and Protection Factor Model* is that family (Al-Yagon, 2011) and school contexts (Pitzer & Skinner, 2017) are essential components in encouraging a student's positive personal and academic adjustment. This suggests that if family and context have so much weight in the development of the children, these variables will also influence academic performance. Therefore, it is imperative to deeply examine all of the variables in those two contexts that might directly or indirectly affect the academic performance of students with SLD.

### **Family context variables**

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Many family-related variables have an impact on children's success at school, in particular family structure (intact/single parent families), socio-economic status, parental education level, parenting style, and parental involvement (Afolabi, 2014). One of the variables that significantly affects family support is parents' expectations about their children's academic futures (Doren et al., 2012). In fact, research by Lee and Bowen (2006) showed that these family expectations are one of the most important types of parental involvement affecting children's academic achievement in elementary school ( $\beta = 0.23$ ), and Chen and Gregory (2010) showed that parents' attainment expectation was the only type of involvement indicator that significantly predicted students' grade point average ( $\beta = .32$ ) in high school.

Parents' expectations are largely based on their perceptions of their children's previous and current performance. Furthermore, students' previous academic performance could be a less influential factor than parental expectations (Yamamoto & Holloway, 2010). These authors proposed three hypotheses to explain the strength of the relationship between performance and parental expectations. The first was the attribution of past results to the child's ability or effort. Parents who attribute achievement principally to ability (intelligence) expect the child's performance to be stable because ability tends to be viewed as stable, and parents believe that it is very difficult to change; for these parents past performance is likely to be seen as a reliable indicator of future performance. In contrast, parents who think that students' effort (a more controllable and unstable aspect) is the fundamental cause of achievement are more likely to think that future achievement may vary. The second was a lack of understanding of school feedback on the child's performance. If parents do not trust teachers, they may be less likely to see teacher evaluation as a legitimate reflection of their child's potential, thus weakening the relationship between past performance and parents' expectations about the future. However, in

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order for students' past performance to influence parents' expectations about the future, parents must rely on feedback from the school (teachers' assessments, test results, grades). The third hypothesis was perceived competence to help children succeed. Parents who believe they are capable of helping their child succeed at school are more likely to have high expectations about the child's academic achievement and vice versa.

All of these findings suggest that the family could play an important role in children's school performance as a protective factor, include students with SLD (Chen & Gregory, 2010). In summary, parents are clearly influential in both academic and nonacademic domains. In fact, Martin et al. (2007) showed that parental support has a strong effect on motivation, self-esteem, academic self-concept and engagement. In addition, they found that teachers also have an influence on these variables that is even greater than the influence of parents.

### **School context variables**

Many studies have looked at school variables that promote personal resilience or increase chances of failure. Important variables include student-teacher relationships, promotion of student self-esteem and self-determination, active teaching, development of social skills, and family involvement in schools (Meltzer, 2018; Meltzer et al., 2015; Murray & Wren, 2003). A recent study by Pitzer and Skinner (2017) comparing motivationally at-risk students and students with less risky profiles underscored the importance of teacher support, also they documented effects of teacher support affected student self-esteem and academic resilience, noting that.

Self-fulfilling prophecies or changes in children's behavior caused by teacher expectations about their abilities and skills, even when those expectations are incorrect, affect students' academic performance and their future life success (Stipek, 2010). Some of the associated differential behaviors have direct effects on learning and consequently widen the gap

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between high and low-performing students. Teachers also affect students' beliefs about their own abilities, their expectations of success, and consequently their effort and other achievement-related behaviors (Stipek, 2010). Positive respectful relationships with teachers often provide students with the sense of security that they need to actively participate in class, ask questions and seek challenges, which encourages learning (Center for Advanced Study of Teaching and Learning, 2011).

However, the type of teacher support may vary, depending on the student's profile (Vlachou et al., 2014). Kloomok and Cosden (1994) demonstrated that children with less vulnerable profiles usually get more support in this context (high levels of teacher and peer support) than those with more vulnerable profiles. The same happens with children with SLD, perhaps as a consequence of the lower expectations of success that teachers usually have for these students. A prejudiced attitude from teachers could negatively affect how students with SLD approach schoolwork and their academic achievement (Honstra et al., 2010). However, little is known about how those prejudiced attitudes in teachers could be defined by students' previous achievement.

