

Perception of Specific Learning Disorders in parents and teachers. A socio-cultural perspective

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Abstract

Mainstream perspectives about Specific Learning Disorders (SLD) range between the rehabilitative and psychological understanding of SLD. Few studies have been developed to detect SLD perception in school participants in reference to a cultural standpoint. Adopting a social constructivist perspective, which is part of a cultural framework, the present work aims at detecting the cultural models influencing the perception of SLD in a sample of parents and teachers. A multiple choice survey was administered to primary school parents (n = 1095) and teachers (n = 110), and a subsequent multidimensional analysis procedure – consisting of both Multiple Correspondence and Cluster Analysis – allowed the collection of cluster profiles describing SLD knowledge among the sample. Finally, a Chi-Square analysis investigated the significant differences in SLD perception among parents

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and teachers, taking into account their experience of SLD. The results offer a breakthrough in the study of SLD perception among school participants and stimulate reflection at both a theoretical and intervention level.

Keywords: Specific Learning Disorders; Socio-cultural perspective; Culture and Specific Learning Disorders.

1. Introduction

The neurobiological origin and nature of Specific Learning Disabilities (henceforth SLDs) is widely shared in international literature (WHO, 2010; APA, 2013). Although research on neurobiological origins has not found a univocal cause, researchers agree that some predominant genetic and constitutional elements determine small but significant abnormalities in the brain sites involved in the organization of the cognitive functions required in reading activities (Livingstone, Rosen, Drislane, & Galaburda, 1991; Zeffiro & Eden, 2000; Lyon, Shaywitz, & Shaywitz, 2003; Baltimore & Press 2006; Pennington, 2006). However, it is equally important to stress the fact that the manifestation of a neurobiological disorder is both mediated and modulated by environmental factors, which may favor or hinder the acquisition of a specific skill such as the reading ability.

Learning disabilities have been proved as not being related to limited intelligence, lack of motivation, inadequate instruction, vision or hearing problems, cultural disadvantages, or other external factors; they are rather associated to a genetic and neurobiological condition characterized by an atypical development of brain structures and/or cognitive functions (Fenton & Krahn, 2007; Wadlington & Wadlington, 2008; Griffin & Pollak, 2009). Since SLDs, such as dyslexia, appear to be considerably underestimated (Barbiero, Lonciari, Montico, Monasta, Penge, Vio *et al.*, 2012) they represent a core issue in the current educational system in terms of diagnoses, treatment and development of adequate learning educational methods (Morlini, Stella, & Scorza, 2014). Studies on learning disabilities have increased in parallel with the growing need of educational systems and institutions for valid evaluation methods (Morlini, Stella, & Scorza, 2015), working procedures, and models of interventions suitable to direct educational and learning efforts or rehabilitate atypical cognitive functions.

The studies on SLD have progressed mainly following two different research paths. The first is based on a rehabilitative approach, which identifies adequate treatments aimed at rehabilitating the neuropsychological mechanisms and cognitive processes that determine the SLD's diagnosis (Fletcher, Lyon, Fuchs, & Barnes, 2006; Snowling, 2013). The second path is built on a psychological strategy, which focuses on the impact of SLDs on psychological well-being (Ryan, 1994; Levine, 1998; De Beni & Moè, 2000; Dweck, 2000; Hellendoom & Ruijsenaars, 2000).

Despite the heterogeneity of the factors investigated in academic research, SLDs are conceived of as the result of specific intra-psychic and

cognitive configurations, which affect student at a cognitive level and in their inter-individual relationships. In other terms, research still has not connected the procedures of educational systems to the results obtained in the psychological and neuropsychological field. Screening, diagnostic and rehabilitative intervention at a psychological and neuropsychological level require a technical knowledge that is lacking in teachers, its being out of their educational demand and working practice.

Accordingly, while the updated training courses based on renewed research results allow teachers to shed light on the psychological and neuropsychological aspects of SLDs, they do not have – or have limited impact – on teaching practices. Such courses increase teachers' knowledge of the nature of learning disorders, but they do not help teachers develop adequate educational interventions focused on learning aims. Moreover, the path mentioned above might have a “boomerang effect.” In fact, the school system often translates the clinical and etiopathogenetic analysis of learning disabilities as a race to diagnosis and professional intervention or rehabilitation. The clinical approach is considered as the only possible solution that would bring back to normal an atypical neurobiological development, avoiding the implementation of a specific educational project for learners.

