

Representation of Culturally and Linguistically Diverse Students Among Students With Learning Disabilities: A Greek Paradigm

SAGE Open
January-March 2017: 1–10
© The Author(s) 2017
DOI: 10.1177/2158244016686150
journals.sagepub.com/home/sgo


Constantinos Vouyoukas¹, Maria Tzouriadou¹,
Eleni Anagnostopoulou¹, and Lito E. Michalopoulou²

Abstract

Ongoing research has demonstrated that culturally and linguistically diverse (CLD) students may be disproportionately represented among students with learning disabilities (LDs). The main aim of this research was to identify groups of CLD students at risk for LDs using the achievement criterion. To that end, 158 students participated in the current research: 78 Greeks and 80 Pontian Greeks from the former Soviet Union (Greek FSU-Pontian). Research findings indicated that the use of the achievement criterion alone is inadequate to accurately identify a student being at risk for LDs, given that CLD students' language competence and achievement are low mainly due to their bilingualism and that language acquisition competence is positively associated to language achievement. Professional judgments based on psychoeducational evaluation data are used to classify a student as having a LD. Professional judgment is presented as a possible explanation for the disproportionate representation of CLD students among students with LDs.

Keywords

learning disabilities, culturally and linguistically diverse students, language acquisition competence, language achievement, disproportionality

Culturally and Linguistically Diverse (CLD) Students and Learning Disabilities (LDs)

LDs are among the most researched developmental disorders, but it remains unclear what exactly a LD is and what causes it. This may explain the variety of definitions of LD (e.g., Individuals With Disabilities Education Improvement Act [IDEIA], 2004; Reid & Valle, 2004; Stanovich, 1994); the prevalence of LD among student populations internationally, fluctuating from 4% to 30% (Lambert & Sandoval, 1980; Sarkees-Wircenski & Scott, 2003; Shaywitz, Morris, & Shaywitz, 2008); and the disproportionate representation of CLD students in LD (Artiles, Kozleski, Trent, Osher, & Ortiz, 2010; Coutinho, Oswald, & Best, 2002; Morgan et al., 2015; Sullivan, 2011).

Most LD definitions do not include learning problems that are primarily the result of visual, hearing, or motor disabilities; of mental retardation; of emotional disturbance; or of environmental, cultural, or economic disadvantage (IDEIA, 2004). However, according to research data, disproportionate representation in LD occurs mainly in vulnerable social groups, such as those with low socioeconomic status

(SES) and CLD students (Coutinho & Oswald, 2005; Field, Jette, & Martin, 2006). Consequently, students from vulnerable social groups are being placed in special education, categorized as having LDs, intellectual disabilities, or behavioral-emotional disorders.

In the United States, during the school year 1998-1999, about 2.8 million CLD students aged 6 years to 21 years were diagnosed with LDs, slightly more than 50% of all students referred for disabilities and special needs (Coutinho et al., 2002). Moreover, in a nationally representative U.S. sample of high-school students, data indicated that CLD students were more likely to be identified as manifesting a LD (Shifrer, Muller, & Callahan, 2011). To note, among CLD students, the LD percentage rates increased whereas rates of students with intellectual disabilities decreased (Coutinho et al., 2002). A similar pattern was identified in the general

¹Aristotle University of Thessaloniki, Greece

²The Pennsylvania State University, University Park, PA, USA

Corresponding Author:

Constantinos Vouyoukas, Faculty of Education, University of Thessaloniki, Educational Tower, University Campus, Thessaloniki 54124, Greece.
Email: costasv@nured.auth.gr



student population with the rates of students identified as learning disabled increasing over the years (U.S. Department of Education, National Center for Education Statistics, 2000). According to the Office of Special Education Programs (2007), the numbers of students from vulnerable social groups placed in special education increased by 6% to 6.9% from 1993 to 2007.

Cummins (1996) associated CLD students' academic difficulties with their overrepresentation in special education. After the 1990s, research findings in the United States and European Union (EU) countries indicated that CLD students exhibited low language achievement and high rates of school dropout, and were classified in lower ability groups than native-speaking students (Luciak, 2004; Luciak & Binder, 2004; Organisation for Economic Co-Operation and Development [OECD], 2000; Ruiz-de-Velasco & Fix, 2000). In a synthesis of research findings, focused on Spanish-speaking students of low SES, language competence was positively associated with literacy along with a concomitant reduction in students' comprehension and writing skills (Genesee, Lindholm-Leary, Saunders, & Christian, 2005). Overrepresentation of these students in LD has puzzled experts because (a) students may be referred to special education in response to issues other than LDs, for instance, limited second language competence, and (b) the identification process may be inconsistent.

Other research findings, by contrast, indicate that CLD students are underrepresented in LD (Hibel, Farkas, & Morgan, 2010). This underrepresentation may be associated with lack of access to mental health services or fear of stigmatization (Zuckerman et al., 2014). Furthermore, research findings have indicated that minority students experience systematic victimization and prejudice that leads to their characterization as problematic and atypical (Hays, Prosek, & McLeod, 2010). Similar research findings are reported in Greece (Maniatis, Nikolaou, & Papadopoulos, 2009; Psalti & Konsantinou, 2007). According to recent research data (Morgan, Farkas, Hillemeier, & Maczuga, 2012), the percentages of CLD students with LDs are low in kindergarten and the first three primary school grades and increase from the fourth grade onward when educational demands become greater. Morgan et al. (2012) also claimed that the learning-cognitive profiles of CLD students and native-speaking students of low SES do not appear very different from each other, so that they equally likely to be considered at risk for developmental disorders. Under IDEIA (2004), the LD diagnosis should exclude social, economic, and cultural disadvantaged conditions, inadequate instructional opportunities, or limited language competence; however, some LD definitions include these conditions, possibly leading to disproportionate representation patterns (Algozzine & Ysseldyke, 1986; Fletcher, Denton, & Francis, 2005).