### **Aim**

The goal of our study was to analyze the mediating role of teachers' expectations and teachers' perceptions of parental expectations in the relationship between previous achievement and student variables that are significant for school learning (i.e. causal attributions, self-concept, learning motivation) in students with SLD. We hypothesized that the previous achievement of students with SLD would be significantly associated with the teachers' expectations, and teachers' perceptions of parental expectations of students' adjustment and future performance, all of them in a model. This would in turn affect students' causal attribution, academic self-concept,

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and interest in learning. Finally, we were also interested in analyzing whether the model was invariant with respect to gender.

### **Method**

#### **Participants**

Two hundred and thirty students with SLD participated in this study (63.9% boys and 36.1% girls), aged between 10 and 14 years old ( $M = 12.14$ ,  $SD = 1.392$ ). Table 1 gives the participants' demographic, diagnostic and cognitive characteristics by gender. Almost all of the students attended public schools in two Northern regions of Spain.

The students in the sample had had a diagnosis of LD for varying lengths of time when they participated in the study (Table 1): from 0 to 12 months (20.7%), 12-24 months (32.6%), 24-36 months (7.6%), 36-48 months (10.9%), 48-60 months (23.9%), and for more than 60 months (4.3%). For the parents of SLD children, socioeconomic status (SES) was compared through level of education (33.8% of parents had basic, 51.3% secondary and 14.9% further education/university qualifications) and household income: 14.3% of the families had low incomes (around 450 Euros per month), 40.8% minimum (between 450 and 750), 36.7% medium (around 1200 Euros), 4.1% high (around 2000), and 4.1% very high (more than 2000 Euros).

[Insert Table 1 about here]

#### **Procedure and inclusion criteria**

Thirty-six state-funded schools participated in the study. As part of their participation we requested data about the diagnosis of students with SLD. We also asked them to obtain parents' permission for their children to participate in the study, and to inform teachers and request their co-operation in providing data. The protocols were administered by postgraduate students who were working with the research team.

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We used the diagnoses by school district specialists (see Núñez et al., 2011) according to the DSM-5 (APA, 2013) to select students with SLD, and confirmed learning difficulties in the sample in at least one academic skill (e.g., reading accuracy/fluency, spelling accuracy, written expression competence and fluency, and mastering number facts) that had persisted and failed to improve as expected, despite the provision of targeted intervention for at least six months (Criteria A). The diagnostic process in Spain usually involves the following steps: 1) Analysis of the learning delay and determining whether the students' academic performance is significantly lower than their intellectual ability, 2) Deficits in cognitive processes that would justify the discrepancy between ability and performance (including IQ), 3) Consideration of alternative explanations for the deficits (visual, auditory, motor, emotional, etc.), and 4) Modifications to the conditions of access to the curriculum that seem to be preventing the students from pursuing the standard curriculum normally. All the SLD participants received instruction in terms of remediation and accommodation to the ordinary classroom, and they also participated in supplemental instruction specific to their deficit or deficits outside of the normal classroom.

SLD participants were diagnosed if at least one interpretable index in Verbal Comprehension or Perceptual Reasoning was  $\geq 80$  and performances in reading, writing, and/or math skills were under the clinical cutoff scores indicated by cited guidelines ( $\leq 2$  SD below mean performances of age-matched participants or  $\leq 5^{\text{th}}\text{--}10^{\text{th}}$  percentile). Students performed at a significantly lower level than most students of the same age (Criteria B).

