

2025 • Volume 30 • Number 2

Learning Disabilities

A Multidisciplinary Journal



LDA
Learning Disabilities
Association of America

Learning Disabilities: A Multidisciplinary Journal (Print ISSN: 0031-8981, Online ISSN: 2160-1682) is a publication of LDA, the Learning Disabilities Association of America. Copyright ©2025 LDA, Learning Disabilities Association and Sagamore–Venture. ***Learning Disabilities: A Multidisciplinary Journal*** is published biannually by Sagamore–Venture, 3611 N. Staley Rd., Ste. B, Champaign, IL 61822. To order, please call 217-359-5940 or go to www.sagamorepub.com



Learning Disabilities Association of America

4156 Library Road
Pittsburgh, PA 15234-1349
1-888-300-6710
www.ldaamerica.org

Sagamore–Venture

3611 N. Staley Rd., Ste. B
Champaign, IL 61822
www.sagamorepub.com

Print ISSN: 1046-6819 | Online ISSN: 2374-7846

Biannual publication

	Online
Ind	\$130.00
Ind (Int'l)	\$130.00
Inst.	\$400.00
Inst (Int'l)	\$400.00

LDA member: \$76.00

COPYRIGHT PERMISSIONS

All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form, including electronic, photocopying, recording, or by any information storage and retrieval system, without written permission from the copyright owner.

This publication is designed to provide accurate and authoritative information regarding the subject matter covered.

Learning Disabilities

A Multidisciplinary Journal

Interim Editor

Joseph Morgan

University of Nevada, Las Vegas

Editorial Board

Kate Esposito
Virginia Berninger
H. Lee Swanson
Charles Hughes
Michael Rosenberg
Joseph Madaus
Alba Ortiz
Paul Gerber
Doris Johnson

Sam Goldstein
Lisa Dieker
Kristen Stang
Joseph Gagnon
Nancy Mather
Steven Gilbert
Richard Lavoie
Jerome Schultz
Larry Silver

Learning Disabilities

A Multidisciplinary Journal

Contents

Editor's Note.....	vii
 When Resources Are Not Enough: Parental Struggles and Sacrifices in Advocating for Children with Reading Disabilities	
Jaclyn Galbally, Mary E. Sheppard, and Katharine Mayer	1
 Twice Othered: Results of a Latent Content Analysis Exploring Cultural Responsiveness and Learning Disabilities	
Eric Shyman.....	15
 Learning Strategies, Motivation, and Test Anxiety among Students with Specific Learning Disabilities, ADHD, and Typical Comparison	
Jiyeon Lee	26
 Investigation of the Conceptual Knowledge of Students With and At Risk of Learning Disabilities on Entrepreneurial Business Ideas in Their Rural Areas of Residence	
Tufan İnaltekin, Arzu Kirman Bilgin, Devrim Erginsoy Osmanoğlu, Şenay Özen Altınkaynak, and Selma Erdağı.....	35
 Editorial Policy/Author Guidelines	48

Editor's Note

Onward,

Joseph John Morgan

Interim Editor

University of Nevada, Las Vegas

When Resources Are Not Enough: Parental Struggles and Sacrifices in Advocating for Children with Reading Disabilities

Jaclyn Galbally
Mary E. Sheppard
Katharine Mayer

Despite an uptick in legislative efforts to improve reading achievement, many students continue to fall below grade-level expectations. It has been widely assumed that families with higher socioeconomic status are advantaged in navigating the complex special education identification and service provision processes, specifically for language and reading disabilities. As a result of this perception, the experiences of upper SES families advocating for supports for their children have been largely ignored in the United States. This pilot study examined the experiences of 48 educated, upper SES parents who sought support for their child(ren)'s reading disabilities. Parents completed online surveys to report on their child(ren)'s identification, evaluation, and educational programming. Results indicated that few children received timely and effective interventions, despite parents expressing concerns early in their child's development. Parents also reported that, when provided evaluation reports and educational programming were unsatisfactory. The parent-school relationship significantly degraded throughout the referral process, with parents expressing distrust in the school's ability to meet their child(ren)'s needs. As a result, many parents resorted to expensive external supports, including independent evaluations and specialized tutoring. This process led to increased parental anxiety, financial burden, and marital discord. The study highlights the challenges faced by parents, who are widely assumed to have optimal resources for advocacy, demonstrating that substantial societal and financial capital does not guarantee effective support for their children's reading needs. It also raises questions about school models that rely on external family support.

Keywords: *Identification, parent advocacy, reading difficulties, reading disabilities*

Despite the assumption that well-resourced families navigate special education successfully, emerging evidence suggests that these families encounter obstacles and experience adverse procedural outcomes (Nevill et al., 2023). The process of obtaining appropriate identification and intervention for reading disabilities has been characterized as a "Rich Man's Game" (Hanford, 2017; Smith & Topple, n.d.). While the experiences of upper SES families with these resources have not been studied in the United States, international studies suggest a "rich paradox" in which even well-resourced families encounter significant barriers in securing appropriate identification and evidence-based interventions for reading difficulties (Leslie et al., 2025; Nevill et al., 2023).

Studies have reported that parents from dominant sociocultural backgrounds, such as white, middle socioeconomic status and educated, are more likely to be satisfied with services and report better outcomes when compared to marginalized sociocultural backgrounds

included people of color, low income class and low educated (Hebbeler et al., 2007). Parents from economic, cultural and social capital facilitate parents ability to utilize both tangible and intangible resources that families from lower socioeconomic backgrounds are unlikely to have access to (Batz & Yadav, 2024). However, parents from across sociocultural backgrounds report difficulties navigating services, and often feel as though they need to pay out of pocket for services needed (Batz & Yadav, 2024). The focus of this study, on the experiences of families from upper SES backgrounds, emphasizes the role of family capacity, while still examining the systemic challenges evident when resource-rich families encounter difficulties. Recognizing how systems address families with advocacy advantages helps clarify whether persistent challenges stem from structural barriers or family-level issues. Understanding the experiences of upper SES families can serve a dual purpose: addressing the needs of this understudied population within the American context while identifying

system-level dynamics that influence the experiences of all families navigating special education. The barriers to access and supports among families with considerable advocacy advantages suggests institutional challenges that extend beyond what resource provision can address.

When families possessing substantial social, financial, and navigational capital continue to encounter significant procedural barriers, these outcomes suggest fundamental structural inadequacies within educational systems that resource-focused interventions cannot adequately address. These structural barriers likely affect all families, but may be obscured when lower-resource families are unable to sustain advocacy efforts. The persistence of upper SES families in advocacy may reveal systemic barriers that would otherwise remain hidden.

Finally, the reliance on families with substantial resources to supplement school services through private supports creates a dynamic that may reduce pressure for systemic improvement. When schools anticipate this, well-resourced families will seek independent evaluations and tutoring, which may diminish institutional incentives to strengthen services. Understanding this dynamic is important for developing interventions that address systemic challenges rather than individual resource gaps.

Reading Disabilities

Reading disabilities account for approximately 75% of all students classified with Specific Learning Disabilities (SLD) under IDEA, representing a significant portion of special education services (NCES, 2023). The definition and operationalization of dyslexia remain inconsistent across federal and diagnostic frameworks (e.g., IDEA, DSM-5), which complicates identification and contributes to bias in the referral and diagnosis process (Nation & Snowling, 1998; Shaywitz & Shaywitz, 2020). The most recent federal definition, codified in the First Step Act (P.L. 115-391, 2018), defines dyslexia as an unexpected difficulty in reading and spelling, despite average intelligence, typically linked to phonological processing deficits.

Estimates of dyslexia prevalence range from 5% to 17%. Its multifactorial nature, involving neurological, behavioral, and environmental influences, adds complexity to identification and remediation (van Bergen et al., 2014).

Historically, learning disabilities have been identified using a discrepancy formula (Vaughn & Fletcher, 2021) that qualified students based on a “severe discrepancy between the achievement and intellectual ability” (U.S. Office of Education, 1977, p. G1082). This approach, often referred to as “Wait to Fail,” has faced increasing criticism due to concerns about its reliability, validity, and infrequent identification of younger students in kindergarten and first grade. In response, many states have moved to Response to

Intervention, a multitiered process that includes universal screening with increasingly intensive interventions prior to identification. However, delays in identification remain persistent (Ozernov-Palchik & Gaab, 2016; Sansavini et al., 2021). Given the persistence of this challenge, it is imperative to enhance literacy education and support mechanisms to ensure that all individuals have the requisite skills to thrive in our current society.