A common linking factor between CLD students and LDs is the type of language competence expected in schools. From the 1960s, it was noted that children from vulnerable

social groups—particularly low-SES and CLD children—underperform compared with their middle-class, White classmates. This was attributed to low-SES and CLD students' different—but not deficient—language skills, and to a mismatch between children's language skills and the type of language competence expected in schools (Hoff, 2013). Underperformance of low-SES and CLD children is also due to the distinction between limited language competence, and LD is not easily detected. In a research review, it was found that CLD students who had been identified with a LD by their school seemed to be experiencing learning difficulties for reasons other than disability (Wilkinson, Ortiz, Robertson, & Kushner, 2006). It is difficult to assess CLD students' language competence, which, if poor, can sometimes be interpreted as a sign of low ability, low school achievement, or LDs (Collier, 2011; Hoff, 2013). This may be attributed to the types of assessment tools used (Samson & Lesaux, 2009) and to LD diagnosis, which is not only based on measurements but also on judgments made by professionals (Waber, 2010). Additional social and demographic risk factors for a LD diagnosis for CLD students may include poverty and limited access to appropriate school education (Harry, Arnaiz, Klingner, & Sturges, 2008; Hays et al., 2010; Oswald, Coutinho, & Best, 2000).

As regards teachers' assessments on students for disability, Scott, Boynton Hauerwas, and Brown (2014) argued that the process for determining whether students' difficulties are due to second language acquisition is not well understood or applied by schoolteachers, especially as regards the implementation of Response to Intervention (RTI; Orosco & Klingner, 2010). Research findings from Greece indicate that to evaluate both Greek and CLD students for disability, schoolteachers mainly give emphasis on students' school achievement, which may not be considered as the most appropriate form of evaluation (Tzouriadou, Vouyoukas, Anagnostopoulou, & Menexes, in press).

LDs Assessment Models

Until 2004, three basic models were employed worldwide for LD diagnosis: the ability-achievement discrepancy model, the low achievement model, and the intraindividual discrepancy model. The classic model of LD diagnosis is the ability-achievement discrepancy model, which aligns with the archetypal notion of LD. Once a student is identified with low achievement without the primal interference of environmental factors (e.g., behavior, family, social), a specific degree of difference between intellectual ability and performance must be established to classify that student with LDs (Kavale, Kauffman, Bachmeier, & LeFever, 2008). This model has been criticized because it does not differentiate the group of students identified with LDs by the discrepancy model from the low achievers (Shinn, 2007). The low achievement model, in which any student unexpectedly performing below a certain threshold can be identified with

LDs, has also been widely criticized, mainly because it was associated with the tendency to overrepresentation of CLD students (Fletcher et al., 2005). It has also been criticized for not facilitating the identification of high ability students with LDs or average achievement (Giovingo, Proctor, & Prevatt, 2005). The intraindividual discrepancy model compares specific cognitive areas of individual students. It is based on the psychology of individual differences psychometric criteria and is mainly used by clinicians to apply prescribed interventions. An uneven student profile with strengths in some areas and weaknesses in other suggests a LD, whereas a flat profile is an indicator of expected underachievement. This model is also criticized for leading to overrepresentation patterns among CLD students in special education (Fletcher et al., 2005).

After 2004, in the United States, the model of RtI was included in the LD diagnostic process (Fuchs & Fuchs, 2006). RtI is a multitiered system of supports, according to which systematic evaluation and intensive individualized instruction are given to refer or not students to special education settings. RtI has been recommended for practitioners who are interested in minority over- or underrepresentation in special education as a viable method to assess minority students (Cohen, Burns, Riley-Tillman, & Hosp, 2015). However, this model also does not avoid the risk of CLD students' disproportionate representation in the numbers of learning disabled students (Orosco & Klingner, 2010).

The Greek Paradigm

Since the 1990s, Greece has become host to many CLD groups, both to immigrants and to repatriated Greeks. Most of the immigrants have arrived from Albania, and the vast majority of the repatriated Greeks have arrived from the former Soviet Union (Luciak, 2004). Most of the repatriated are Pontians, a group of ancient Greek origin mostly settled along the coast of the Black Sea, who migrated to the Russian Empire over the years of Ottoman domination where they continued to live through the 1990s (Chatzissavidis, 2012). The migration wave has been associated with sociopolitical changes in Eastern Europe, including the reformation of Soviet Union and the opening of borders to EU countries (Diamanti-Karanou, 2003). Like most immigrants and repatriated individuals around the world, immigrants and repatriated individuals in Greece face economic and social difficulties. Most immigrants are not competent in the Greek language and have not attended the Greek educational system.

The same applies to the Pontian Greeks from the former Soviet Union (Greek FSU-Pontian), as neither they nor their recent ancestors had lived in Greece. Immigrants and repatriated individuals in Greece are mostly unemployed or semiemployed, experience communication difficulties with the native speakers, and settle in underprivileged and low-SES areas (Kasimati, 1998; Markou, 1997). Like their parents, the

students from such backgrounds have insufficient knowledge of the Greek language, as they prefer speaking the language of the country of origin at home and to communicate mostly with their compatriot peers (Papastylianou, 1998). The languages Greek FSU-Pontian use to communicate on a daily basis are the Pontian dialect or/and the Russian language. The Pontian dialect is the language used by the Greek FSU-Pontian, which has been spoken in the region from ancient times through the 1920s and continues to be in use by the descendants of those residents mainly in Greece (Chatzissavidis, 2012). The Greek FSU-Pontian families use the Greek-Pontian dialect and the Russian language in their everyday communication, whereas in school their children speak Greek. In this way, the Greek FSU-Pontian children are both diglossic and bilingual, as they use a Greek dialect and Russian as primary languages, whereas Modern Greek is the language of formal education and is used for written and formal spoken purposes (Chatzissavidis, 2012; Nikolaou, 2011).

From 1994 onward, EU-funded research projects were developed to meet immigrant and repatriated students' educational and social needs in Greece. The main research projects developed between 1994 and 2013 were "Teacher Training Programs for Teaching Greek to Immigrant and Repatriated Students, 1994-1995"; "Integration of Repatriated and Foreign Students at Schools, 1997-2013"; and "Repatriated and Foreign Students in Greek Education, A & B 2003-2004." These research projects documented the immigrant and repatriated student population; identified their language, academic, and social needs; and set up various educational and teaching methods for meeting these needs. Data from these research projects formed the Greek policy that first introduced intercultural segregated schools (Law 2413, 1996) and more recently developed remedial Greek-language courses in general education settings for CLD students (Anastasiadi-Simeonidi, 2007).