The difficulties experienced by the participants appeared in the early years of schooling, during primary education (Criteria C). In order to select a homogeneous group of children with SLD without significant comorbidities and potentially confounding factors (frequently co-occurring with SLD), our exclusion criteria were the presence of significant medical or

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psychological problems, intellectual disability and comorbid disorders (e.g., attention-deficit/hyperactivity disorder, developmental coordination disorder, present specific language impairment), sensory impairment, a history of chronic absenteeism, severe emotional problems, pervasive developmental disorders (PDD), disruptive behaviors, or not having received appropriate instruction and/or intervention (Criteria D)

The level of functional impact, the degree to which the student struggles to perform in comparison with their demonstrated impairment, was diagnosed for the 230 children with SLD. In the total sample 189 (82.2%) exhibited math disabilities and 78.3% (180) reading and writing disabilities. In boys, 117 (79.6%) exhibited math disabilities and 115 (78.2%) reading and writing disabilities. In girls 72 (82.2%) exhibited math disabilities and 65 (78.3%) reading and writing disabilities.

### **Instruments**

#### ***Teacher Perceptions of Parental expectations and Teacher Expectations of Student Academic Achievement***

We assessed parent and teacher expectation using two items included in the General Learning Difficulties Questionnaire (see, Núñez et al., 2005). This instrument was designed to obtain data about various issues theoretically related to LD. Each student's teacher-tutor completed the questionnaire prior to the students' assessment. The two items used in this study had similar structures. Teacher expectations were measured with the item "The expectation of teachers regarding the child's short-term performance is: *very negative* (1), *negative* (2), *medium* (3), *positive* (5), *very positive* (5)". The expectations of the parents were extracted from the teacher-tutor's (teachers' perceptions) responses to the item, "In general, what academic performance do the parents expect from their child in the short-term?: *very low* (1), *low* (2),

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*medium (3), high (4), very high (5)*".

### ***Student Academic Self-Concept***

We assessed students' academic self-concept using the Self-Description Questionnaire (SDQ-I). This multidimensional instrument (Marsh, 1988), consists of 76 items organized into eight self-concept dimensions that subjects respond to on a 5-point scale. The SDQ-I has demonstrated validity and reliability (see Byrne, 1996), and is widely used in research with students with learning difficulties and Spanish version (e.g., Núñez et al., 2005, 2011). The subscale that offers information on the academic dimension (self-concept as a student) has good reliability in the Spanish population ( $\alpha = .85$ ), and in our study with LD students, the reliability of the academic dimension of self-concept was  $\alpha = .87$ .

### ***Student Internal Causal Attribution***

We used the Sydney Attribution Scale (SAS) to measure the factors that students with LD attribute their academic achievement to. The SAS is a multidimensional scale that assesses subjects' perceptions of the causes of their academic successes and failures, adopting a dispositional viewpoint (Marsh, 1988). The scale is made up of 24 hypothetical situations that subjects respond to on a 5-point scale. These 24 situations involve combinations of 2 academic areas (mathematics, verbal), 3 types of causes (ability, effort, external causes), and 2 contrasting hypothetical outcomes (success situations and failure situations). In this study we only used the items corresponding to the subscales evaluating the attributions of success to skill, or failure to the lack thereof. The SAS adaptation for Spanish-speaking populations has been shown to have acceptable reliability,  $\alpha = .81$ , and construct and predictive validity for academic achievement (Núñez et al., 2005). In the current study, the reliability of the subscales of attribution of academic successes and failures to ability (or its absence) was  $\alpha = .85$  for successes, and  $\alpha = .76$

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for failures.

### ***Motivation to Learn***

We used the AGQ (Academic Goals Questionnaire, Hayamizu & Weiner, 1991) to assess SLD students' goal-oriented motivation. The AGQ is made up of 20 items, eight concerning *learning goals* (evaluation of students' interest in learning as a priority goal), six concerning *performance goals* (students' interest in reaching a certain goal as a priority aim), and six referring to motivational orientation towards obtaining *social reinforcement* and acknowledgement. In this study, we only used the learning goals subscale. The subjects rate each item on a 5-point scale (*never, ..., always*). An example of an item to measure learning goals is: "I study because, for me, it is interesting to solve problems or tasks." The Spanish adaptation of the AGQ exhibits good reliability coefficients with SLD students (learning goals:  $\alpha = .85$ ), and excellent structural validity and predictive validity for various types of learning strategies and for academic achievement (Núñez et al., 2011).

### ***Student Academic Achievement***

We assessed prior academic achievement by using students' final academic grades at the end of the previous school year. Elementary students' mean grades were calculated from their grades in Spanish Language, English as a Foreign Language, Mathematics, and Science.