Identification Challenges

Historically, dyslexia identification relied on the “discrepancy model,” which required a gap between an individual's IQ and their achievement (U.S. Office of Education, 1977). States implemented this model with inconsistent criteria, often requiring a 1-2 SD discrepancy (Ozernov-Palchik et al., 2017). This approach has long been criticized for poor validity and reliability, and, most importantly, its tendency to delay identification until failure is well established (Francis et al., 2005; Shaywitz et al., 1992). This “wait-to-fail” model delays diagnosis until second grade or later, missing the window when interventions are most effective, typically kindergarten or first grade (Ozernov-Palchik & Gaab, 2016; Stanley et al., 2018; Wanzek et al., 2018).

Early intervention has a substantial impact: students who are behind by age 9 rarely catch up, and continue to experience reduced vocabulary growth and knowledge acquisition (Quinn et al., 2020; Shaywitz et al., 1999). In response to these findings, the 2004 reauthorization of IDEA prohibited reliance on IQ-achievement discrepancy and promoted the use of Response to Intervention (RTI) models.

Parent Involvement and Accessing Supports

Federal law, IDEA (IDEA, 2004), mandates that states provide all children with a Free and Appropriate Public Education (FAPE). Mandates within the law include “Child Find,” where the Local Educational Agency (LEA) is responsible for identifying, locating, and evaluating children with disabilities (IDEA, 2004; Sec. 300.111). If children are found eligible to receive services, the LEA must develop individualized education programs (IEPs) and educate those children in the least restrictive environment (LRE).

Protections ensuring parental participation are an integral part of IDEA. Parents are acknowledged as child-specific experts who can contribute to the IEP development for the child (Buss, 2002). While educational professionals in public schools remain the primary education experts, IDEA mandates a team-based approach in which educational professionals and parents collaborate to determine the best course of action for the unique needs of each child.

Federal law acknowledges the diversity of students in special education as well as the resulting complexities of mandating one-size-fits-all substantive requirements. As a result, legislation attempted to provide comprehensive procedural protections for parents and students. These protections are intended to provide FAPE to all students regardless of the heterogeneity of their individual needs (Thomason, 2007). The procedural protections include parental notification, easily understandable language, and the opportunity to meaningfully participate in all phases of the identification, evaluation, and educational placement of their child. Furthermore, parents are provided with three successive avenues of recourse when disagreements arise, which include mediation, filing a complaint, and, if the submitted complaint complies with the notification and form requirements, they may pursue due process.

Many disputes between parents and school districts arise when there is a conflict over FAPE (Karanhya & Zirkle, 2014), specifically the interpretation of “appropriate.” (Education For All Handicapped Children [EHA], 1975). FAPE requires that education be provided to all students at public expense, mandates that states implement individualized education programs (IEPs), and requires states to adhere to state-specific educational standards. However, ambiguity and disagreement persist regarding what constitutes an “appropriate” program. As a result, some have argued that procedural protections in federal law have been reduced to “mere empty ritual for all but the most educated and wealthy” (Kotler, 1994, as cited in Phillips, 2008).

While parental involvement has always been a central component of FAPE, parents continue to face challenges in exercising their rights to equal partnership. Though experiences of parents of children with other disability categories or of preschool ages are well-documented (e.g., Burke & Hodapp, 2016), literature on parent perspectives of students with language and literacy disabilities is comparatively sparse. Research indicates that parents frequently identify concerns about their child’s language and literacy development during preschool or kindergarten years (Denton et al., 2022). These concerns often center on foundational literacy skills, including phonemic awareness, letter naming, and rapid automatized naming (Ziegler et al., 2010). When communicating these concerns, parents often report dismissal by schools and face long wait times for evaluations, resorting to independent assessments that require financial expenditure or travel. Post-diagnosis, parents often feel obligated to become “de facto advocates” (Phillips, 2008; p. 1838). This process exerts a significant emotional toll, particularly on mothers, who report feelings of guilt and anxiety over their child’s future (Nevill

et al., 2023). Parental education and financial resources have been identified as protective factors for reading achievement. However, families that do possess substantial social, financial, and advocacy capital may still face adverse outcomes when advocating for their children (Nevill et al., 2023). By relying on parental affordances to meet their children’s needs, systemic inequities will continue to persist for marginalized students.

Despite a strong national push to improve early reading outcomes, policy efforts have yielded uneven results. The effectiveness of current identification systems varies based on district implementation of state guidelines and personnel availability, contributing to identification delays and inconsistent service delivery (NCIL, 2023; Gearin et al., 2022). The result is a persistent failure to close literacy gaps, even for families with high levels of education, access, and advocacy skills.

Notably, little empirical work has explored the barriers faced by these highly educated, upper socioeconomic status (SES) families, who are typically presumed to have the resources to navigate early intervention systems effectively. However, emerging evidence from advocacy organizations and families suggests that even well-resourced families face challenges in accessing timely and appropriate literacy screening and support. This evidence raises an important question: if families with substantial resources struggle to access effective early identification and intervention, what does this reveal about systemic barriers affecting all families? Given the limited understanding of how well-resourced families navigate reading disability identification, this study examined the experiences of educated, upper SES parents to determine whether financial and social capital facilitate positive outcomes, or whether institutional barriers persist regardless of family resources.

Setting

This study was conducted as part of a larger program evaluation of a community-based organization, Everyone Reads PA (ERPA). The organization is a grassroots, community-based nonprofit organization founded by educators and parents frustrated by the lack of access to evidence-based literacy instruction in public schools. ERPA adopts a “one child at a time” (<https://www.pareads.org/>) approach, aiming to address individual needs in hopes that families and educators serving these children will advocate for systemic change. Parents who utilized any of ERPA’s services were invited to participate in the study.

Research Questions

1. What are parents’ experiences with early identification and intervention for reading difficulties?

2. How do parents perceive the evaluation and IEP processes for their child(ren) with reading disabilities?
3. What additional supports do parents seek outside of school-provided services?
4. How does the process of advocating for children with reading disabilities impact family dynamics and relationships with schools?

Methodology

This pilot study employed a cross-sectional descriptive survey design with retrospective longitudinal elements, using purposive sampling to explore parental experiences navigating reading disability services. The study employed a mixed-methods data collection approach, primarily quantitative with qualitative components. A key analytic feature included a paired samples t-test comparing parents' perceptions of their relationship with schools before and after participating in the IEP process, providing longitudinal insight into changes in relationship quality over time.

The Survey Tool

This survey was developed as part of a program evaluation by the first and third authors and piloted with 11 respondents. The survey was online (on the Qualtrics platform). The survey consisted of the following sections: 1) demographic variables; 2) interaction with Everyone Reads PA Organization; 3) Identifying respondents with child(ren) having language or literacy concerns, including the number of affected child(ren); 4a) Parent experience of identification & evaluation 4b) IEP development, process, and satisfaction with outcomes 5) home and school communication throughout the special education identification process 6) impact of reading disability on family dynamics and relationship with school and additional supports parents provide outside of school based services. Question formats included dichotomous, numerical response, multiple-choice, multiple-answer, four-point, and 5-point Likert scale questions.

Examples of questions included:

- How many children do you have language or literacy concerns for? (Numerical Response)
- When did your concerns over your child's language or literacy development begin? (Multiple Choice)
- Which of the following did your family experience during the process of learning about your child(ren)'s reading struggles and how to support those struggles? (Multiple Answer).
- Please indicate your level of satisfaction with the following statement: I trust the school to meet the needs of (Child 1)'s literacy development (5-point Likert Scale).

Branching, skip, and display logic and looping were utilized to display questions that were relevant to the response patterns for each respondent and child for whom they were reporting information. Several of the questions also included an "other" option, allowing participants to write in additional responses not included in the provided options.

Participants

We utilized purposive sampling (Palinkas, 2015) to ensure that participants had direct knowledge about the topic. We recruited participants through Everyone Reads PA (ERPA), a community-based organization dedicated to supporting families with children experiencing reading difficulties. Inclusion criteria required participants to be parents of children perceived as struggling with reading acquisition or mastery. Data were collected at the child level, resulting in 70 total child records from 48 families. Families with multiple children ($n = 18$) who have language and literacy concerns provided separate responses for each affected child. While all 48 families reported concerns about reading, not all proceeded through the complete special education process. Thirty-eight families (79%) completed the referral and evaluation process, resulting in special education classification for their children. At the child level, 49 of the 70 total children (70%) received IEP classification and services.