According to the latest published statistics of the Greek Institute of Intercultural Education (Instituto Paideias Omogenon & Diapolitismikis Ekpaideusis [IPODE], 2010), from a total of 568,797 students attending primary schools in Greece, 10.25% were immigrants and 9.92% were repatriated, of whom 15.54% of immigrants and the 47.95% of the repatriated were in the Greek region of Central Macedonia, northern Greece. Similarly, half of the repatriated students were enrolled in schools in Central Macedonia. According to Kogkidou, Tressou-Milona, and Tsiakalos (1997), most repatriated families live in the western industrial and underprivileged city districts of Thessaloniki, the largest city of northern Greece and traditionally home to ethnic and religious minorities, such as Roma and Muslims. The rest are scattered around Greece. Despite the EU research projects, published empirical studies on CLD students in Greece are limited and are mainly related to their difficulties in school adaptation and participation (e.g., Motti-Stefanidi, Asendorpf, & Masten, 2012; Motti-Stefanidi, Pavlopoulos, Obradovic, & Masten, 2008; Psalti, 2000). For this reason, there are no

published records of CLD students' low achievement; primarily, there is no published research for those CLD students attending primary Greek education (Damanakis, 1997; Diakogeorgiou, 1994; Kessidou, 2008; Kogkidou et al., 1997). Nonempirical Greek studies have suggested that CLD students' school difficulties can be attributed to bilingualism and low parental expectations (Fillipardou, 1997), which may explain CLD students' high dropout rate from secondary education (Vakalios, 1999). Other empirical Greek studies have associated the difficulties CLD students encounter at school with their poor language competence, as well as low SES and poverty (Tzouriadou et al., 2007; Tzouriadou, Koutsou, Kidoniatou, Stagiopoulos, & Tzelepi, 2000). To date, no Greek research study has revealed any association between CLD students' low school achievement and LD classification. This may be attributed to an overgeneralization tendency in interpreting the Law of Special Education (Law 1566, 1985, Article 3), according to which bilingual students should not be classified as pupils with LDs because of their bilingualism. For the aforementioned reasons, in Greece, there are no available data on the possible disproportionate representation of CLD students in LDs.

Research Questions

To better understand the representation patterns among CLD students in the disability category of LDs, the following research questions are being addressed in this study:

Research Question 1: What are the differences between CLD students and their Greek counterparts in terms of language acquisition competence and language achievement, when provided with the same educational opportunities and belonging to the same SES background?

Research Question 2: What is the association between language acquisition competence and language achievement?

Method

Participants

The research sample included 239 students who, according to their teachers, had LDs, particularly in reading and writing. Students were in Grades 4 to 6 at public primary schools in underprivileged and low-SES neighborhoods in the western part of Thessaloniki. The standardized Greek version of Detroit Test of Learning Aptitude (DTLA-4; Hammill & Bryant, 2005; Tzouriadou, Anagnostopoulou, Toutountzi, & Psinos, 2008) was administered to these students, 45 of whom were shown to have a general learning aptitude quotient (GlearnAQ) of <70 with no intraindividual differences and considered at risk of intellectual disabilities (American Association on Intellectual and Developmental Disabilities [AAIDD], 2008). The other 194 students had a GlearnAQ of approximately 80, which is DTLA-4 benchmark for average

Table 1. Research Sample Description.

Students at risk for learning disabilities according to their teachers ($N = 235$)	n
At risk for intellectual disabilities	45
Other minorities	32
Study sample	158
Greeks	78
Pontian Greeks from the former Soviet Union	80

aptitude quotient (Hammill & Bryant, 2005; Tzouriadou, Anagnostopoulou, et al., 2008a). Out of the 194 students, 78 were Greek and 116 were CLD students. Among the CLD students, 36 were Albanians, Roma, or from other countries outside Greece, and 80 were Greek FSU-Pontian. Greek FSU-Pontian students were selected because they are the largest group of CLD students and, as mentioned above, they are mainly concentrated in the low-SES areas of Thessaloniki, northern Greece. Therefore, the study sample consisted of 158 students: 78 Greeks and 80 Greek FSU-Pontian. All participants were either born in Greece or had been in the Greek educational system for at least 4 years (Cummins, 1996; see Table 1).

Measures

DTLA-4. GlearnAQ was assessed by administering the Greek version of DTLA-4, which is standardized on the general Greek population, including CLD students, to children aged 8 years to 15 years 11 months. It consists of nine subtests, which provide a general learning acquisition composite and contrasting domain composite scores (Tzouriadou, Anagnostopoulou, et al., 2008). Language, attention, and manual dexterity tasks form verbal–nonverbal, attention enhanced–attention reduced, and motor enhanced–motor reduced composite scores. This particular test was chosen because the composite scores of verbal–nonverbal indicate signs of LD. This test holds evidence of content validity and construct validity, including convergent and divergent validity (Tzouriadou, Anagnostopoulou, et al., 2008). Internal consistency reliability coefficients range from .87 to .95 for the domain composites and are .98 for the overall composite (Tzouriadou, Anagnostopoulou, et al., 2008).

Λ - α -T- ω (Lato) Language Acquisition Competence Test. Greek language acquisition competence was assessed by administering the Λ - α -T- ω (Lato) Language Acquisition Competence Test, Level II (Tzouriadou, Sigkollitou, Anagnostopoulou, & Vakola, 2008). As there were no language psychometric tests for use in Greek, the Λ - α -T- ω was developed and standardized in the Greek language using a representative sample of Greek and CLD students. The Λ - α -T- ω is a language acquisition test that measures the acquisition process on two levels (Level I: 4 years to 7 years 11 months and Level II: 8 years to

15 years 11 months), in reception, organization, and expressive language, and provides composites in the three language modalities: conceptual, morphological, and phonological. Internal consistency reliability coefficients range from .82 to .86 for the domain composites and are .96 for the overall composite (Tzouriadou, Sigkollitou, et al., 2008). Evidence of content and construct validity, including convergent and divergent validity, has been demonstrated (Tzouriadou, Sigkollitou, et al., 2008). The size of the observed correlations between Λ - α -T- ω language acquisition composites and DTLA-4 domains revealed congruent validity (Tzouriadou, Anagnostopoulou, et al., 2008; Tzouriadou, Sigkollitou, et al., 2008).

Achievement testing. Students' language achievement was assessed with an informal test developed by schoolteachers according to the Greek language school curriculum for Grades 4 to 6 and measured the following language elements: story retelling, reading comprehension, grammar, syntax, vocabulary, and spelling (Cronbach's $\alpha = .84$). This test is used by schoolteachers to measure Greek and CLD students' language achievement. Objective scoring standards to assess language achievement were developed. A score of 100 was the maximum possible score for each language element. Language achievement element scores were converted to *t* scores to enable correlation compatibility with the standardized language acquisition composites of the Λ - α -T- ω Language Competence Test, Level II.