Secondary students'.

### **Data analysis**

We examined the study hypotheses using path analysis methodology with AMOS.22 (Arbuckle, 2009) (see Figure 1). First, we used a series of goodness of fit statistics to analyze the postulated model. In addition to chi-square ( $\chi^2$ ) and its associated probability ( $p$ ), we used information provided by the GFI and the AGFI, the CFI, and the RMSEA. According to these

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authors, the model fits well when GFI and AGFI  $> .90$ , CFI  $> .95$ , and RMSEA  $\leq .05$ . We employed two model evaluation criteria, the Akaike Information Criterion (AIC) and the Bayes Information Criterion (BIC), to calibrate the potential validity of the model. The AIC and BIC reflect the extent to which parameter estimates from the original sample will cross-validate in future samples (Bandalos, 1993). To evaluate the potential for replication of the proposed path model, we compared the ECVI, AIC, and BIC values with those of both the saturated model and the independence model. Comparing the three models, the model with the smallest ECVI, AIC, and BIC values demonstrates the greatest potential for replication.

[Insert Figure 1 here]

### Results

#### Initial data screening

Table 2 gives descriptive statistics and Pearson correlations. A large proportion of the correlations were statistically significant (66.67%). One of the important assumptions of SEM methodology is that the variables being considered must follow a normal distribution. Because maximum likelihood (ML) can produce biases when this assumption is violated (West et al., 1995), we examined the distribution of all the variables (i.e., kurtosis and skewness). Following the criteria laid out by Finney and DiStefano (2006), in which 2 and 7 are the maximum allowable values for skewness and kurtosis respectively (above which ML should not be used), we found that all the variables met those criteria. In our study, asymmetry and kurtosis were close to zero. Therefore, with normality conditions met, we fitted the model using ML.

[Insert Table 2 about here]

#### Testing the hypothesized model

The analysis of the fit of the hypothesized model (Figure 1) suggested a poor fit for the

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model including the attribution of positive academic results ( $\chi^2 = 54.704$ ;  $df = 5$ ;  $p < .001$ ;  $\chi^2/df = 10.941$ ; AGFI = .714; TLI = .331; CFI = .777; RMSEA = .208, 90% CI [.161-.260]), and negative results. ( $\chi^2 = 31.998$ ;  $df = 5$ ;  $p < .001$ ;  $\chi^2/df = 6.400$ ; AGFI = .824; TLI = .559; CFI = .866; RMSEA = .154, 90% CI [.105-.206]). Both  $\chi^2$  and the goodness of fit indices suggested the existence of significant poor fit in the proposed hypotheses and therefore the model would need to be examined and re-specified.

### Re-specification of the models

We analyzed data from the residuals and the modification indexes for the two models. In both models the data suggested the existence of two statistically significant relationships that had not been considered in the initial model hypothesis. They involved the relationship between causal attributions and academic self-concept and the relationship between teachers' perceptions of parental expectations and teachers' expectations. The re-specification of the models involved adding statistically significant effects that were not considered in the initial model one by one (and removing those effects that were not statistically significant from the model).

The first step was to include the effect of the attributional process on academic self-concept in both models, producing a significant improvement in fit in both cases:  $\Delta\chi^2 (54.704 - 16.326) = 38.378$ ,  $p < .001$  (when attributions of internal causality are made to *positive* academic results) and  $\Delta\chi^2 (31.998 - 16.556) = 15.442$ ,  $p < .001$  (when attributions of internal causality are made to *negative* academic results). The regression coefficients were statistically significant in both models. Following that, in both models, the modification indices suggested the inclusion of a second effect: the effect of teachers' perceptions of parental expectations on teachers' expectations. When we included this effect, the models improved notably ( $\Delta\chi^2 (16.326 - 6.287) = 10.039$ ,  $p < .001$  (when attributions of internal causality are made to *positive* academic results)

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and  $\Delta\chi^2 (16.556 - 6.517) = 10.039, p < .001$  (when attributions of internal causality are made to *negative* academic results), even reaching an acceptable fit for both models: positive academic results ( $\chi^2 = 6.287; df = 3; p > .05; \chi^2/df = 2.096; AGFI = .937; TLI = .926; CFI = .985; RMSEA = .069, 90\% CI [.000-.146]$ ), negative academic results ( $\chi^2 = 6.517; df = 3; p > .05; \chi^2/df = 2.172; AGFI = .935; TLI = .913; CFI = .983; RMSEA = .072, 90\% CI [.000-.148]$ ).