According to this framework, it seems interesting to examine the influence that knowledge and attitude of school teachers and parents have on SLDs, intended as the context enabling the development of educational interventions focused on learning aims.

In the last decades, many studies stepped forward focusing on the school participants' perception of SLDs. For example, Al-Yagon and Mikulincer (2004) highlighted how students with SLDs are more likely to feel rejected and misunderstood by teachers and peers, and McCarthy and colleagues (McCarthy, De Vries, & Forger, 2009) confirmed that students suffering from SLDs often report that they feel misunderstood and accused of laziness by teachers. Hornstra and colleagues (Hornstra, Denessen, Bakker, Bergh, & Voeten, 2010), and Wiesmann and Hannich (2011) affirmed that prejudiced attitudes of teachers could reduce confidence and diligence of the students in approaching their schoolwork. Hornstra and colleagues (2010) also examined the attitude of teachers toward dyslexia and the effects that this attitude produces on teachers' expectations; furthermore, they compared the academic achievements of students with dyslexia to those of students without learning disabilities. According to such viewpoints, SLDs can be acknowledged as representing a cultural syndrome (Triandis, 1993; 1994;

1995) consisting of a pattern of shared attitudes, beliefs, categorizations, definitions, norms, roles, and values that organize and are organized by individuals' experience of SLDs.

Accordingly, the present work aims at analyzing the organizational role of SLD culture in the educational and intervention procedures enacted by teacher and parents.

1.1. Culture as model to interpret educational practices

There is wide agreement that culture consists of shared elements providing the standards for perceiving, believing, evaluating, communicating, and acting. These shared elements are transmitted and modified in the course of time (Valsiner, 2000; Venuleo & Salvatore, 2008; Mossi & Salvatore, 2011; Salvatore & Freda, 2011; Salvatore, 2015) and include unexamined assumptions and standard operating procedures that reflect *what has worked* and *what needs to be implemented*. The notion of culture considers the individual as being part of a cultural context and, at the same time, as being the active subject who holds a specific position within the cultural context (Lopez & Guarnaccia, 2000) and acts accordingly. The subject's viewpoint represents a specific frame, which allows interpreting and confronting specific phenomena. According to different conceptualizations of the socio-symbolic process (Geertz 1973; Triandis, 1996; Valsiner, 2000; Zittoun, 2006), culture is thought to be a shared symbolic universe, which provides the semiotic resources required to perceive, experience, and act.

Psychodynamic and semiotic research (Salvatore & Pagano, 2005; Venuleo & Salvatore, 2008; Salvatore & Venuleo, 2013; Guidi & Salvatore, 2013; Mossi & Salvatore, 2011; Salvatore & Freda, 2011) suggest that such a symbolic universe could be thought of as a collection of generalized meanings, precisely a set of fundamental assumptions controlling experience interpretation. Thus, culture represents a system of socially patterned and historically reproduced practices (Gone & Kirmayer, 2010), and the set of generalized meanings can be conceived of as oppositional dimensions. For example, considering SLDs as *pathogenetic* or *didactical* matters means taking into account the experience of SLD itself: as a pathogenic matter, the cognitive process is modified or rehabilitated. As a didactical matter, inadequate educational procedures need to be revised and implemented. It is worth noting that the definition provided above is superior to the idea of culture as a monolithic entity and considers it as a system with an innate,

intrinsic variability (Cohen 2009; Valsiner, Molenaar, Lyra, & Chaudhary, 2010). Culture is intended as a generalized system of meanings closely related to an area of the cultural universe that controls people's way of interpreting the whole experience and, therefore, the way people act, think and feel (Triandis, 1996; Venuleo & Salvatore, 2008; Cohen, 2009). These behaviors may favor different systems of activity and ways of grouping people coming from very diverse socio-demographic contexts. Intra-group diversity could be interpreted as the different position of an individual within a shared symbolic universe. In other words, it could be regarded as an alternative interpretation of the standard cultural system (Salvatore & Venuleo, 2013, Venuleo, Rollo, Marinaci, & Calogiuri, 2016), which manifests itself as specific patterned practices or behaviors (Shweder & Sullivan, 1990; Markus & Kitayama, 1998; Zittoun, 2006; Linell, 2009). Culture, therefore, represents a generalized system of meaning which does not correspond to a specific social group but is transversal among groups. Individuals belonging to different social groups may share the same subjective culture, as well as members of the same social group may have different subjective cultures.