Procedure

For the data to be collected, written permission was obtained from students' parents prior to the assessment procedure. Data collection was initiated in February 2014 and was completed in May 2015. In the first stage, the DTLA-4 was administered to students to check for LDs. In the second stage, students who scored a GlearnAQ >80 then sat for the Λ - α -T- ω test. According to DTLA-4 and Λ - α -T- ω Level II, students who were considered to be at risk for LDs met two criteria: (a) an uneven DTLA-4 linguistic profile with a *SD* ± 3 between the higher nonverbal and lower verbal composites, and (b) a *SD* ± 15 between the higher GlearnAQ and the lower general language acquisition quotient (GLAQ; Tzouriadou, Anagnostopoulou, et al., 2008; Tzouriadou, Sigkollitou, et al., 2008).

Statistical Analysis

Mann-Whitney tests, after a significant omnibus Kruskal-Wallis test, were used to explore differences between Greek and Greek FSU-Pontian students at risk for LDs and Greek and Greek FSU-Pontian typically developed students on the GLAQ, the scores in language acquisition composites and modalities, the general language achievement (GLA) scores, and the language achievement domain scores.

Table 2. Study Sample Description.

GTD	GLD	Greek FSU-PontianTD	Greek FSU-PontianLD
53	25	49	31

Note. *n* = 158. GTD = Greek students typically developed; GLD = Greek students at risk for learning disabilities; Greek FSU-PontianTD = Pontian Greek students from the former Soviet Union typically developed; Greek FSU-PontianLD = Pontian Greek students from the former Soviet Union at risk for learning disabilities.

Spearman's rho correlation coefficients were used to evaluate the associations between GLAQ and the GLA in the study sample. To explore graphically the abovementioned associations, the Loess curve, the optimally fitted curve that best describes the relationship between the examined variables, was plotted on the corresponding scatterplots (Jacoby, 2000).

The observed significance level (*p* value) in all statistical hypothesis testing procedures was estimated by the Monte Carlo simulation method. This method leads to valid inferential conclusions, even in cases where the methodological pre-suppositions (random sampling, independent observations, symmetrical distributions and absence of outliers) of the nonparametric tests are not satisfied (Mehta & Patel, 1996).

Results

According to DTLA-4 and Λ - α -T- ω Level II, 56 students out of the 158 students in the study sample were considered at risk for LDs. Of these, 25 were Greeks and 31 were Greek FSU-Pontian. The remaining 102 students were considered typically developed without an uneven DTLA-4 linguistic profile (nonverbal-verbal) or differences between general learning acquisition quotient and GLAQ. Of these, 49 were Greeks and 31 were Greek FSU-Pontian (see Table 2). This finding highlights the increased danger of CLD and low-SES students' disproportionate representation in LDs (Artiles & Trent, 2000; Hibel et al., 2010; Limpos & Geva, 2001) and supports the view that the use of the achievement criterion alone is inadequate for identifying a student at risk for LDs (Fletcher et al., 2005; Giovingo et al., 2005).

Statistically significant differences were detected between Greek students at risk for LDs (GLD) and Pontian Greek students from the former Soviet Union at risk for LDs (Greek FSU-Pontian LD) in GLAQ (*p* < .015), in reception language composite (*p* < .002), in organization language composite (*p* < .046), and in morphological language modality (*p* < .008), the GLD group of students scoring more highly than the others (see Table 3). This finding can be attributed to CLD students' bilingualism. These students lack a deep understanding of the Greek language as compared with their Greek classmates of similar SES and educational opportunities. This deficit can be seen particularly in the differences found in the morphological language modality, which is associated with deep language structure (Chomsky, 1965). These differences may imply that

Table 3. Mean Differences Between Greek Students and Pontian Greek Students From the Former Soviet Union at Risk for LDs in GLAQ and Language Acquisition Composites and Modalities.

	GLAQ	L1	L2	L3	L4	L5
GLD (<i>n</i> = 25)						
M	93.52a	9.72a	9.40a	7.84a	7.96a	9.44a
SD	13.16	2.44	2.29	2.88	2.79	2.40
Greek FSU-PontianLD (<i>n</i> = 31)						
M	84.55b	7.45b	8.03b	6.77a	6.84a	7.48b
SD	11.96	2.74	2.33	2.28	2.08	2.63

Note. For each score, mean values followed by different letter are statistically significant different at $p < .05$ according to a series of Mann-Whitney tests. LDs = learning disabilities; GLAQ = general language acquisition quotient; L1 = reception; L2 = organization; L3 = expression; L4 = conceptual; L5 = morphological; GLD = Greek students at risk for LDs; Greek FSU-PontianLD = Greek Pontian students from the former Soviet Union at risk for LDs.

Table 4. Mean Differences Between Greek Students and Pontian Greek Students From the Former Soviet Union at Risk for LDs in GLA and Language Achievement Elements.

	GLA	SR	RC	GR	SY	VO	SP
GLD (<i>n</i> = 25)							
M	99.60a	99.56a	99.69a	100.33a	100.39a	100.14a	99.52a
SD	15.28	2.33	3.22	3.14	3.00	2.46	3.06
Greek FSU-PontianLD (<i>n</i> = 31)							
M	91.70b	99.36a	98.56a	98.46b	98.46b	99.33b	99.46a
SD	12.37	2.54	2.49	2.61	2.62	3.19	3.35

Note. For each score, mean values followed by different letter are statistically significant different at $p < .05$ according to a series of Mann-Whitney tests. GLA = general language achievement; SR = story retelling; RC = reading comprehension; GR = grammar; SY = syntax; VO = vocabulary; SP = spelling; GLD = Greek students at risk for learning disabilities; Greek FSU-PontianLD = Pontian Greek students from the former Soviet Union at risk for learning disabilities.

CLD students may have difficulties in acquiring the second language because the use of their first native language reduces their use of the second (Genesee et al., 2005).

Statistically significant differences were detected between GLD students and Greek FSU-PontianLD students in GLA ($p < .051$), in grammar ($p < .019$), in syntax ($p < .018$), and in vocabulary ($p < .034$), the GLD group of students scoring more highly than the others (see Table 4). This finding confirms other research findings indicating CLD students' lower school language achievement as compared with native speakers (Artiles & Trent, 2000; Coutinho et al., 2002). Also, CLD students' low vocabulary achievement is a strong indicator for their low language achievement (Genesee et al., 2005).