Finally, we removed those effects that had initially been predicted to be significant but were shown not to be and that were common to both models. The models exhibited excellent fit: attribution of positive academic results ( $\chi^2 = 7.866; df = 6; p > .05; \chi^2/df = 1.311; AGFI = .965; TLI = .982; CFI = .993; RMSEA = .035, 90\% CI [.000-.093]$ ); attribution of negative academic results ( $\chi^2 = 10.272; df = 8; p > .05; \chi^2/df = 1.284; AGFI = .966; TLI = .982; CFI = .990; RMSEA = .033, 90\% CI [.000-.085]$ ). In addition, the values of AIC, BIC, and ECVI suggest that the models are likely to be replicated in other independent samples (we compared their values of default models with those of both the saturated model and the independence model, all of them were the lowest in the final model).

### Assessment of the final models

Table 3 shows the standardized regression coefficients from the fit of the two models. On formalizing the model, we considered three general hypotheses. Firstly, and in line with predictions, the data confirmed that teachers' expectations and teachers' perceptions of parental expectations about SLD students' future academic performance are conditioned by students' previous and/or current performance, and that this mainly affects teachers' expectations, especially when they are looking for causes of success or failure. A student's previous performance strongly predicts teachers' expectations ( $b = .55, p < .001, d = 1.88$ ) and, to a lesser extent, the teacher's perception of parental expectations ( $b = .22, p < .001, d = 0.47$ ).

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[Insert Table 3 about here]

Secondly, prior achievement was *directly* related to the attribution of failures to a lack of ability (when prior achievement is lower, students are more likely to attribute failure to the absence of sufficient ability), and contrary to our prediction, we *did not find a direct association* between prior achievement and academic self-concept, intrinsic academic motivation, or attribution of successes to ability. However, those relationships did exist *indirectly* via teachers' expectations and teachers' perceptions of parents' expectations, although the effect was mainly weak (see Table 4): When ability is seen as the main cause of success,  $b = .109$  ( $d = 0.22$ ) with student academic self-concept,  $b = .100$  ( $d = 0.20$ ) with student causal attribution, and  $b = .054$  ( $d = 0.11$ ) with student learning goals; whereas when ability is seen as the main cause of academic failure,  $b = .110$  ( $d = 0.22$ ) with student academic self-concept,  $b = -.060$  ( $d = 0.12$ ) with student causal attribution, and  $b = .052$  ( $d = 0.11$ ) with student learning goals.

[Insert Table 4 about here]

Thirdly, we found that teachers' expectations and teachers' perceptions of parental expectations were associated with student variables, albeit less strongly than we hypothesized based on previous research (especially when seeking causes for success). The data show that teachers' expectations were more strongly associated with non-cognitive student variables than teachers' perceptions of parental expectations (that relationship was fundamentally indirect, through the teachers' expectations).

The re-specification of the model showed that the causal attribution of positive and negative academic results is associated with a student's academic self-concept. The data suggests that the greater the attribution of academic success to individual ability, the greater the student's academic self-concept ( $b = .39$ ,  $p < .001$ ,  $d = 0.95$ ), and vice versa; and when academic failures

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are attributed more to a lack of skill, the lower the student's academic self-concept ( $b = -.26, p < .001, d = 0.56$ ). Also indicate that there is a close relationship between academic self-concept and students' academic motivation, which is similar for causal attributions of success ( $b = .40, p > .001, d = 0.89$ ) as well as failure ( $b = .42, p < .001, d = 1.00$ ), suggesting that students with higher academic self-concept exhibit stronger motivation for learning.