All 48 participants resided in suburban school districts adjacent to a significant urban center. They were predominantly white (89.9%), married or in a domestic partnership (93.9%), college-educated or higher (100%), females (95.9%), and from households with incomes over \$100,000 (94%). Detailed demographic information, including education level, income range, and racial/ethnic background, is presented in Table 1. Twenty-seven respondents (61.4%) had one child with language and literacy concerns, twelve (27.3%) had two children, and five respondents (11.4%) had three children with language and literacy concerns.

Data Collection

The study received approval from the Institutional Review Board (IRB) prior to data collection. The recruitment process spanned 18 months, from February 2021 through August 2023.

Participants were recruited via email through ERPA's MailChimp distribution list and follow-up invitations after ERPA presentations. Eligible individuals were those who had opted to receive ERPA correspondence. Participation was voluntary, and all participant data were de-identified to maintain confidentiality.

Table 1
Demographic Characteristics

Respondent Characteristic	Parent Caregiver Respondents	
	<i>n</i>	%
Gender		
Female	46	95.8
Male	2	4.2
Age		
35 and under	3	6.2
36-40	9	18.8
41-45	23	47.9
46-50	7	14.6
51+	6	12.5
Highest Level of Education		
Bachelor's Degree	24	48.9
Master's Degree	18	38.7
Professional and Doctoral Degree	6	12.2
Marital Status		
Single/Unpartnered	1	2.1
Married/Domestic Partnership	45	93.8
Widowed or divorced	2	4.2
Employment Status		
Full Time (40 hours or more)	19	39.6
Part Time (39 hours or less)	6	12.5
Homemaker	17	35.4
Other	6	12.2
Median Household Income		
Under \$100,000	4	8.3
\$100,000-\$189,000	14	29.1
\$190,000-\$249,000	8	16.6
\$250,000 and above	22	45.8
Ethnic Origin ^a		
White (non-Hispanic)	43	89.6
Black or African American	2	4.2
Other	2	4.2
Number of Children in Family		
1-2	19	39.5
3+	29	60.4
Number of Children with Language and Literacy Concerns		
1	30	62.5
2	14	29.2
3	4	8.3
Family History of Reading Difficulties/Disability (RD)		
Self or Spouse has positive family history for RD*	25	51.0
Unsure of family history for RD*	5	12.2

^aPercentage calculated by number of respondents

A total of 71 individuals responded to the survey invitation. The following exclusion criteria were applied: a) respondents who were not parents ($n = 14$); (b) respondents who did not complete at least half (50%) of the survey ($n = 9$). After applying these criteria, 48 participants remained for final analysis.

Each participant was assigned a unique personal identification number (PIN). The key linking PINs to identifiable information was stored separately in an encrypted file.

Data Analysis

Quantitative data were exported from Qualtrics into SPSS for analysis. Prior to analysis, transformations of categorical variables were checked for consistency. Survey data were analyzed using SPSS (v.27). Quantitative data were analyzed using descriptive statistics. Categorical variables were summarized using frequencies and percentages, while continuous variables were described using means and standard deviations. This approach enabled us to provide data on participant characteristics, experiences during the identification and evaluation process, and satisfaction with IEP development and implementation.

For children who were classified for special education services, parents provided retrospective ratings of their relationship quality with the school both prior to beginning the evaluation process and following IEP establishment. A paired samples t-test examined the statistical significance of changes in perceived relationship quality across these two time points.

Results

The results were organized into four main sections: Discovery and Evaluation, Parent Experience of the IEP Process and Outcomes, Impact of RD on School Relationships and Familial Dynamics, and Additional Supports outside School Environment. This organizational structure aligned with the research questions and allows for a comprehensive examination of parents' experiences throughout the special education process.

Discovery and Evaluation of Language and Literacy Difficulties

Discovery

The majority of respondents (42.8%) expressed concerns about their child(ren)'s reading development prior to kindergarten, with an additional 41.4% developing concerns for their child(ren) while in kindergarten and first grade. The remaining (15.8%) expressed concern for their child's reading development and acquisition in grades 2 through high school. Despite 84.3% of parents expressing

concern about their child(ren)'s reading development prior to or in kindergarten, only 34.3% of respondents' children received early intervention services.

Parents reported that school-based assessments frequently confirmed their concerns about their children's language and literacy development. When asked about the impact of school-based assessments, 54.7% of parents reported that their child(ren)'s performance on school-based assessments confirmed their concerns about their child(ren)'s reading development. In comparison, 21.9% reported that school-based assessments initiated concerns about their reading development. The remaining 23.4% of parents reported that school-based reading benchmark assessments were not available to them. The frequency of confirmation increased with each additional child in the family: For first or only children, 53.3% of parental concerns were confirmed. For second children, the confirmation rate increased to 53.6%. In families with three affected children, 75% of parental concerns over language and literacy were confirmed by school-based assessments.

Evaluation

Parents reported that they requested an evaluation for a total of 75.7% of their child(ren). Of the 53 requests submitted for their child(ren), 88.8% were granted their request (See Table 2). Despite the high number evaluations granted, parents expressed disagreement that they were satisfied with the evaluation conducted by the school district ($M = 2.0$; $SD = .83$). Similarly, parents strongly disagreed that the reading assessments in the evaluation accurately captured their child(ren)'s present levels ($M = 1.93$; $SD = .74$). When asked to rate their knowledge of the assessments utilized by their school, parents reported that they were "somewhat" able to interpret assessments ($M = 1.93$; $SD = .6$).

Parent Experience of the IEP Development, Process, and Outcomes

IEP Development

Parents reported that a total of 49 (70%) of their children have or had an IEP in place (See Table 2). A majority (64%) of the IEPs were initiated in the early elementary grades, specifically in kindergarten (23%), first grade (8%), or second grade (33%). The remaining IEPs were initiated in third grade (24%), with the remaining 24% originating between fourth grade and high school.

The majority (61%) of the children were classified with Specific Learning Disability, Speech and Language Impairment (SLI) (10%), or dual classified with SLD and SLI 20%. The remaining 9% of children were classified

Table 2
Parent-Reported IEP Histories for Each Reported Child

	Child 1 <i>n</i> = 48		Child 2 <i>n</i> = 18		Child 3 <i>n</i> = 4		Total Children <i>n</i> = 70.0	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Grade at Parental Concern Onset								
Before Kindergarten	19	39.6	7	38.9	4	100	30	42.8
Kindergarten	13	27.1	6	33.3	0.0	0.0	19	27.1
First Grade	9	18.8	1	5.6	0.0	0.0	10	14.3
Second Grade	4	8.3	2	11.1	0.0	0.0	6	8.6
Third Grade – High School	3	6.3	2	11.1	0.0	0.0	5	7.2
Received EI Services*	17	35.4	4	22.6	3	75	24	34.3
Parent Requested Evaluation ^a	41	85.4	10	55.6	2	50	53	75.7
Evaluation Request Granted ^b	36	87.8	9	90.0	2	100	48	88.8
Requested IEE ^c	14	29.2	4	22.2	0.0	0.0	18	25.7
IEE Granted ^b	9	64.3	3	75.0	0.0	0.0	12	66.6
Child has/had an IEP ^a	38	79.2	8	44.4	3	75.0.0	49	70.0
IEP Initiation Grade ^c								
Kindergarten	8	17	1	13	2	67	11	23
First Grade	4	8	0	0	0	0	4	8
Second Grade	15	31	1	13	0	0	16	33
Third Grade	5	10	1	13	0	0	6	12
Fourth – High School	6	13	5	63	1	33	12	24
Disability Category ^c								
SLD only*	25	66	5	63	0	67	30	61
SLI only*	3	8	0	0	2	0	5	10
SLD and SLI*	7	18	2	25	1	0	10	20
Other	3	8	1	13	0	0	4	8

^a Reflects the number and percentage of participants answering “yes” to this question
^b Reflects the number and percentage of participants who answered the previous question
^c Reflects the number and percentage of participants who indicated an IEP was or is in place
*Note: EI = Early Intervention; IEP = Independent Education Plan; IEE = Independent Education Evaluation; SLD = Specific Learning Disability; SLI = Speech and Language Impairment

with other disability categories or had multiple disability categories.