Statistically significant differences were detected between typically developed Greek students (GTD) and typically developed Pontian Greek students from the former Soviet Union (Greek FSU-PontianTD) in GLAQ ($p < .001$), in reception ($p < .001$), in organization ($p < .004$), in expression

Table 5. Mean Differences Between Greek Students and Pontian Greek Students From the Former Soviet Union Typically Developed in General Language Acquisition Quotient and Language Acquisition Composites and Modalities.

	GLAQ	L1	L2	L3	L4	L5
GTD (<i>n</i> = 53)						
M	102.4a	11.09a	11.06a	9.66a	9.51a	10.75a
SD	12.01	2.51	2.32	2.46	2.67	2.38
Greek FSU-PontianTD (<i>n</i> = 49)						
M	93.59b	9.41b	9.84b	8.10b	8.14b	9.10b
SD	11.10	2.55	2.14	2.34	2.34	2.49

Note: For each score, mean values followed by different letter are statistically significant different at $p < .05$ according to a series of Mann-Whitney tests. GLAQ = general language acquisition quotient; L1 = reception; L2 = organization; L3 = expression; L4 = conceptual; L5 = morphological; GTD = Greek students typically developed; Greek FSU-PontianTD = Pontian Greek students from the former Soviet Union typically developed.

Table 6. Mean Differences Between Greek Students and Pontian Greek Students From the Former Soviet Union Typically Developed in GLA and Language Achievement Elements.

	GLA	SR	RC	GR	SY	VO	SP
GTD (<i>n</i> = 53)							
M	106.73a	100.87a	101.17a	100.79a	101.13a	100.67a	100.70a
SD	15.28	3.55	3.02	3.13	2.92	3.39	2.59
Greek FSU-PontianTD (<i>n</i> = 49)							
M	98.19b	99.69a	99.85b	99.99a	99.55b	99.62a	99.82a
SD	13.14	2.78	2.75	2.68	2.87	2.59	3.09

Note. For each score, mean values followed by different letter are statistically significant different at $p < .05$ according to a series of Mann-Whitney tests. GLA = general language achievement; SR = story retelling; RC = reading comprehension; GR = grammar; SY = syntax; VO = vocabulary; SP = spelling; GTD = Greek students typically developed; Greek FSU-PontianTD = Pontian Greek students from the former Soviet Union typically developed.

($p < .001$), in conceptual ($p < .008$), and in morphological (another term used to describe students with a specific LD $< .001$), the GTD group of students scoring more highly than the others (see Table 5). This finding is consistent with other research findings indicating that CLD students' low language competence is often confused with their cognitive and learning abilities (Artiles, Rueda, Salazar, & Higareda, 2005; Capps et al., 2005; Kessidou, 2008).

Statistically significant differences were detected between GTD students and Greek FSU-PontianTD students in GLA ($p < .004$), in reading comprehension ($p < .027$), and in syntax ($p < .012$), the GTD group of students again scoring more highly than the others (see Table 6). This finding is in accordance with other research findings suggesting that CLD students' reading comprehension skills may be reduced owing to their small vocabulary, their limited opportunities for interactions with their peers among native speakers peers, and the use

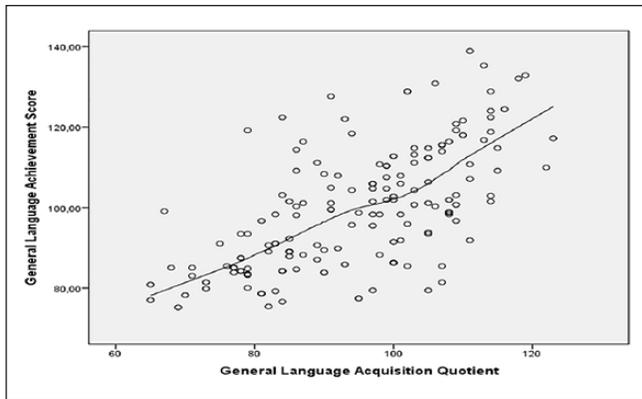


Figure 1. General language aptitude quotient and general language achievement correlation in all study sample students ($n = 158$).

of the second language at home, all of which are associated with slowed literacy development (Genesee et al., 2005; Hoff, 2013; Leze, 2000; Michalopoulou & Schaefer, 2015).

A strong and positive statistically significant correlation was detected ($r = .639, p = .000$) between GLAQ and GLA in all study sample students (see Figure 1). It seems that language acquisition competence is associated with language achievement. Other research evidence supports this finding (Samson & Lesaux, 2009; Wilkinson et al., 2006). In Greece, there is no other psychometric test that measures language acquisition competence, and Λ - α -T- ω test may be used to predict school language achievement.

Discussion

Teachers' judgments on CLD and low-SES students at risk for LDs based on the school achievement criterion were not accurate. School achievement is considered a social construct mainly concerning native-speaking, middle-class students (Peske & Haycock, 2006). School achievement is also based on teachers' subjective perceptions and knowledge, which are shaped by their teaching experience. For these reasons, and bearing in mind that in Greece there are no standardized achievement tests in use, it came as no surprise that the research sample included students at risk for intellectual disabilities. Moreover, as has already been mentioned, a LD diagnosis is based on judgments made by professionals, which often, but not exclusively, follow measurements (Waber, 2010).

To reduce the possibility of inconsistent and inaccurate judgments on LDs, given the unknown nature of its causes, researchers could use samples of participants with similar characteristics. This research study sample consisted entirely of students from low-SES areas who attended underprivileged schools with low educational opportunities. One group was bilingual and diglossic (Greek FSU-Pontian). Convenience sampling was used, in which students were selected to participate from available areas and populations.

Because of the small sample size, it is unclear whether the results can be generalized to the wider population. Still, this study can be considered for future research. The fact that all study sample students came from the same population may explain why both native and minority students had similar language and achievement profiles and why language competence and achievement differences between them could be assumed to be due to CLD students' bilingualism. The standardized Language Acquisition Competence Test (Lato) used in this research proved that it can be a prediction tool for language achievement, as strong and positive correlations were found between this test and the informal language achievement test.

Another research finding was that both native speakers and CLD students were identified as being at risk for LDs, with similar learning and language competence profiles. Nowadays, LD is best understood as a function of the developmental interaction between the child's inherent difficulties, whose causes are still unknown, and environmental factors (Waber, 2010). LD appears in the early developmental stages, with indications mostly found in language development, which comprises the basis of general learning competence. Special education legislation in Greece has aimed to reduce prejudices toward CLD students and, as already mentioned, thus excludes these students from being classified as learning disabled. In a recent Greek study, it was found that in-service schoolteachers believe that dyslexia—another term used to describe students with a specific LD—is not related to CLD students, whereas university students, who have more up-to-date theoretical knowledge, believe that CLD students can have dyslexia (Tzouriadou et al., in press).