The above-presented view about culture as being a solid base of educational practice is consistent with the different inter-individual teaching practices expressed in the educational system. The educational approach of teachers and parents is the social result of a specific subjective culture actualized in learning models, methods, and adopted procedures. In other terms, the way teachers and parents handle SLD students reflects the consistency between beliefs, feelings, and actions motivated by the culture to which the subjects belong. Accordingly, while some subjective cultures encourage behaviors and attitudes that are related to specific interpretations of SLDs, didactical methodologies, learning goals, and ways of handling classrooms, some others do not. This means that the capacity of a subjective culture to support SLD depends on the goals and the "rules of the game" of the cultural context.

As an example, let us examine an educational system culturally addressing SLDs as a neurological pathology, rather than an atypical cognitive development, and analyze its relationship with the didactic procedures and the clinical interventions.

In this example, the role of the school in supporting students with specific learning disabilities appears unnecessary and will perhaps become more meaningful later. In fact, priority is given to clinical intervention, which is required to restore a normality status in learners and make general didactical

procedures work. Thus, as clinical intervention focuses on working memory rehabilitation, it could represent the pathway for achieving learning goals – and practices – based on the storage and retrieval of information (i.e., learning the name of the rivers of a specific region, or the capital city of European states). Here is when the school represents the appropriate context that helps students with SLDs achieve learning goals through different didactic modalities. Learning goals could be achieved using the Table of Pythagoras or cognitive maps, avoiding the use of working memory. In this example, SLDs are not an obstacle to learning practices, but rather a necessity to develop different didactical procedures. According to such A view, clinical intervention assumes a secondary role, which aims at implementing – and not restoring – impaired cognitive functions.

We advance the argument that subjective culture plays a significant role in determining how both teachers and parents conceive and handle students with learning disorders. To have a better understanding of the co-actors' perception of SLD, we present the results of a preliminary study, conducted on a sample of Italian schools, which aimed at exploring teachers and parents' cultural conception of learning disabilities and learning in general.

2. Method

2.1. Sample

The study was carried out in the districts of Lecce, Brindisi, and Taranto in the Southern part Italy, and was based on a convenience sample of 1890 participants recruited in 12 schools. The study involved 176 teachers and 1714 parents who filled in a survey aimed at detecting the cultural perception of SLDs in parents and teachers of students attending primary and secondary school (the distribution of the sample is shown in Tab. 1).

Table 1 - *Distribution of the sample in the districts*

District	Frequency	% of the sample	% of teachers	% of parents
Lecce	215	11.4	5.1	12
Brindisi	438	23.2	18.8	23.6
Taranto	1237	65.4	76.1	64.4

2.2. Procedure

To examine their subjective cultures and roles in handling learning disabilities, teachers and parents were asked to fill-in a specific questionnaire based on a precise psychodynamic methodology developed by Carli (Carli & Paniccchia, 1999; Carli & Salvatore, 2001; Mossi & Salvatore, 2011; Guidi & Salvatore, 2013; Venuleo, Mossi, & Marinaci, 2017) and widely spread in the educational and organizational fields. After obtaining the head principals' permission, participants were approached individually outside the school building and asked to complete the questionnaire. Subjects were informed about the general aim of the questionnaire and the voluntary nature of the participation.

2.3. Instruments

Experienced researchers developed an ad-hoc questionnaire composed of 25 multiple-choice questions (corresponding to 165 items). The questionnaire consisted of two parts: in the first part, we collected information about teacher-parent roles and experience of learning disorders; in the second part, for each question, participants were asked to check two among the possible answers. The following areas were investigated: knowledge and experience of learning disorders, the role and compliance of both parents and teachers, and educational achievements of SLD students.