IEP Process

When asked about their level of agreement regarding whether educators had used the allotted time wisely during IEP meetings, parents expressed disagreement ($M = 1.9$; $SD = 1.3$). However, parents reporting on the

meetings of the 2nd and third child(ren) expressed neither agreement nor disagreement (See Table 3). Parents were overall neutral in their agreement regarding whether IEP teams allotted sufficient time for parental input during IEP meetings. Similarly, parents reported a neutral level of agreement regarding their role as equal decision makers in IEP meetings ($M = 2.0$; $SD = 1.3$). Parents also expressed neutral agreement that their input influenced the outcomes

Table 3
Parental Satisfaction with IEP Process and Implementation

	Child 1		Child 2		Child 3		Total	
	(n = 38)		(n = 9)		(n = 4)		(n = 40)	
	M	SD	M	SD	M	SD	M	SD
Indicate Level of Satisfaction with								
Instructional Strategies in IEP ^a	1.5	1.4	1.7	1.2	1.5	1.0	1.5	1.3
Level of Communication between home and IEP team ^a	1.7	1.3	1.1	1.1	2.0	1.8	1.6	1.3
Role taken by district administration ^a	1.5	1.2	1.7	1.0	1.8	1.3	1.6	1.2
Indicate the level of agreement with								
I am happy with the educational programming in IEP ^b	1.1	1.4	1.1	1.5	2.3	1.7	2.4	1.3
Child's reading progress as a result of IEP decisions ^b	1.5	1.4	1.4	1.3	2.0	1.4	2.1	1.4
Trust in school to meet child's literacy needs ^b	.9	1.3	1.0	1.3	1.5	1.3	1.7	1.4
Educators used allotted time wisely in IEP meetings ^b	1.9	1.4	2.3	1.2	2.0	1.6	1.9	1.5
I had a positive IEP experience ^b	1.2	1.4	1.4	1.3	1.8	1.3	2.4	1.2
Sufficient time allotted for parent input in IEP meetings ^b	2.4	1.3	2.6	1.2	2.3	1.7	2.4	1.3
I was an equal decision-maker during IEP meetings ^b	2.1	1.5	2.0	1.4	2.3	1.7	2.1	1.4
I was comfortable in IEP meetings ^b	1.7	1.4	1.7	1.6	2.0	1.4	1.7	1.4
IEP meetings benefitted my child ^b	1.9	1.5	2.0	1.3	2.3	1.7	1.9	1.5
My input influenced outcomes of IEP meetings ^b	1.7	1.2	2.1	1.3	2.0	1.4	2.4	1.2

^a 0 = Extremely Dissatisfied; 1 = Somewhat Dissatisfied; 2 = Neither satisfied nor dissatisfied; 3 = Satisfied; 4 = Extremely Satisfied

^b 0 = Strongly Disagree; 1 = Disagree; 2 Neither agree nor disagree; 3 = Agree; 4 = Strongly Agree

of the IEP meetings ($M = 2.4$; $SD = 1.3$). Despite neutral feelings toward sufficient time and decision-making, parents expressed disagreement that they felt comfortable in the IEP meetings ($M = 1.6$; $SD = 1.4$). Overall, parents expressed disagreement that the IEP process was a positive one ($M = 1.2$; $SD = 1.3$).

IEP Implementation and Outcomes

While parents were neutral in their appraisal of their participation and input during the meetings, parents overall expressed disagreement that their child was making progress in his/her reading as a result of the decisions made during IEP meetings for their child(ren) ($M = 1.5$; $SD = 1.4$). The lack of perceived progress may have been a factor in parents' reporting of strong disagreement with their trust in their school to meet the needs of their child(ren)'s literacy development ($M = 0.9$; $SD = 1.3$).

When asked to express their satisfaction with the literacy instructional strategies identified in the IEP meeting, parents reported being "somewhat dissatisfied" ($M = 1.5$; $SD = 1.3$). Parents reported being similarly dissatisfied with the level of communication of school staff and service providers regarding IEP services ($M = 1.6$; $SD = 1.3$) and with the role of the district administration in the IEP process ($M = 1.5$; $SD = 1.2$).

Relationship with School Before and After the IEP Process

Using a 5-point Likert scale (1 = terrible, 5 = excellent), parents were asked to characterize their relationship with their child(ren)'s school before and after the IEP process. Parental responses for all children were combined. Before parents participated in the evaluation and IEP process, parents reported their relationship as high "Average" ($M = 3.7$; $SD = 1.2$). However, parents reported a decline in their perception of their relationship with their child(ren)'s school to the high end of "poor" ($M = 2.8$; $SD = 1.1$). A paired sample t -test conducted revealed a statistically significant decrease in parents' perception of their relationship with their child's school ($t(48) = 5.1$, $p < .001$).

Impact of Child's Reading Disability on Family Dynamics and Relationships with Schools

In terms of impact on the family, 47.9% of families indicated feeling a financial burden, 66.6% experienced an increase in anxiety, 14.6% reported feeling depressed, and 20.8% of those surveyed reported marital discord (See Table 4). Additionally, 14.6% of parents felt the process caused sibling rivalry, 18.8% reported feeling parental isolation.

On a more positive note, 35.4% of parents were able to identify the academic struggles of other child(ren) in the

Table 4
Family Impact and Supports Sought

	Respondents	
	<i>n</i>	%
Parent Activities to Support child(ren)'s Literacy Development		
Changed Jobs	8	16.7
Taken on a second job for additional income	4	8.3
Moved closer to my children's school	1	2.1
Changed Schools	14	29.2
Sought payment from school district for specialized private school	9	18.8
Sought and paid for an independent evaluation at personal expense	32	66.7
Tutoring outside of school	39	81.3
1 time per week	15	31.3
2 times per week	15	31.3
3 or more times per week	7	14.6
Impact on Family During Identification and Programing		
Marital Discord	10	20.8
Financial Burden	23	47.9
Increased Anxiety	32	66.7
Depression	7	14.6
Sibling Rivalry	7	14.6
Feelings of validation	12	25.0
Parental Isolation from Friends	9	18.8
Relief	15	31.3
Other	7	14.6

family. In comparison, 25% reported experiencing feelings of validation, and 31% reported feeling a sense of relief.

Additional Supports Parents Seek Outside School-Provided Services

The majority of parents, 66.7%, had sought and paid for an independent evaluation at their expense for neuropsychological, psycho-educational, speech and language, occupational therapy, etc. The vast majority, 81.3%, also employed tutoring outside of the school to support their child's reading development, with 38.5% paying for twice-weekly tutoring, 35.9% paying for once-weekly tutoring, and 17.9% paying for three or more times-a-week sessions.

To support their child's education, 58% of participants indicated changing schools, 38% sought payment from their school district for private school, 31% had changed jobs, 15% took on a second job for additional income, and 4% moved closer to their child(ren)'s school.

Discussion

This study revealed significant insights into the experiences of parents with children who have reading disabilities. Although most parents identified concerns

about their child's reading development before or during the early elementary years, early intervention services were provided to only a limited number of children. While parents' requests for school evaluations were largely granted, they reported being dissatisfied that the assessments used did not adequately capture their child's reading ability. IEPs were primarily initiated in early elementary grades, with the majority beginning in second grade, and most children were classified with SLD. Parents reported negative perceptions of the IEP process overall, expressing discomfort during meetings despite adequate time allocation and concerns that their input did not meaningfully influence decision-making.

Although parents acknowledged some benefits from the IEPs, they expressed dissatisfaction with instructional strategies and perceived a lack of progress. The study also found a significant decline in parents' relationships with schools after the IEP process, coupled with a lack of trust in the school's ability to meet their child's literacy needs. Many parents, likely due to their higher socioeconomic status, sought independent evaluations and tutoring. Lastly, the majority of parents reported increased financial burden and anxiety, with over half changing schools to support their child's learning needs better.

A Taxing Journey

Parents of children with reading disabilities face a challenging and often frustrating journey in securing appropriate support for their children. The discrepancy model for identifying learning disabilities remains widely used, despite recognized limitations, which contribute to identification delays (Lopes et al., 2020). This model typically postpones identification until third or fourth grade, creating conditions where students must demonstrate failure before receiving interventions (Reynolds & Shaywitz, 2009). A recent survey of special educators found that it takes an average of 13.5 months for a student flagged with reading difficulties to receive changes to their educational plan (Al Dahhan et al, 2021). This delayed identification results in lost time and missed opportunities for early intervention, which is known to be the most effective period for remediation. Our findings support other research that parents report challenges at each stage of the identification, evaluation, and educational programming process, resulting in delayed diagnosis and service provision.