Conclusion

Taking all these factors into account, it is impossible to state with certainty whether CLD students in Greece are disproportionately represented among students with LDs. This is a hindrance to tackling prejudice and victimization, because no suitable teaching practices are provided for CLD students in need. The remedial Greek language instruction applied with some groups of CLD students is not based on any evaluation of their needs, and it appears that second-generation CLD students (Greek FSU-Pontians) are underachievers at school (Kessidou, 2008). CLD students' integration from intercultural schools and classes into general Greek education was not based on evaluation of their language skills but was intended primarily to reduce prejudices toward cultural and language diversity. Further research is needed in larger samples of various CLD student populations in Greece to test the possibility that CLD students may have LDs, but not only on the basis of the achievement criterion. Accordingly, CLD students' evaluation for disability should focus on assessing their language acquisition. Furthermore, CLD students' education should concentrate on language subjects, being taught with special teaching methods.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

References

- Algozzine, B., & Ysseldyke, J. E. (1986). The future of the LD field: Screening and diagnosis. *Journal of Learning Disabilities, 19*, 394-398. doi:10.1177/002221948601900707
- American Association on Intellectual and Developmental Disabilities. (2008). *Definition of intellectual disability*. Washington, DC: Author. Retrieved from www.aaidd.org/intellectual-disability/definition#.Vr2obVLwit9
- Anastasiadi-Simeonidi, A. (2007). *Language support in classrooms with repatriated and immigrant students. Intercultural education and training material*. Thessaloniki, Greece: Aristotle University of Thessaloniki. (In Greek)
- Artiles, A. J., Kozleski, E. B., Trent, S. C., Osher, D., & Ortiz, A. (2010). Justifying and explaining disproportionality, 1968-2008: A critique of underlying views of culture. *Exceptional Children, 76*, 279-299. doi:10.1177/001440291007600303
- Artiles, A. J., Rueda, R., Salazar, J., & Higareda, I. (2005). Within-group diversity in minority disproportionate representation: English language learners in urban school districts. *Exceptional Children, 71*, 283-300. doi:10.1177/001440290507100305
- Artiles, A. J., & Trent, S. C. (2000). Representation of culturally/linguistically diverse students. In C. R. Reynolds & E. Fletcher-Jantzen (Eds.), *Encyclopedia of special education* (Vol. 1, 2nd ed., pp. 513-517). New York, NY: Wiley.
- Capps, R., Fix, M., Murray, J., Ost, J., Passel, J., & Herwatoro, S. (2005). *The new demography of America's schools: Immigration and the No Child Left Behind Act*. Washington, DC: Urban Institute.
- Chatzissavidis, S. (2012). The Pontian dialect: Its history and use in Greece today. In E. Gavras (Ed.), *Oi patriides toy Ellinismou. Pontos: Vol. 3. Social and spiritual life* (pp. 8-19). Athens, Greece: National Geographic.
- Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge, MA: The MIT Press.
- Cohen, D. R., Burns, M. K., Riley-Tillman, C., & Hosp, J. L. (2015). Are minority students under- or overrepresented in special education? *Communiqué, 44*, 22-23.
- Collier, V. (2011). *Seven steps to separating difference from disability*. Thousand Oaks, CA: Corwin Press.
- Coutinho, M. J., & Oswald, D. P. (2005). State variation in gender disproportionality in special education: Findings and recommendations. *Remedial & Special Education, 26*, 7-15. doi:10.1177/07419325050260010201
- Coutinho, M. J., Oswald, D. P., & Best, A. M. (2002). The influence of sociodemographics and gender on the disproportionate identification of minority students as having learning disabilities. *Remedial & Special Education, 23*, 49-59. doi:10.1177/074193250202300107
- Cummins, J. (1996). *Negotiating identities: Education for empowerment in a diverse society*. Los Angeles: California Association for Bilingual Education.
- Damanakis, M. (1997). *School education of repatriated and immigrant students in Greece*. Athens, Greece: Gutenberg. (In Greek).
- Diakogeorgiou, A. (1994, January). School re-integration of repatriated students. *Sigxrono Sxoleio, 21-22*, 140-143. (In Greek)
- Diamanti-Karanou, P. (2003). Migration of ethnic Greeks from the former Soviet Union to Greece, 1990-2000: Policy decisions and implications. *Southeast European and Black Sea Studies, 3*, 25-45. doi:10.1080/713999342
- Field, M. J., Jette, A. M., & Martin, L. (2006). *Workshop on disability in America: A new look—Summary and background papers*. Washington, DC: Institute of Medicine of the National Academies, The National Academies Press.
- Fillipardou, C. (1997). Teachers' opinions over bilingualism in primary schools of the city of Rhodes. In E. Skourtou (Ed.), *Issues of bilingualism and education* (pp. 179-187). Athens, Greece: Nisos. (In Greek)
- Fletcher, J. M., Denton, C., & Francis, D. J. (2005). Validity of alternative approaches for the identification of learning disabilities: Operationalizing unexpected underachievement. *Journal of Learning Disabilities, 38*, 545-552. doi:10.1177/00222194050380061101
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly, 41*, 93-99. doi:10.1598/RRQ.41.1.4
- Genesee, F., Lindholm-Leary, K., Saunders, W., & Christian, D. (2005). English language learners in U.S. schools: An overview of research findings. *Journal of Education for Students at Risk, 10*, 363-385. doi:10.1207/s15327671espr1004_2
- Giovingo, L., Proctor, B. E. K., & Prevatt, F. (2005). Use of grade-based norms versus age-based norms in psychoeducational assessment for a college population. *Journal of Learning Disabilities, 38*, 79-85. doi:10.1177/00222194050380010601
- Hammill, D. D., & Bryant, B. R. (2005). *Detroit Tests of Learning Aptitude—Primary* (3rd ed.). Austin, TX: Pro-Ed.
- Harry, B., Arnaiz, P., Klingner, J., & Sturges, K. (2008). Schooling and the construction of identity among minority students in Spain and the United States. *Journal of Special Education, 42*, 15-25. doi:10.1177/0022466907313605
- Hays, D. G., Prosek, E. A., & McLeod, A. L. (2010). A mixed methodological analysis of the role of culture in the clinical decision-making process. *Journal of Counseling, 88*, 114-121. doi:10.1002/j.1556-6678.2010.tb00158.x
- Hibel, J., Farkas, G., & Morgan, P. L. (2010). Who is placed into special education? *Sociology of Education, 83*, 312-332. doi:10.1177/0038040710383518
- Hoff, E. (2013). Interpreting the early language trajectories of children from low SES and language minority homes: Implications for closing achievement gaps. *Developmental Psychology, 49*, 4-14. doi:10.1037/a0027238
- Individuals With Disabilities Education Improvement Act, 20 U.S.C. Pub. L. No. 108-446, 118 Stat. 2647.
- IPODE. (2010). *Official report*. Athens, Greece: Greek Institute of Intercultural Education. (In Greek)
- Jacoby, W. (2000). Loess: A nonparametric, graphical tool for depicting relationships between variables. *Electoral Studies, 19*, 577-613. doi:10.1016/S0261-3794(99)00028-1
- Kasimati, K. (1998). Greek Pontians in Greece and social exclusion. In K. Kasimati (Ed.), *Social exclusion: The Greek experience* (pp. 275-305). Athens, Greece: Gutenberg. (In Greek)