Through consensus, a pool of four highly experienced researchers accurately selected the items to stimulate participants to express their perceptions and opinions concerning learning disabilities in the assessed areas. The questionnaire intended to encourage the expression of general evaluations, rather than prompting circumstantial reasoning or knowledge (Mossi & Salvatore, 2011). In this way, any combination of "question/response" determined a specific marker suitable to identify the potential meaning of a specific cultural profile.

3. Data analysis

The *question/response* combination was used as *variable/modality* combination, and the responses of the sample ($N = 1205$) were subjected to Multiple Correspondence Analysis (MCA, Lebart, Salem, & Berry, 1998). The MCA is a statistical data analysis technique for categorical data, similar to the principal component analysis, which aims at detecting patterns of

response modalities recurring among respondents. The advantage of MCA «lies in its capability of permitting a theoretically unlimited number of variables to be included simultaneously in the analysis» (Blasius & Thiessen, 2001, p. 19). As such, MCA appears coherent with the suggestion that culture is a complex phenomenon to analyze (Batista-Foguet, Mendoza, Pérez-Perdigon, & Rius, 2000) and, therefore, requires a different approach than studying isolated answers connected to isolated perceptions, opinions, and judgments. It demands an approach focused on the cognition of the interdependency of all the survey variables. According to this premise, MCA is acknowledged as being a useful method for the concise mapping of the relations observed among the set of variables. A limited number of latent synthetic variables sum-up these relations (factorial dimensions) (Blasius & Greenacre, 1998).

The factorial dimensions extracted by MCA describe the juxtaposition between two patterns of co-occurring response modalities across respondents. Factorial aggregations of response modalities could be interpreted as the effect of a hidden generalized meaning linking the response modalities that are independent of their specific content (Landaeur, Foltz, & Laham, 1998; Lebart *et al.*, 1998; Salvatore & Venuleo, 2013). As a result, we consider factors as the markers of an oppositional dimension made of opposite generalized meanings. According to the factorial dimensions detected by the MCA, a hierarchical Cluster Analysis (see Gore, Leuwerke, & Turley, 2006) was carried out to arrange the answers of the participants. Detected clusters were interpreted as a specific cultural view shared by a group of individuals. (Mossi & Salvatore, 2011; Venuleo & Guidi, 2011; Gennaro, Venuleo, Auletta, & Salvatore, 2012; Guidi, Mannarini, & Salvatore, 2015; Venuleo, Calogiuri, & Rollo, 2015).

Finally, considering the categorical nature of the data, two Chi-square tests were carried-out to examine the differences among the identified SLD clusters, the roles of the respondents (teacher and parent), and the distribution of the clusters according to previous experience of SLD (SLD-experienced teacher vs. non-experienced, SLD-experienced parents vs. non-experienced).

4. Results

The first two factorial dimensions detected by MCA explained the 86.78% of the total amount of data inertia (Benzecri, 1979). Tables 2-3 highlight the first ten most representative answer modalities that define each

dimension. According to the V-Test value of each modality – the degree of association of each modality to the factor – factorial dimensions were interpreted as follow (see Fig. 1).

Table 2 - *Answer modalities characterizing the first factorial dimension X axis*

Modality of the variable	Label	V-Test
SLD as neurobiological abnormalities	yes	25.78
Parents involvement consists of specialists' intervention	yes	23.37
Teacher's working abilities in SLD depends on SLD knowledge	yes	18.30
School is helpful training teachers	yes	17.44
Denying school promotion is not helpful	yes	16.95
SLD's future depends on learning method	yes	16.41
SLD's evaluation need specific methods	yes	15.80
More information to recognize SLD is needed	yes	15.07
School need to collaborate with professionals	yes	14.39
Technology is a tool for intervention	yes	14.39
Middle Zone		
SLD facing is based on comprehension	yes	16.59
School rejecting develop scholar's commitment	yes	-15.46
SLD is laziness and inattention	yes	-15.53
Future depends on commitment	yes	-14.91
SLD scholars needs moral support	yes	-14.31
Teacher need to comprehend scholars difficulties	yes	-14.02
Extra school study is a tool for intervention	yes	-12.67
Families have to support scholars on homework	yes	-11.99
SLD is a matter of poor attitude	yes	-11.91
Parents have to deny the problem	yes	-11.83