### Assessment of gender invariance

For the two final models (successes and failures), we analyzed gender invariance. The data suggest invariance for both models: *success* [assuming the unconstrained model to be correct ( $\chi^2(12) = 19.697, p = .073, \chi^2/df = 1.641$ ), there were no gender differences in any of the three dimensions : structural weights ( $\chi^2(9) = 7.757, p = .559$ ), structural covariances ( $\chi^2(1) = .218, p = .641$ ), or structural residuals ( $\chi^2(5) = 11.208, p = .051$ )], *failure* [assuming the unconstrained model to be correct ( $\chi^2(14) = 18.703, p = .177, \chi^2/df = 1.336$ ), there were also no gender differences in any of the three dimensions: structural weights ( $\chi^2(8) = 5.491, p = .704$ ), structural covariances ( $\chi^2(1) = .218, p = .641$ ), or structural residuals ( $\chi^2(5) = 11.053, p = .058$ )].

## Discussion

SLD may be a risk factor for students in terms of their school adjustment and achievement. Students with SLD face many challenges in their academic lives, and overcoming those challenges depends on a series of intrinsic and extrinsic variables besides cognitive capacity (Idan & Margalit, 2014; Meltzer, 2004). These variables can make the learning process easier or more difficult and can affect students' involvement (Phillipson & Phillipson, 2017), persistence and performance in school tasks (McInerney et al., 2012). From the *Risk and Resilience Model* we understand that student protection and risk factors cannot be considered as individual, stable variables of the person, but instead have cumulative effects on children's lives

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(Margalit, 2003). Therefore, knowing how these variables are related and influence each other is important for educational practice, since that would offer clues about what protective factors help to prevent the risk of school failure.

Contrary to our hypothesis, we did not find prior achievement to be directly associated with students' self-concept and motivation, nor with the attribution of students' successes to their own ability and effort, although it was associated with their attribution of failures (the lower the prior achievement, the higher the tendency to attribute failure to insufficient ability). However, there was an indirect relationship via teacher expectations and teacher perceived parental expectations (more so in the case of attribution of academic success, and less so in the attribution of explanations of failure).

Our findings indicate that extrinsic variables such as teacher perceptions of parental expectations and teachers' expectations influence students' intrinsic variables even more than the students' own experiences of academic success or failure. These results are similar to those from Pasta et al. (2013) indicating that adult expectations could play a particularly important role in the academic life of students with SLD (Raufelder et al., 2015). Authors such as Rodríguez et al. (2013) concluded that parents' expectations have a significant, stable impact on children's academic self-concept, their feelings of self-efficacy, and on achievement, more so than any other measure of parental involvement in students without learning disabilities (Jeynes, 2007). In addition, these relationships are invariant between girls and boys.

It would seem that our results, based on a sample of Spanish students with SLD, are in line with some previous research although there are some small differences. In our case, parents' expectations (as perceived by teachers) influenced students' noncognitive variables through teacher expectations as also demonstrated by Yamamoto and Holloway (2010), although they

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showed that expectations of parents varied according to racial/ethnic group: Previous academic performance of the students was a less influential factor than the expectations of the parents when the parents belonged to racial/ethnic minorities and more influential when they were from European/American Families. Parents' expectations (as perceived by teachers) do not directly affect the students' attributional patterns or self-concept. These parental expectations are directly related to those of the teachers, and it is the teachers' expectations that ultimately demonstrate a direct relationship with SLD students' self-concept and attributions, mostly in the case of positive achievement. The effect of the expectations based on achievement could vary depending on the students' difficulties, perhaps because the interaction style between parents and teachers is narrower when students have SLD (Bryan, 2003) and parents of children with SLD have higher expectations than teachers. This makes it important for teachers to develop a positive attitude toward students, especially students with SLD, in order to include them successfully in school (Gupta et al., 2018).

Finally, students' causal attributions were directly associated with their academic self-concept, a variable with an important role in student academic motivation and achievement (Phillipson & Phillipson, 2017). The greater the attributions of academic success to individual abilities under their control, the better their academic self-concept. More positive academic self-concept encourages stronger academic motivation, and as reflected in previous studies, this could influence students to be more persistent in all of their schoolwork, and encourage greater academic achievement (Núñez et al., 2011; Woodcock & Hitches, 2017; Woodcock & Vialle, 2016).