This study's findings underscore the crucial role of parental involvement in enhancing outcomes for students with disabilities. This aligns with previous research indicating that parents of children with disabilities experience greater burdens compared to those of children without disabilities (Werner et al., 2022). However, this involvement comes at a considerable cost to families. Parents reported increased financial burdens and anxiety as they navigated the complex landscape of support services despite support from a community-based nonprofit organization.

The Cost of Lost Trust

The degradation of parents' perception of the relationship with their children's school(s) following the IEP process and the limited trust they had in the school to meet the needs of their child's literacy development is a significant concern. Effective parent/school partnerships have been established as crucial for student success. Low levels of trust and weak relationships can lead to decreased parental involvement in their child's education, reduced information sharing between parents and teachers, and missed opportunities for coordinated support between home and school (Toren, 2025). Furthermore, positive relationships between families and schools have been demonstrated to reduce requests for legal avenues to settle disputes (Feinberg et al., 2002).

The Myth of Well-Resourced Districts

Higher SES levels have been reported to serve as a protective factor against negative academic and emotional

outcomes associated with difficulties and delays in reading acquisition (Catts & Petscher, 2022). Federal legislation requires the provision of evidence-based instruction to all students, including those with disabilities. However, as this study and others have demonstrated, even with the availability of various forms of financial, navigational, and social capital, parents of students with reading difficulties experience a range of financial and relational hardships while seeking and providing effective educational supports for their child. Families' efforts to locate and/or design activities to support their children's reading needs further highlight the pervasive impact of reading disabilities on family life. The provision of evidence-based reading instruction is heavily dependent on parental advocacy, which is influenced by social class and access to resources and capital. The reliance of this advocacy reveals a significant myth: that schools independently ensure equitable, evidence-based instruction for all students.

This study builds upon Silverstein (2015), which suggests that while identification often leads to special education services, parents frequently report difficulties in initiating effective educational programming, necessitating their increased involvement and advocacy. As indicated in this study and others (Rosetti, 2021), when institutional supports are considered inadequate, parents turn to external resources to address their children's reading disabilities. Parents frequently resorted to seeking expensive independent evaluations, specialized private tutoring and/or reading programs, and educational technology, as well as additional therapies such as speech and language services and occupational therapy to support their children's literacy development. These interventions can be costly, with many families reporting significant out-of-pocket expenses.

Furthermore, research has shown that increased parental involvement and advocacy in high SES districts result in an increase of due process cases by thirteen times compared to lower SES districts, where parents may not have access to forms of capital to support disputes with their child's school (Chambers et al., 2003). However, while these parents may be better positioned, research indicates that parents who engage in higher levels of advocacy report increased negative experiences with schools refusing services, acting disingenuously, lacking trained personnel, and communicating poorly (Burke & Hodapp, 2016). Concerningly, while the procedural safeguards put in place under the IDEA may have been well-intended, the outcome has not resulted in establishing the intended legal precedent (Phillips, 2008). The prohibitive cost of pursuing disputes through the various levels prevents many parents from considering this as a viable avenue. Furthermore, the

outcomes of due process hearings largely favor districts (Blackwell & Blackwell, 2015; Chambers et al., 2003). As a result, parents' efforts to engage in advocacy and hold schools accountable are often unsuccessful and rarely result in changes that would impact (as evidenced by improved reading instruction) the broader school community.

Heredity of Reading Disability

Parents possess unique and specialized expert knowledge of their children, and their input should be valued. When parents express concern over their child's language and literacy development, their assessments are often accurate, indicating that students require more intensive support than currently provided (Odegard et al., 2021).

Reading difficulties and disabilities are highly heritable (Christopher et al., 2016). When schools are engaging with parents who express concerns about their child's reading acquisition and development, it would be advantageous to consider the risk of reading difficulties for other children in the family. Furthermore, school professionals should exercise additional caution in the notification and presentation of evaluations and educational planning for their child, given that the parent may also have reading difficulties that could impede their ability to read and understand the paperwork required in the special education identification and educational planning process.

Implications and Recommendations Moving Forward

This disparity in access to resources highlights a significant equity issue in special education. The reliance on parents to supplement school-based services with private resources creates a system where children from families with greater financial means are more likely to receive comprehensive support for their reading disabilities. Furthermore, as indicated by this study and others, despite parents reporting awareness of potential literacy concerns well before kindergarten, only a limited number of students receive early intervention services; furthermore, most do not receive an IEP until second grade or beyond. This delayed identification has been reported to limit the timeline and effectiveness of remediation outcomes (Ozernov-Palchik & Gaab, 2016).

Over-Reliance on Families Providing External Supports

While there is an evident and egregious equity concern in this model, additional concerns may be present that are often overlooked. Given that resourced parents will likely resort to supplementing school-based supports, it may provide an opportunity for schools to neglect evaluating

the success of their current programming and adjust it to meet the needs of their student population. While MTSS frameworks have been identified as a means to improve core curriculum, instruction, and intervention efforts (Murdoch et al., 2024), effective implementation of these frameworks continues to be complicated and fraught with difficulties (Foreman & Crystal, 2015). The difficulty in successfully implementing these frameworks may necessitate the use of translational science to advance methodologies and processes within education.

Early Screening and Effective Evidence-Aligned Literacy Curricula and Systems

Recently, legislation mandating early language and/or literacy screeners has increased across the nation (Neuman et al., 2023). While this is encouraging, schools need to be able to operationalize this data to improve educational outcomes for all students, regardless of socioeconomic or disability status. As students progress through their educational careers (even from first to fourth grade), narrowing the gap between poor readers and proficient readers becomes increasingly challenging (McNamara et al., 2011). While screening is important, operational, multitiered systems of support will mitigate overtaxed special education caseloads, as this requires the provision of a comprehensive and evidence-based general education curriculum, paired with aligned interventions of increasing intensity. While false positives will inherently be an ongoing issue for continual improvement, preventive educational interventions, like preventive medical interventions, are assumed to be less expensive, both financially and in terms of the child's emotional health and well-being.

Kim and Zagata (2024) recommend three principles to guide the provision of integrated and effective reading and writing instruction that include (a) leveraging assessment data in reading and writing to inform effective integrated instruction; (b) ensuring the development of lower-order skills while also supporting the development of higher-order skills; and (c) making reading-writing connections visible.

Supporting Families

The pattern of families seeking additional supports outside school systems indicates that districts should consider collaborative partnerships with parent organizations. These collaborations can help address individual disputes and ensure that schools respond to the needs of their student population based on assessment data and parent concerns regarding language and literacy development. Research indicates that schools should support parents through collaborative approaches involving home, school, and community settings (Dreyer,

2015). Parents face emotional challenges and assume multiple roles to support their children (DuPlessis, 2012; Dipeolu et al., 2014), and their support has a significant impact on students' reading abilities and psychological well-being. Schools can support parents by providing literacy assessments, learning centers, and psychological services (Nichols, 2000), as well as offering emotional support, sibling support, and resources for stress management. Additionally, schools should help parents access community support services and promote educational advocacy. A systemic model of collaboration among home, school, and community is crucial for supporting children with reading disabilities (Dipeolu et al., 2014).

Limitations

This study has several important limitations that should be taken into consideration. The participant sample was not representative, consisting primarily of well-educated, higher-income parents who sought external support, which likely skewed the data and limited its generalizability. Participants' self-selection and potential dissatisfaction with school services may have influenced their perspectives. The study focuses solely on parental views without incorporating educator perspectives, resulting in a one-sided approach. The analysis highlighted the need for greater detail about specific school-based assessments that confirmed parental concerns regarding children's reading development. While this study contributes valuable insights into parental experiences with reading difficulties, caution is warranted in generalizing these pilot findings. Future investigations should include broader samples and multiple perspectives to enhance understanding of support systems for students with reading challenges.