4.1. Factor 1: Nature of the Specific Learning Disorder

The first factor extracted by the MCA regards learning disability as a social phenomenon. The positive semi-axis (marked as attitude) refers to the conception of learning disability as inherently linked to laziness, inattention and low commitment by the students. Teachers methodologies are regarded as having no role in favoring learning, in light of the assumption, “*The harder the student works, the greater the results*”. The parents’ role is to

support students with SLD by helping them with their homework. The negative semi-axis, (marked as disorder) regards SLDs as a pathology, which, therefore, needs to be treated with rehabilitative interventions carried-out by expert professionals external to the school. Teachers need to revise their methods taking into account different learning aims, and parents' role lies in the possibility of implementing a supportive network.

Table 3 - *Answer modalities characterizing the second factorial dimension plotted as Y axis*

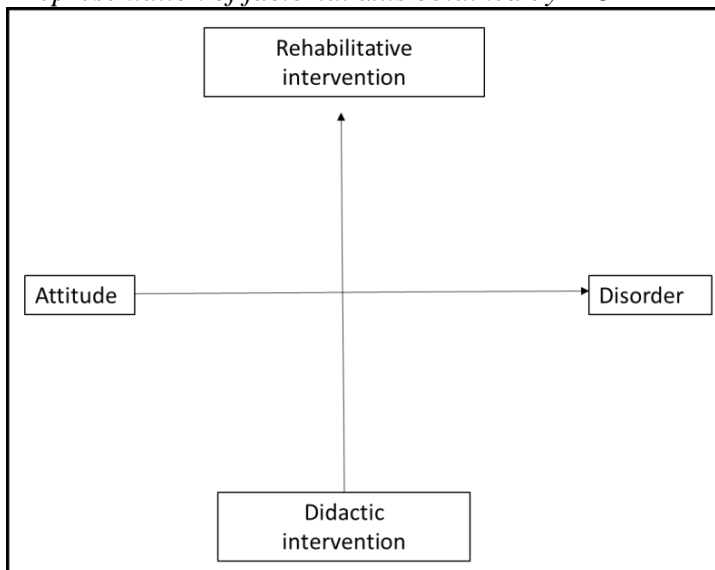
Modality of the variable	Label	V-Test
SLD needs to be faced through rehabilitative therapy	yes	5.69
Errors need to be tolerated	yes	5.64
SLD depends on social environment	yes	5.35
Teacher have to promote integration	yes	5.26
SLD scholars future depends on family	yes	4.91
Parents-school relationship needs to be focused in emotions managing	yes	4.69
Hyperactivity is a signal	yes	4.61
Parents-school relationship needs to be focused in on setting support	yes	4.48
School needs to focus on social integration	yes	4.46
SLD behavior is often angry	yes	4.45
Middle Zone		
SLD denotes teacher incompetence	yes	-5.71
Results depend on learning methods	yes	-5.46
Future depends on commitment	yes	-5.41
School could help promoting school values	yes	-5.36
Parents-school relationship could improve efficiency	yes	-5.24
Family is request to check scholars homework	yes	-5.18
Family could improve scholar study method	yes	-4.91
Extra school activities are an intervention tool	yes	-4.82
Difficulties in studying produce stress	yes	-4.73
Evaluation is a tool to improve	yes	-4.61

4.2. Factor 2: *Scope of intervention for Specific Learning Disorder*

The second factor extracted by the MCA describes the scope of intervention in SLD cases. The positive semi-axis (marked as rehabilitative)

considers intervention in learning disability as an emotional, relational, and behavioral aspect implemented inside and outside the school context. Specific interventions aim at overcoming self-esteem and interpersonal relationship problems. The negative semi-axis (marked as didactical intervention) considers SLDs as linked to the implementation of non-technical devices aimed at improving students' welfare during their school life.