### **Limitations**

One of the main limitations of this study is the measure used for teacher and parent

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expectations, with a single question for each. The perceptions of parents and teachers varied, and when there was a difference, the teachers' expectations were lower. Nonetheless, previous research has used isolated questions about expectations, as teachers' and parents' understanding is considered valid (Hauser-Cram et al., 2003). Although teachers are an appropriate source of information, it would be interesting in future studies to use a validated scale that could provide a more complex picture of students' school adjustment.

Moreover, parental expectations in this case were evaluated based on teachers' perceptions. It would be useful to analyze and contrast teachers' ideas of parents' expectations with direct information from the families, and see to what extent they agree, and whether it is really the parents' expectations that influence the teachers or merely the teachers' perceptions of those expectations, as they could be substantially different. Results are limited to the finding of a relationship between achievement and causal attribution and possible relationships between other non-cognitive student variables and the teacher's perception of teacher and parent expectations.

### **Implications for Research and Practice**

There is a need for additional studies with larger samples in order to examine whether the statistical power of the variables is similar to our study. In addition, in our study we examined short term expectations, which may be why prior achievement played such a significant role; it may not do so when considered in the long term. It would also be interesting to gather both long and short term information and examine whether there are differences in expectations between the two.

The findings from this study, along with previous research, have significant implications for educational and clinical practice. As Rubie-Davies (2010) stated: "It appears that the teacher expectation literature may need to focus more carefully on teacher moderators of expectations"

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(p.132), which is why learning and managing this reality on the part of teachers is vitally important (Woodcock & Jiang, 2018). Training teachers to analyze their own attributional patterns and expectations could facilitate interventions and teacher support that is not centered on deficits but rather on protective factors, teachers could be encouraged to promote protective variables in the classroom such as positive self-concept, intrinsic motivation, effort and persistence (Meltzer et al., 2004). By understanding and moderating their expectations, teachers could control the type of relationships and feedback they give students with SLD, focusing more on the strengths in students' profiles, on positives rather than their history of academic difficulties. Teachers could therefore offer supportive learning environments and they could moderate their attributions about their students' successes and failures. This may help them to develop more realistic expectations for their students, and to avoid underestimating their students' abilities (Woodcock & Vialle, 2016). It would also be interesting to make teachers aware of the effect parents' expectations have on them, and not to allow their work to be guided by parental expectations, attributions, involvement, or perceptions of their child's ability.

### **Conclusion**

In this study, we examined the mediating role of teachers expectations and parents' expectations (as perceived by teachers) in the relationship between prior academic performance and noncognitive student variables in children with SLD, and the relationship between their prior performance and the expectations of their parents' and teachers' about their academic behavior. As Stipek (2010) said, teacher behavior and affective feedback indirectly influence learning by affecting students' own beliefs about their abilities, their expectations of success, and consequently, their effort and other success-related behaviors.

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**Table 1***Participants' demographic, diagnostic and cognitive characteristic by gender.*

Research participants		Boys	Girls	Total
Age	10	15 (10.2%)	22 (26.5%)	37 (16.08%)
	11	25 (17%)	17 (20.48%)	42 (18.26%)
	12	44 (29.93%)	14 (16.86%)	58 (25.21%)
	13	26 (17.68%)	12 (14.45%)	38 (16.52%)
	14	37 (25.17%)	18 (21.68%)	55 (23.91%)
Ethnicity	White	145 (98.63%)	77 (92.77%)	222 (96.52%)
	Romany	3 (2.04%)	2 (2.4%)	5 (2.17%)
	African	1 (.68%)	1 (1.2%)	2 (.86%)
	Asian	1 (.68%)	0 (0%)	1 (.43%)
IQ	M	92.53	92.21	92.37
	SD	6.26	6.30	6.04
	Minimum	80	80	80
	Maximum	113	121	121
Diagnosis	M	34.60	35.21	34.86
Time <sup>a</sup>	SD	21.59	23.72	22.39
	Minimum	1	1	1
	Maximum	90	90	90

<sup>a</sup> Length of time in months that the students had a diagnosis of SLD at the time of the study.