- Kavale, K. A., Kauffman, J. M., Bachmeier, R. J., & LeFever, G. B. (2008). Response-to-intervention: Separating the rhetoric of self-congratulation from the reality of specific learning disability identification. *Learning Disability Quarterly, 31*, 135-150. doi:10.2307/25474644
- Kessidou, A. (2008). *Integration of repatriated and foreign children: Intercultural education and training material*. Thessaloniki, Greece: Lithograph. (In Greek)
- Kogkidou, D., Tressou-Milona, E., & Tsiakalos, G. (1997). Social exclusion and education: The case of language minorities in the West part of Thessaloniki. In E. Skourtou (Ed.), *Diglossia & education issues* (pp. 139-163). Athens, Greece: Nisos. (In Greek)
- Lambert, N. M., & Sandoval, J. (1980). The prevalence of learning disabilities in a sample of children considered hyperactive. *Journal of Abnormal Child Psychology, 8*, 33-50. doi:10.1007/BF00918160
- Law 1566. (1985). *Structure and organization of primary and secondary education* (Article 3). Athens, Greece: Greek Ministry of Education. (In Greek)
- Law 2413. (1996). *Organisation and operation of intercultural schools*. Athens, Greece: Greek Ministry of Education. (In Greek)
- Leze, E. (2000). *The attitude of Pontic—Greek reimmigrant adolescents from former Soviet Union towards Greek language* (Unpublished doctoral dissertation). National and Kapodistrian University of Athens, Greece.
- Limpos, M., & Geva, E. (2001). Accuracy of teacher assessments of second-language students at risk for reading disability. *Journal of Learning Disabilities, 34*, 137-151. doi:10.1177/002221940103400204
- Luciak, M. (2004). *Migrants, minorities and education: Documenting discrimination and integration in 15 member states of the European Union*. Vienna, Austria: European Monitoring Center on Racism and Xenophobia.
- Luciak, M., & Binder, S. (2004). *Comparison of the reports on national strategies for minority schooling prepared by the national focal points of the Central and Eastern European Candidate Countries*. Vienna, Austria: European Monitoring Center on Racism and Xenophobia.
- Maniatis, P., Nikolaou, G., & Papadopoulos, B. (2009). School violence and heterogeneity in Greece. The necessity of multicultural education. *Mentoras, 12*, 118-138. (In Greek)
- Markou, G. (1997). *Intercultural education and teachers' training*. Athens, Greece: Kentro Diapolitismikis Agogis (In Greek).
- Mehta, C., & Patel, R. (1996). *SPSS exact tests 7.0 for Windows*. Chicago, IL: Statistical Package for the Social Sciences.
- Michalopoulou, L. E., & Schaefer, B. A. (2015). Reading comprehension among Pontian Greek students from the former Soviet Union during upper elementary years. *Arizona Working Papers in SLA & Teaching, 22*, 47-61.
- Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2012). Are minority children disproportionately represented in early intervention and early childhood special education? *Educational Researcher, 41*, 339-351. doi:10.3102/0013189X12459678
- Morgan, P. L., Farkas, G., Hillemeier, M. M., Mattison, R., Maczuga, S., Li, H., & Cook, M. (2015). Minorities are disproportionately underrepresented in special education: Longitudinal evidence across five disability conditions. *Educational Researcher, 44*, 278-292. doi:10.3102/0013189X15591157
- Motti-Stefanidi, F., Asendorpf, J. B., & Masten, A. S. (2012). The adaptation and well-being of adolescent immigrants in Greek schools; a multilevel, longitudinal study of risks and resources. *Development and Psychopathology, 24*, 451-473. doi:10.1017/S0954579412000090
- Motti-Stefanidi, F., Pavlopoulos, V., Obradovic, J., & Masten, A. S. (2008). Acculturation and adaptation of immigrant adolescents in Greek urban schools. *International Journal of Psychology, 43*, 45-58. doi:10.1080/00207590701804412
- Nikolaou, G. (2011). *Integration and education of immigrant students in primary schools*. Athens, Greece: Pedio. (In Greek)
- Office of Special Education Programs. (2007). *History: Twenty-five years of progress in educating children with disabilities through IDEIA*. Washington, DC: Office of Special Education Programs & Office of Special Education and Rehabilitative Services, U.S. Department of Education.
- Organisation for Economic Co-Operation and Development. (2000). *Knowledge and skills for life: First results from the OECD Programme for International Student Assessment (PISA)-2000*. Author. Retrieved from <http://www.oecd.org/fr/edu/scolaire/programmeinternationalpourlesuividesacquisdeselevespisa/knowledgeandskillsforlifefirstresultsfrompisa2000-publications2000.htm>
- Orosco, M., & Klingner, J. (2010). One school's implementation of RtI with English language learners: Referring into RtI. *Journal of Learning Disabilities, 43*, 269-288. doi:10.1177/0022219409355474
- Oswald, D. P., Coutinho, M. J., & Best, A. M. (2002). Community and school predictors of overrepresentation of minority children in special education. In D. J. Losen & Orfield, G. (Eds.), *Racial inequality in special education* (pp. 1-15). Cambridge, MA: Harvard University Press.
- Oviedo, M. D., & Gonzalez, V. (1999). Standardized and alternative assessments: Diagnosis accuracy in minority children referred for special education assessment. In V. Gonzalez (Ed.), *Language and cognitive development in second language learning: Educational implications for children and adults* (pp. 227-268). Boston, MA: Allyn & Bacon.
- Papastylianou, A. (1998). School dropout of repatriated students in Greece: Elements and dimensions of the problem. In P. Papatheofilou & A. Vosniadou (Eds.), *School dropout: Causes, impacts, trends* (pp. 207-232). Athens, Greece: Gutenberg. (In Greek)
- Peske, H., & Haycock, K. (2006). *Teaching inequality: How poor and minority students are shortchanged on teacher quality: A report and recommendations by the Education Trust*. Washington: DC: Education Trust.
- Psalti, A. (2000). *Students from the former Soviet Union and Albania in Greek Schools: Attitudes, needs, expectations* (Unpublished doctoral thesis). Aristotle University of Thessaloniki, Faculty of Philosophy, Department of Psychology, Thessaloniki, Greece. (In Greek)
- Psalti, A., & Konsantinou, K. (2007). Bullying in secondary schools: Gender and culture effects. *Psychology, 14*, 329-345. (In Greek)
- Reid, D. K., & Valle, J. W. (2004). The discursive practice of learning disability: Implications for instruction and parent-school relations. *Journal of Learning Disabilities, 37*, 466-481. doi:10.1177/00222194040370060101