Figure 1 - Representation of factorial axis obtained by MCA



4.3. Cluster Analysis

According to the obtained factorial dimensions, the subsequent hierarchical Cluster Analysis produced five clusters as optimal and efficient partitions (between-class inertia/total inertia: 68). Each cluster was interpreted according to the similarity of answer profiles (the first ten modalities defining cluster profiles are reported in Tab. 4).

4.3.1. Cluster 1: SLD as a neurological condition

This cluster represents the 20.53% of the sample, i.e. 388 individuals among teachers and parents. Individuals belonging to this cluster conceive Learning Disability as a pathological condition caused by neurological anomalies, which manifests itself as behavioral and emotional disorders in

the classroom. Since technical instruments to favor learning practices are non-existent, the role of the school is minimal (see Tab. 4).

4.3.2. Cluster 2: SLD as a socio-affective attitude

This cluster represents the 17.83% of the sample, i.e. 337 individuals among teachers and parents. Learning Disability is represented as an intrapsychic phenomenon manifesting itself as isolation, emotional distress, low self-esteem, and difficulties in managing affection and relationships. The school lacks intervention instruments and can only tolerate the situation, since socio-integrative intervention represents an arbitrary way to face such difficulties (see Tab. 4).

4.3.3. Cluster 3: SLD as a rehabilitative problem

This cluster represents the 17.46% of the population in the analysis, i.e. 330 individuals. Individuals belonging to this cluster conceive SLD as a disorder, and low results at school provide evidence of the ineffectiveness of the school system. Only medical or paramedical intervention, such as linguistic or phonological rehabilitation, could help students face academic demands (see Tab. 4).

4.3.4. Cluster 4: SLD as a didactical matter

This cluster represents the 19.95% of the sample, i.e. 377 individuals. Individuals falling within this cluster believe that the school system should handle learning disability directly: the teacher is thought to have a leading role in helping students to overcome their difficulties through the use of different didactical methodologies, especially the use of 2.0 tools (see Tab. 4).

4.3.5. Cluster 5: SLD as a school attitude

This cluster represents the 24.43% of the population in the analysis, i.e. 458 individuals among teachers and parents. It conceives SLD as a matter of personal attitudes described as laziness and low commitment. The school system and the family could help students by increasing understanding and motivation (see Tab. 4).

Table 4 - Answer profile characterizing detected clusters (Cluster labels are reported in the text)

Cluster	V-Test	% cluster in the modality	% modality in the cluster	%	Variable
1	10.71	30.43	73.71	49.74	Parents needs to ask for specialist interventions
	10.36	27.99	82.73	60.69	School need to collaborate with external professionals
	10.16	35.09	53.09	31.06	Teacher need to cooperate with specialist
	9.83	31.43	63.92	41.75	Psychological intervention represent an intervention tool
	8.76	40.39	31.96	16.24	Parents need to follow teacher
	8.61	36.15	39.69	22.54	SLD is a neuro-biological condition
	8.52	28.82	67.01	47.72	SLD requires psychological sustain
	8.42	37.53	35.31	19.31	SLD condition is a matter of specialists
	7.69	34.09	38.92	23.44	Inadequate behavior is prodromal of SLD
	7.69	34.43	38.14	22.80	Hyperactivity is prodromal of SLD
2	14.32	29.87	84.57	50.48	Future depends on family support
	13.41	31.81	74.48	41.75	Psychological intervention represent an intervention tool
	12.04	32.4	64.99	53.77	Result depends on self-esteem increasing
	11.05	38.36	44.51	20.69	School helps favoring social integration
	10.82	27.72	74.18	47.72	SLD requires psychological sustain
	10.70	32.98	54.91	29.68	Psychologists are the main figure devoted to intervention
	10.47	30.44	61.42	35.98	Emotional distress is a symptom of SLD
	10.41	35.62	46.29	23.17	Isolation distress is a symptom of SLD
	9.11	31.06	57.27	32.86	SLD depends on social environment
	8.79	32.89	44.51	24.13	Social integration is one of treatment's aim
3	25.95	58.79	85.15	25.29	Speech therapy is the elective intervention tool
	25.30	59.38	81.52	23.97	SLD has to be faced through speech therapy
	24.11	52.53	84.85	28.21	Speech therapist is the specialist devoted to the intervention
	13.07	35.89	60.91	29.63	There are not effective therapies
	9.36	31.92	47.88	26.19	SLD is a neuro-biological condition
	8.39	25.17	68.48	47.51	Teacher need to cooperate with specialist
	8.14	28.45	50.61	31.06	Poor school performances are a SLD marker
	6.79	23.56	65.76	48.73	Results depends on rehabilitations
	6.24	35.73	29.61	10.21	SLD evaluation is a matter of specialist
	6.14	22.87	66.15	49.74	Teacher abilities depends on SLD knowledge