References

- Al Dahhan, N. Z., Mesite, L., Feller, M. J., & Christodoulou, J. (2021). *Identifying reading disabilities: A survey of practitioners*. <https://doi.org/10.31234/osf.io/c9d2h>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Blackwell, W. H., & Blackwell, V. V. (2015). A longitudinal study of special education due process hearings in Massachusetts: Issues, representation, and student characteristics. *Sage Open*, 5(1), 2158244015577669. <https://doi.org/10.1177/2158244015577669>
- Burke, M. M., & Hodapp, R. M. (2016). The nature, correlates, and conditions of parental advocacy in special education. *Exceptionality*, 24(3), 137–150. <https://doi.org/10.1080/09362835.2015.1064412>
- Buss, E. (2002). "Parental" rights. *Virginia Law Review*, 88(3), 635–683.
- Catts, H. W., & Petscher, Y. (2022). A cumulative risk and resilience model of dyslexia. *Journal of Learning Disabilities*, 55(3), 171–184. <https://doi.org/10.1177/00222194211037062>
- Chambers, J. G., Harr, J. J., & Dhanani, A. (2003). *What are we spending on procedural safeguards in special education, 1999-2000?* Special Education Expenditure Project (SEEP) (Report No. ED480760). American Institutes for Research, Center for Special Education Finance. <https://eric.ed.gov/?id=ED480760>
- Christopher, M. E., Keenan, J. M., Hulslander, J., DeFries, J. C., Miyake, A., Wadsworth, S. J., Willcutt, E., Pennington, B., & Olson, R. K. (2016). The genetic and environmental etiologies of the relations between cognitive skills and components of reading ability. *Journal of Experimental Psychology: General*, 145(4), 451–469. <https://doi.org/10.1037/xge0000146>
- Denton, K., Coneway, B., Simmons, M., Behl, M., & Shin, M. (2022). Parents' voices matter: A mixed-method study on the dyslexia diagnosis process. *Psychology in the Schools*, 59(11), 2267–2286. <https://doi.org/10.1002/pits.22762>
- Dipeolu, A., Storlie, C., Hargrave, S. J., & Cook, R. (2014). A qualitative analysis of parents with children diagnosed with reading disabilities. *The Family Journal*, 23(1), 74–81. <https://doi.org/10.1177/1066480714547189>
- Education for All Handicapped Children Act of 1975, Pub. L. No. 94-142, 89 Stat. 773* (1975). <https://www.govinfo.gov/content/pkg/STATUTE-89/pdf/STATUTE-89-Pg773.pdf>
- Feinberg, E., Beyer, J., & Moses, P. (2002). Beyond mediation: Strategies for appropriate early dispute resolution in special education. *Journal of Disability Policy Studies*, 13(4), 229–236.
- First Step Act of 2018, Pub. L. No. 115-391, 132 Stat. 5194* (2018). <https://www.congress.gov/115/plaws/publ391/PLAW-115publ391.pdf>
- Francis, D. J., Fletcher, J. M., Stuebing, K. K., Lyon, G. R., Shaywitz, B. A., & Shaywitz, S. E. (2005). Psychometric approaches to the identification of LD: IQ and achievement scores are not sufficient. *Journal of Learning Disabilities*, 38(2), 98–108. <https://doi.org/10.1177/00222194050380020101>
- Gearin, B., Petscher, Y., Stanley, C., Nelson, N. J., & Fien, H. (2022). Document analysis of state dyslexia legislation suggests likely heterogeneous effects on student and school outcomes. *Learning Disability Quarterly*, 45(4), 267–279. doi: 10.1177/0731948721991549
- Hanford, E. (2017, September 11). *Hard to read: How American schools fail kids with dyslexia*. APM Reports. <https://www.apmreports.org/episode/2017/09/11/hard-to-read>

- Hebbeler, K., Spiker, D., Bailey, D., Scarborough, A., Mallik, S., Simeonsson, R., & Nelson, L. (2007). *Early intervention for infants and toddlers with disabilities and their families: Participants, services, and outcomes*. Sri International. https://www.sri.com/wp-content/uploads/2021/12/neils_finalreport_200702.pdf
- Individuals with Disabilities Education Act*, 20 U.S.C. § 1400 et seq. (2004). <https://sites.ed.gov/idea/statuteregulations/>
- Karaxha, Z., & Zirkel, P. A. (2014). Trends in special education case law: Frequency and outcomes of published court decisions 1998–2012. *Journal of Special Education Leadership*, 27(2), 55–64. <https://perryzirkel.com/wp-content/uploads/2023/03/karaxha-and-zirkel-trends-article-in-jsel.pdf>
- Kim, Y. G., & Zagata, E. (2024). Enhancing reading and writing skills through systematically integrated instruction. *The Reading Teacher*, 77(6), 787–799. <https://doi.org/10.1002/trtr.2307>
- Lopes, J. A., Gomes, C., Oliveira, C. R., & Elliott, J. G. (2020). Research studies on dyslexia: Participant inclusion and exclusion criteria. *European Journal of Special Needs Education*, 35(5), 587–602. <https://doi.org/10.1080/08856257.2020.1732108>
- McNamara, J. K., Scissons, M., & Gutknecht, N. (2011). A longitudinal study of kindergarten children at risk for reading disabilities: The poor really are getting poorer. *Journal of Learning Disabilities*, 44(5), 421–430. <https://doi.org/10.1177/0022219411410040>
- Murdoch, A., Morrison, J. Q., & Strickler, W. (2024). Process evaluation of a problem-solving approach for analyzing literacy practices within a multitiered system of supports framework. *Behavior and Social Issues*, 33(1), 479–503. <https://doi.org/10.1007/s42822-024-00166-5>
- National Center for Education Statistics. (2023). Students with disabilities. In *Condition of education*. U.S. Department of Education, Institute of Education Sciences. <https://nces.ed.gov/programs/coe/indicator/cgg>
- Neuman, S. B., Quintero, E., & Reist, K. (2023). *Reading reform across America: A survey of state legislation*. Albert Shanker Institute. <https://www.shankerinstitute.org/resource/reading-reform-across-america>
- Nichols, S. (2000). Parental involvement in supporting children with learning difficulties. *Australian Journal of Learning Difficulties*, 5(2), 28–33. <https://doi.org/10.1080/19404150009546624>
- Odegard, T. N., Hutchings, T., Farris, E. A., & Oslund, E. L. (2021). External evaluations for dyslexia: Do the data support parent concerns? *Annals of Dyslexia*, 71(1), 50–59. <https://doi.org/10.1007/s11881-021-00224-2>
- Ozernov-Palchik, O., & Gaab, N. (2016). Tackling the ‘dyslexia paradox’: Reading brain and behavior for early markers of developmental dyslexia. *Wiley Interdisciplinary Reviews: Cognitive Science*, 7(2), 156–176. <https://doi.org/10.1002/wcs.1383>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Phillips, E. (2008). When parents are not enough: External advocacy in special education. *The Yale Law Journal*, 117(8), 1802–1853. <https://doi.org/10.2307/2045469>
- Quinn, J. M., Wagner, R. K., Petscher, Y., Roberts, G., Menzel, A. J., & Schatschneider, C. (2020). Differential codevelopment of vocabulary knowledge and reading comprehension for students with and without learning disabilities. *Journal of Educational Psychology*, 112(3), 608–627. <https://doi.org/10.1037/edu0000382>
- Reynolds, C. R., & Shaywitz, S. E. (2009). Response to intervention: Ready or not? Or, from wait-to-fail to watch-them-fail. *School Psychology Quarterly*, 24(2), 130–145. <https://doi.org/10.1037/a0016158>
- Sansavini, A., Favilla, M. E., Guasti, M. T., Marini, A., Millepiedi, S., Di Martino, M. V., Vecchi, S., Battajon, N., Bertolo, L., Capirci, O., Carretti, B., Colatei, M. P., Frioni, C., Marotta, L., Massa, S., Michelazzo, L., Pecini, C., Piazzalunga, S., Pieretti, M., Rinaldi, P., Salvadorini, R., Termine, C., Zuccarini, M., D’Amico, S., De Cagno, A. G., Levorato, M. C., & Lorusso, M. L. (2021). Developmental language disorder: Early predictors, age for the diagnosis, and diagnostic tools. A scoping review. *Brain Sciences*, 11(5), 654. <https://doi.org/10.3390/brainsci11050654>
- Shaywitz, B. A., Fletcher, J. M., Holahan, J. M., & Shaywitz, S. E. (1992). Discrepancy compared to low achievement definitions of reading disability: Results from the Connecticut Longitudinal Study. *Journal of Learning Disabilities*, 25(10), 639–648. <https://doi.org/10.1177/002221949202501003>
- Shaywitz, B. A., & Shaywitz, S. E. (2020). The American experience: Toward a 21st century definition of dyslexia. *Oxford Review of Education*, 46(4), 454–471. <https://doi.org/10.1080/03054985.2020.1793545>
- Shaywitz, S. E., Fletcher, J. M., Holahan, J. M., Schneider, A. E., Marchione, K. E., Stuebing, K. K., Francis, D. J., Pugh, K. R., & Shaywitz, B. A. (1999). Persistence of dyslexia: The Connecticut Longitudinal Study at