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**Table 2**

*Matrix of Pearson correlations corresponding to the path model (n = 230) and descriptive statistics of the variables (mean, standard deviation, asymmetry and kurtosis)*

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1.PSAA	–						
2.FESA	.22***	–					
3.TESA	.59***	.30***	–				
4.SASC	.14*	-.04	.19**	–			
5.SCA-S	.16*	.07	.17*	.41***	–		
6.SCA-F	-.20**	.01	-.10	-.28***	-.26***	–	
7.SLG	.10	.10	.046	.44***	.27***	-.21***	–
<i>M</i>	2.53	3.16	2.64	21.76	24.65	27.79	3.27
<i>SD</i>	.91	.69	.81	6.56	7.69	6.70	.89
Asymmetry	.10	-.02	-.10	.06	.53	.15	-.37
Kurtosis	-.01	-.09	-.23	-.14	.27	.59	-.22

*Note.* PSAA = Prior Student Academic Achievement; FESA = Family Expectations of Student Achievement; TESA = Teacher Expectations of Student Achievement; SASC = Student Academic Self-Concept; SCA-S = Student Causal Attribution for Success; SCA-F = Student Causal Attribution for Failure; and SLG = Student Learning Goals. Minimum and maximum scores for the variables PSAA, FESA, TESA and SLG are 0 and 5; minimum and maximum scores for the variable SASC is 8 and 40; minimum and maximum scores for the variables SCA-S and SCA-F are 10 and 50.

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

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**Table 3***Path model of relationship between contextual and personal variables of students with SLD*

Variables related		Estimate	SE	t	p
Ability as a case of positive academic results	PSAA→FESA	.22	.05	3.48	< .001
	PSAA→TESA	.55	.05	10.38	< .001
	FESA→TESA	.17	.06	3.20	.001
	TESA→SCA	.17	.07	2.58	.010
	TESA→SASC	.16	.06	2.60	.009
	FESA→SASC	.39	.05	6.50	< .001
	SCA→SASC	-.12	.06	-1.91	.057
	SASC→SLG	.40	.01	6.16	< .001
	SCA→SLG	.11	.01	1.67	.095
Ability as a cause of negative academic results	PSAA→FESA	.22	.05	3.48	< .001
	PSAA→TESA	.55	.05	10.38	< .001
	PSAA→SCA	-.20	.08	-3.05	.002
	FESA→TESA	.17	.06	3.20	.001
	TESA→SASC	.17	.01	2.66	.008
	SCA→SASC	-.26	.06	-4.09	< .001
	SASC→SLG	.42	.01	6.77	< .001
	SCA→SLG	-.10	.01	-1.62	.105

*Note.* SE = Standard Error; PSAA = Prior Student Academic Achievement; FESA = Family Expectations of Student Achievement; TESA = Teacher Expectations of Student Achievement; SASC = Student Academic Self-Concept; SCA-S = Student Causal Attribution for Success; SCA-F = Student Causal Attribution for Failure; and SLG = Student Learning Goals.

## TEACHER-PARENTS EXPECTATIONS IN LEARNING DISABILITIES

**Table 4***Standardized Indirect Effects*

Research variables		FESA	TESA	SCA	SASC	SLG
<hr/> Ability as a cause of positive academic results <hr/>						
PSAA	→	–	.04	.10	.11	.05
FESA	→	–	–	.03	.04	-.03
TESA	→	–	–	–	.07	.11
SCA	→	–	–	–	–	.16
SASC	→	–	–	–	–	–
<hr/> Ability as a cause of negative academic results <hr/>						
PSAA	→	–	.04	-.06	.11	.05
FESA	→	–	–	-.02	.05	-.02
TESA	→	–	–	–	.03	.10
SCA	→	–	–	–	–	-.11
SASC	→	–	–	–	–	–

*Note.* PSAA = Prior Student Academic Achievement; FESA = Family Expectations of Student Achievement; TESA = Teacher Expectations of Student Achievement; SASC = Student Academic Self-Concept; SCA-S = Student Causal Attribution for Success; SCA-F = Student Causal Attribution for Failure; and SLG = Student Learning Goals.