- Ruiz-de-Velasco, J., & Fix, M. (2000). *Overlooked & underserved: Immigrant students in U.S. secondary schools*. Washington, DC: The Urban Institute.
- Samson, J. F., & Lesaux, N. K. (2009). Language-minority learners in special education: Rates and predictors of identification for services. *Journal of Learning Disabilities, 42*, 148-162. doi:10.1177/0022219408326221
- Sarkees-Wircenski, M., & Scott, J. L. (2003). *Special populations in career and technical education*. Homewood, IL: American Technical Publishers.
- Scott, A. N., Boynton Hauerwas, L., & Brown, R. D. (2014). State policy and guidance for identifying learning disabilities in culturally and linguistically diverse students. *Learning Disability Quarterly, 37*, 172-185. doi:10.1177/0731948713507261
- Shaywitz, S. E., Morris, R., & Shaywitz, B. A. (2008). The education of dyslexic children from childhood to young adulthood. *Annual Review of Psychology, 59*, 451-475. doi:10.1146/annurev.psych.59.103006.093633
- Shiffrer, D., Muller, C., & Callahan, R. (2011). Disproportionality and learning disabilities: Parsing apart race, socioeconomic status, and language. *Journal of Learning Disabilities, 44*, 246-257. doi:10.1177/0022219410374236
- Shinn, M. R. (2007). Identifying students at risk, monitoring performance, and determining Eligibility within response to intervention: Research on educational need and benefit from academic intervention. *School Psychology Review, 36*, 601-617.
- Stanovich, K. E. (1994). Annotation: Does dyslexia exist? *Journal of Child Psychology and Psychiatry, 35*, 579-595. doi:10.1111/j.1469-7610.1994.tb01208.x
- Sullivan, A. L. (2011). Disproportionality in special education identification and placement of English language learners. *Exceptional Children, 77*, 317-334. doi:10.1177/001440291107700304
- Tzouriadou, M., Anagnostopoulou, E., Toutountzi, E., & Psoinou, M. (2008). "Detroit test," *Detroit Test of Learning Aptitude (DTLA, DTLA-P: 3, DTLA-4)*. Thessaloniki, Greece: Aristotle University of Thessaloniki, Ministry of Greek Education. (In Greek)
- Tzouriadou, M., Barbas, G., Anagnostopoulou, E., Anagnostou, Z., Antifakou, K., & Chatzigeorgiadou, S. (2007). Learning difficulties of language and cultural minority children: An evaluative approach. In S. Vosniadou, D. Kayser, & A. Protopappas (Eds.), *Proceedings of the European Cognitive Science Conference* (pp. 574-579). Delphi, Greece: Hellenic Cognitive Science Society.
- Tzouriadou, M., Koutsou, S., Kidoniadou, E., Stagiopoulos, P., & Tzelepi, T. (2000). Language minority children: Inferior or different? In A. Kypriotakis (Ed.) *Proceedings of Special Education Conference* (pp. 557-565). Rethmno, Greece: Department of Primary Education (In Greek).
- Tzouriadou, M., Sigkollitou, E., Anagnostopoulou, E., & Vakola, I. (2008). *Psychometric criterion of language acquisition competence A-a-T-w (Lato)*. Thessaloniki, Greece: Aristotle University of Thessaloniki, Ministry of Greek Education. (In Greek)
- Tzouriadou, M., Vouyoukas, C., Anagnostopoulou, E., & Menexes, G. (in press). Teachers' knowledge and opinions over dyslexia. *Scientific Annals School of Psychology, 11*. (In Greek)
- U.S. Department of Education, National Center for Education Statistics. (2000). *The condition of education 2000* (NCES 2000-062). Washington, DC: U.S. Government Printing Office.
- Vakalios, A. (1999). *Repatriation and integration*. Athens, Greece: Paratiritis. (In Greek)
- Waber, D. P. (2010). *Rethinking learning disabilities: Understanding children who struggle in school*. New York, NY: Guilford Press.
- Wilkinson, C. Y., Ortiz, A. A., Robertson, P. M., & Kushner, M. I. (2006). English language learners with reading-related LD: Linking data from multiple sources to make eligibility determinations. *Journal of Learning Disabilities, 39*, 129-141. doi:10.1177/00222194060390020201
- Zuckerman, K. E., Sinche, B., Mejia, A., Cobian, M., Becker, T., & Nicolaidis, C. (2014). Latino parents' perspectives on barriers to autism diagnosis. *Academic Pediatrics, 14*, 301-308. doi:10.1016/j.acap.2013.12.004

Author Biographies

Constantinos Vouyoukas is an assistant professor at the Faculty of Preschool Education Sciences, Department of Psychology and Special Education, Aristotle University of Thessaloniki.

Maria Tzouriadou is a professor emerita at the Faculty of Preschool Education Sciences, Department of Psychology and Special Education, Aristotle University of Thessaloniki.

Eleni Anagnostopoulou is a practicing special educator specializing in learning disabilities and early intervention.

Lito E. Michalopoulou, Med, is a doctoral candidate in School Psychology at the Pennsylvania State University.