- adolescence. *Pediatrics*, 104(6), 1351–1359. <https://doi.org/10.1542/peds.104.6.1351>
- Silverstein, L. M. (2015). Parents of children with learning disabilities: Difficulties, support needs, and interest in group intervention. [Unpublished doctoral dissertation/master's thesis]. Alliant International University.
- Smith, R., & Topple, J. (n.d.). *By focusing on dyslexia, we address the needs of all children*. International Dyslexia Association. <https://dyslexiaida.org/by-focusing-on-dyslexia-we-address-the-needs-of-all-children/>
- Stanley, C. T., Petscher, Y., & Catts, H. (2018). A longitudinal investigation of direct and indirect links between reading skills in kindergarten and reading comprehension in tenth grade. *Reading and Writing: An Interdisciplinary Journal*, 31(1), 133–153. <https://doi.org/10.1007/s11145-017-9777-6>
- Thomason, K. D. (2007). The costs of a “free” education: The impact of *Schaffer v. Weast* and *Arlington v. Murphy* on litigation under the IDEA. *Duke Law Journal*, 57(2), 457–486.
- Kaplan Toren, N. (2025). Parents-teachers’ trust relationship and student self-esteem and academic achievement: A three sources multiple-step analysis. *Journal of Psychologists and Counsellors in Schools*, 35(1), 47–65. <https://doi.org/10.1177/20556365251319868>
- U.S. Office of Education. (1977). Assistance to states for education of handicapped children: Procedures for evaluating specific learning disabilities. *Federal Register*, 42(250), 65082–65085.
- van Bergen, E., van der Leij, A., & de Jong, P. F. (2014). The intergenerational multiple deficit model and the case of dyslexia. *Frontiers in Human Neuroscience*, 8, 346. <https://doi.org/10.3389/fnhum.2014.00346>
- Wanzek, J., Stevens, E. A., Williams, K. J., Scammacca, N., Vaughn, S., & Sargent, K. (2018). Current evidence on the effects of intensive early reading interventions. *Journal of Learning Disabilities*, 51(6), 612–624. <https://doi.org/10.1177/0022219418775110>
- Werner, S., Hochman, Y., Holler, R., & Shpigelman, C.-N. (2022). Burden and growth during COVID-19: Comparing parents of children with and without disabilities. *Journal of Child and Family Studies*, 31(6), 1535–1546. <https://doi.org/10.1007/s10826-022-02282-5>
- Ziegler, J. C., Bertrand, D., Tóth, D., Csépe, V., Reis, A., Fáisca, L., Saine, N., Lyytinen, H., Vaessen, A., & Blomert, L. (2010). Orthographic depth and its impact on universal predictors of reading. *Psychological Science*, 21(4), 551–559. <https://doi.org/10.1177/0956797610363406>

Jaclyn Galbally is an assistant professor in the Department of Special Education at Saint Joseph's University.

Mary E. Sheppard is an associate professor in the Department of Special Education at Saint Joseph's University.

Katharine Mayer is a literary specialist and cofounder of Everyone Reads PA.

Please send correspondence to Jaclyn Galbally, jgalball@sju.edu

Twice Othered: Results of a Latent Content Analysis Exploring Cultural Responsiveness and Learning Disabilities

Eric Shyman

Culturally and Linguistically Diverse (CLD) students with Specific Learning Disabilities (SLD) are overrepresented in the school population but often receive inconsistent and culturally irrelevant instruction. This paper reports on the results of a latent content analysis of extant literature to provide four main themes that can be used to better organize, design, and implement culturally responsive instruction and research for CLD students with SLD. An exhaustive literature review and latent content analysis was conducted on the extant literature involving CLD students with SLD. Four major themes were identified from the latent content analysis: (a) the need for a broader concept of culture, (b) general adoption of a deficit-based perspective, (c) unfair and unrepresentative standards and assessments, and (d) need for increased professional development for teachers.

Keywords: *Culturally and linguistically diverse students, specific learning disabilities, culturally responsive teaching, multicultural learning*

Introduction

A Rapidly Changing Demographic

It is clear by virtually all measures that the demographic of American schoolchildren is increasingly diversifying, especially along ethnic and linguistic lines (Kelly et al., 2023; NCES, 2022; Wei et al., 2022). White children maintain the highest representation in American public schools by a thin margin, though representation of other ethnic groups, especially Hispanic children, is rapidly increasing. These “non-White” schoolchildren have commonly come to be referred to as Culturally and Linguistically Diverse (CLD) both in the literature as well as in practice (Biagas et al., 2024; IRIS, 2025; Juarez et al., 2024). According to the National Center for Education Statistics (NCES), of the 49.4 million children attending American public schools as of Fall 2020, 22.6 million children (46%) were White, 13.8 million (28%) were Hispanic, 7.5 million (15%) were Black, and fewer than one million children (11%) consisted of Native American Indian, Asian-American, Pacific Islander, mixed race, or unidentified. Compared with earlier findings from NCES (2013), these data demonstrate a decrease

in White and Black children of 8% and 2% respectively, and an increase of 6% among Hispanic children, which are commensurate with other findings (Kelly et al., 2023; Kieran & Anderson, 2019; NCES, 2022).

English Language Learners (ELLs) are also an increasingly represented demographic among American schoolchildren. ELLs are typically defined as children whose primary language is not English, or who come from homes in which English is not the primary language spoken regardless of their country of birth, therefore necessitating some level of English language instruction and/or intervention (IRISCenter, 2025; Piazza et al., 2015; Premo et al., 2023). The percentage of ELL schoolchildren in the Fall of 2021 was estimated at 5.3 million, or 10.6% of students in US public schools, an increase of approximately 600,000 students since the Fall of 2010 (NCES, 2024; Wei et al., 2022). Of those 5.3 million children, just over 4 million are speakers of Spanish (USDOE, 2021).

In addition to race and ethnicity, the demographic of American schoolchildren is also consistently changing in terms of disability classification (Davison et al., 2024; Young, 2021; Zablotzky et al., 2019). Children

classified as having Specific Learning Disabilities (SLD) have historically comprised the largest group of individuals who receive federally legislated academic and instructional support through the Individuals with Disabilities Education Act (IDEA), at times making up nearly 50% of classified students (Grigorenko et al., 2020). However, conceptualization and identification of SLD remains one of the most debated concepts within special education discourse (Georgan et al., 2023; Maki & Adams, 2018). One widely cited conceptualization of Learning Disabilities is offered by the National Joint Commission on Learning Disabilities (NJCLD) as "...a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities" (NJCLD, 2016, as cited by Wei et al., 2022, p. 2). This definition is often preferred to that offered by the Individualization with Disabilities Education Improvement Act (IDEIA, 2004) as it is criticized for being verbose and convoluted.

Representation of CLD students in the special education population further complicates this discussion due to the difficulty of pinpointing whether issues with their academic performance stem from their learning disabilities or from culturally irrelevant or language insensitive instructional assessment, materials and methods. One important result of this problem is the disproportional representation of CLD students classified as having Specific Learning Disabilities, especially among ELLs (Bal, 2018; Biagas et al., 2023; Castro-Villareal, 2016; Ford et al., 2014; Kelly et al., 2023; Rodriguez & Rodriguez, 2017; Wei et al., 2022). Though research indicates that disproportional representation of CLD students can be detected across disability classifications, statistics suggest that 37% of students in the US receiving special education services are classified with a Learning Disability (LD), yet 47% of ELLs receiving special education services were represented in the LD category, as opposed to 36% of native speakers (Wei et al., 2022). Similar findings confirming disproportionality of CLD students classified as SLD are suggested in multiple reports (Biagas et al., 2024; Freeman-Green et al., 2021; Juarez et al., 2023; Kelly et al., 2023). Despite the likelihood that CLD students with SLD may be receiving some academic intervention, it is unclear if and how the nature of the intervention considers their culture, language, and/or disability.