Perception of SLD in parents and teachers

	22.56	60.01	70.82	23.54	Technology is a tool of intervention
	16.45	40.41	73.21	36.14	SLD facing need teacher training
	15.72	42.76	64.99	30.32	Teachers need to be trained by school
	15.09	55.37	43.77	15.77	School need to review teaching method
4	14.98	43.32	60.21	27.72	Teacher need to differentiate methods
	13.07	32.41	77.19	57.51	SLD is a neuro-biological condition
	12.85	41.56	52.25	25.08	Results depends on studying strategies
	12.74	61.36	28.65	9.31	Future depends on learning methods
	11.65	39.29	50.13	25.45	SLD students think to be unable
	11.52	32.77	67.37	41.01	Future depends on studying methods
	15.17	57.88	44.11	18.47	SLD is characterized by laziness and carelessness
	12.79	73.91	22.27	7.31	Future depends on commitment
	12.18	42.74	54.59	30.95	Comprehension is needed to face SLD
	11.54	51.09	35.81	16.98	SLD is characterized by poor attitude
5	10.81	50.51	32.97	15.82	Early diagnosis is based on poor commitment
	8.86	50.01	29.04	14.07	School rejection push for more commitment
	9.35	48.34	28.61	14.34	Parents are needed to check homework
	9.23	50.43	25.55	12.28	SLD has to be faced through moral support
	8.63	35.46	54.59	37.31	SLD are helped by doing homework with friends
	8.57	60.01	15.72	6.35	Teachers are needed to understand difficulties

4.4. Chi-square tests

According to the experience of SLDs in both parents and teachers, the two Chi-square tests highlighted meaningful differences only among identified clusters. Specifically, the Chi-square test examining the distribution of the clusters among parents and teachers did not highlight meaningful differences ($\chi^2 = 2,160$; $df = 4$; $\sigma = .706$). On the other hand, the Chi-square test focusing on the distribution of the clusters among experienced and non-experienced parents and teachers emphasized meaningful differences ($\chi^2 = 218,272$; $df = 12$; $\sigma = .000$). Moreover, the analysis of adjusted standardized residuals offered a better understanding of the identified differences (see Tab. 5). Interestingly, while experienced parents resulted more accentuated in clusters 2 and 3, non-experienced ones appeared emphasized in cluster 5. Similarly, experienced teachers resulted more highlighted in cluster 4, while non-experienced ones resulted more accentuated in cluster 5.

Table 5 - *Chi-square count and adjusted residual values (adj) concerning the distribution of the clusters among experienced and non-experienced parents and teachers*

Cluster	Chi-square	Experienced parents	Non-experienced parents	Experienced teachers	Non-experienced teachers
1	count	212	152	16	8
	adj resid.	0.1	2.1	-2.7	-0.2
2	count	202	117	13	5
	adj resid.	2.2	-0.6	-2.7	-1
3	count	190	123	13	4
	adj resid.	1.3	-0.5	-2.6	-1.3
4	count	165	103	88	3
	adj resid.	-4.7	-4	13.4	-2.6
5	count	260	187	8	21
	adj resid.	1.1	2.4	-5.2	5.1

5. Discussion

The present work aims at describing the cultural models that design parents and teachers' conceptions of SLDs. The factorial dimensions emerging from the MCA describe the cultural space supporting different conceptions of SLDs. They delineate the interpretative view (factor 1: attitude vs. disorder) and the domain of intervention (factor 2: rehabilitative vs. didactic) respectively. According to the interpretative viewpoint (Factor 1), SLDs represent the dichotomy between attitude and disorder. Both aspects focus on students and involve a normative view (i.e., SLD as an atypical attitude or condition), which does not consider the school as the entity aimed at favoring the developing of learning. According to the intervention viewpoint (Factor 2), SLD is described as a phenomenon that can be handled both outside and inside the school system. The intervention carried out outside the school is supposed to bring an atypical cognitive development back to typical development. Inside the school, intervention aims at changing didactic consolidated procedures, thus the SLD is conceived of as a phenomenon conflicting with a typical ideal learning modality. In sum, it is assumed that Specific Learning Disabilities affect the school, which is unable to handle them; this is demonstrated by the fact that such an atypical condition highlights both the heuristic nature of didactical procedures and the lack of competencies of the existing school system in approaching the SLD phenomenon.

Another significant aspect is that, among detected clusters, two out of five (cluster 2 and 5) consider SLDs from a subjective, intra-psychic and relational point of view, without recognizing the presence of atypical cognitive working processes. On the contrary, clusters 1 and 3 acknowledge only the organic nature of the impairment identifying the need for specific intervention carried out by professionals external to school, who aim at restoring a normality condition in which traditional didactical procedures can work. Only cluster 4 recognizes the bond between the atypical cognitive performance of SLD students and the inadequacy of the procedures supporting the existent didactic systems; on closer examination, the institutional educational system is thought to be unable to modify the procedures to support learning aims autonomously.

The third aspect concerns the differences in association among clusters and roles. According to a broad reading of data, no difference is highlighted in the distribution of identified clusters between parents and teachers; nevertheless, a more in-depth understanding is possible by examining SLD experience in teachers and parents. The lack of SLD experience in parents and teachers leads to thinking of SLDs as a school attitude (cluster 5), namely a commonplace by which the SLD represents an attitude of students towards the educational system. Alternatively, experienced parents and teachers have a different understanding of the phenomenon: experienced parents conceive the SLD mostly as a socio-affective attitude (cluster 2) or a rehabilitative problem (cluster 3). In other words, recognizing SLDs means involving parents in the rehabilitative interventions to restore a normality status (cluster 3); but parents also admit the atypical development and deny the role of the learning context in producing the difficulties (cluster 2). According to teachers, the knowledge of SLDs favors the association of SLD difficulties to learning contexts. Existing teaching procedures highlight the atypical cognitive development of SLD students; thus, new didactical methodologies need to be implemented to achieve learning goals.

6. Limits and Conclusions

The reported study highlights also some limits. In fact, being based on a convenient sample localized in a specific geographic area of Italy, results cannot be generalized, even though they shed light on the cultural approach of school actors towards SLDs. The analysis was designed to examine how culture regulates the representation of learning disorders and what meaning individuals ascribe to the role of the educational system in handling them.

Despite such limitations, these findings deserve attention for both their theoretical and practical implications. At a theoretical level, the study emphasizes the fact that subjective cultures, namely the way people position themselves within the cultural context, should be taken into account not only to promote formative intervention aimed at improving the educational procedures, but also to spread scientific knowledge among school actors.

At a practical level, data show how productive it could be to go beyond individualistic strategies of intervention and approach new strategies aimed at taking into account the relationship of actors with their socio-cultural context (Salvatore & Zittoun, 2011). These findings recognize SLDs as a didactic problem that needs to be handled through an in-depth focus on learning aims rather than on consolidated didactic procedures. Moreover, data suggest that diagnosis – regarded as the evidence of SLD experience – has a crucial role: it allows a change in both the cultural opinion of SLD among school actors and the conception of the didactic procedures. As suggested by Reid and Valle (2004), learning disorders represent a constellation of cognitive strengths and weaknesses that become a disability only in the context of the social expectations defined by the subjective culture, which regulates the perception of SLDs.

According to this perspective, this study does not intend to deny the role of an atypical development in some cognitive learning functions; it would rather suggest that such atypical development may become a disability in light of the difficulty of the school context to embrace new and different procedures aimed at favoring the achievement of learning goals.

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