Culturally Responsive Pedagogy

Ladson-Billings (1995) coined the term Culturally Responsive Pedagogy (CRP), defining it as a constructivist orientation that empowers students intellectually, socially, emotionally, and politically by including relevant cultural referents in the curriculum to impact knowledge, skills,

and attitudes of CLD students. Gay (2010) expands on the definition by suggesting that CRP is the process of "... using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (p. 31).

CRP obligates the teacher to develop an understanding of the cultural basis of behaviors and modes of communication of their CLD students and devise modes of instruction, assessment and classroom management strategies based on these considerations. This process is especially important when there is a cultural and/or linguistic mismatch between the teacher and the students, as evidence suggests there will likely be (NCES, 2022). Without such understanding, students' failure to exhibit the dominant culture's expected behaviors are likely to be seen as transgressions resulting from social deficiency and leading to disciplinary action despite being, more aptly, a product of differences in social norms and expectations. This tendency is evidenced by the disproportionate punishment of CLD students for comparable behaviors is well-noted in the research (Bal, 2018; Fallon et al., 2022; Hines et al., 2018; Skiba et al., 2011).

The disproportionality involving the current demographics of the American student body as compared to the personnel of schools increases the urgency of CRP. Whereas CLD students represent roughly half of the student body, school personnel at all levels are overwhelmingly White. According to the School Superintendents Association (2023), 89% of superintendents are White, 4% are Black, and 3% are Hispanic. According to the National Center for Education Statistics (NCES, 2022) 77% of principals are White, 10% are Black, and 9% are Hispanic. According to the same data source, 80% of teachers are White, 6% are Black, and 9% are Hispanic. Many scholars interpret findings representing cultural mismatch between students and educational personnel as an important factor in maintaining implicit deficit-based cultural messages as well as potentially affecting teachers' sense of self-efficacy in implementing culturally responsive practices (Greenlees et al., 2024; Moore et al., 2021). These findings demonstrate the commonality of a cultural mismatch between school personnel and the student body, creating the potential for dominant cultural norms to be preserved to the detriment of CLD students.

The Current Problem

Effectively addressing the instructional needs of CLD students with SLD is the main problem addressed in this paper. Though there are empirical studies emerging that systematically explore the relationship between CRP and CLD students with SLD (Biagas et al., 2024; Freeman-

Green et al., 2021; Kelly et al., 2023), there remains a shortage of sound theoretical articles on the topic. A possible explanation for this shortage is the disorganized and fragmented theoretical framework that exists on the topic. A latent content analysis (Kleinheskel et al., 2020) of the extant literature can therefore contribute to a better organized framework from which further scholarship can be developed.

Method

I conducted a literature search through academic databases accessed through a university library system. Search terms including “Cultural Responsiveness,” “Culturally Responsive Teaching,” “Learning Disabilities,” “Specific Learning Disabilities,” and “Response to Intervention” were entered using a multiple database search including *ERIC via EBSCO*, *Academic Search Elite*, *OmniFile Full Text*, *Professional Development Collection*, *APA PsycArticles*, and *APA PsycInfo*, and limited to peer-reviewed articles published from 2011 or later and written by researchers practicing at US-based universities and/or writing about the US schooling context. To maximize the number of relevant articles, the search was filtered to locate the search terms in all text of an article (e.g., “TX” as a limiter in ERIC via EBSCO with multiple databases selected). Peer-reviewed articles published in English were used as the unit of analysis because such articles represent the major means of academic communication within and between research communities in the United States. Articles reporting results of specific interventions and/or philosophical explorations were included in the original sample. Articles investigating college or university-based preservice teacher preparation or formal diagnosis of learning disabilities among CLD children were not included. Only articles with full text accessibility were included in the final sample. I deemed the search exhaustive when no additional articles that fit the search criteria could be located by any of the databases used, leaving a total of 24 articles. A detailed explanation of the literature review process can be found in Table 1, which illustrates the criteria for the exhaustive literature review.

I then categorized articles as either empirical articles or theoretical articles. Theoretical articles were conceptualized as works delineating theoretical frameworks and/or commentaries on cultural responsiveness among CLD students with Learning Disabilities. Empirical articles were conceptualized as articles reporting results of systematic research studies directly investigating the effectiveness of CRP methods for CLD children with Learning Disabilities in a classroom setting. Out of the 24 articles represented in the final sample, 21% (6 articles) were categorized as empirical, addressing interventions for either academic

or social/behavioral skills and 79% (18 articles) were categorized as theoretical. The 6 empirical articles were eliminated from the final sample as the focus of the current analysis was to inform a theoretical framework.

A latent content analysis of the 18 theoretical articles in the final sample was employed to determine evidence for textual patterns or thematic constructs. First, general patterns and constructs were identified. These patterns and constructs were then revised for parsimony over multiple iterations by the author using a color-coding process to identify themes. The analytic iterations were repeated until the author determined that the patterns represented single units of meaning that could be categorized as separate themes (Kleinheskel et al., 2020). Table 2 illustrates the final list of theoretical articles that were included in the literature review and corresponding themes.

Before I present the findings, and in the spirit of self-reflection, I acknowledge my standpoint as a White, heterosexual American male without lived experience as a CLD student. I acknowledge that my positionality influenced this research project to some extent, though I have made every attempt to bracket my preconceptions and assumptions as much as possible in the data analysis (Davis, 2018).

Trustworthiness was addressed in the analysis of the data. Credibility was considered by relying only on peer-reviewed articles from reputable journals. “Peer reviewed” was chosen as a limiter in the initial search as well as confirmed directly once the article was accessed. Additionally, triangulation and transferability were employed to the greatest extent possible by using as many reliable databases available, as well as reviewing articles from all available related fields (such as psychology, speech and communication, etc.). Dependability was maximized through careful tracking of analysis sessions. Confirmability was maximized through consistent attempts at bracketing, as well as persistent self-reflection on positionality (Ahmed, 2024).

Two main research questions were formulated:

RQ1: What are the major themes represented in the extant theoretical literature investigating Culturally Responsive Pedagogy for culturally and linguistically diverse children with Learning Disabilities?

RQ2: How can these themes be used to increase and advance research?

Results

Major Themes of Articles Exploring CLD and SLD in the Extant Research

A content analysis of the 18 theoretical articles was implemented and four main themes were determined.

Table 1
Literature Review Selection Criteria

Criteria	Inclusion	Exclusion	Rationale
1. Publication Quality	Peer-reviewed articles	Non-peer-reviewed articles	Selection of only articles with scholastic integrity and rigor
2. Publication language	Articles written in English	Articles not written in English or translated to English	English is the primary language of research conducted in the US
3.			
4. Publication length	Articles available as full-text only	Summarized articles; Abstract only	Full-text articles allow more detailed content analysis
5. Publication type	Peer-reviewed journals that publish empirical and conceptual articles	Articles from non-peer-reviewed newspapers, magazines, conference proceedings and/or internet publications	Articles that appear in peer-reviewed publications and have a systematic peer-review process are accepted within the scientific community
6. Publication scope	Papers addressing students considered Culturally and Linguistically Diverse (CLD) as well as having a Specific Learning Disability, with research conduct within the US	Papers addressing teacher preparation and/or diagnostic or classification methods	Papers limited to the particular scope of intervention and/or philosophical exploration allow for more specific content analysis

Note: This table illustrates the selection criteria for the exhaustive literature review including rationales as to what particular articles were included and excluded and a rationale for each type of decision. The criteria include Publication Quality, Publication Language, Publication Length, Publication Type, and Publication Scope.

The four themes were: (a) the need for a broader concept of culture; (b) general adoption of a deficit-based perspective; (c) unfair and unrepresentative standards and assessments; and (d) need for increased professional development for teachers.

Need for a Broader Concept of Culture

In general, the context of a broader concept of culture criticized the typical use of racial and/or ethnic identifiers as the main basis for determining cultural diversity. Specific identifiers are a necessary component of diversity, however, multiple authors emphasized the need to include sociocultural and sociopolitical historical practices as part of the definition of cultural and linguistic diversity (Artiles, 2015; Bal, 2018; Cramer et al., 2014; Dennis et al.,

2022; Hernandez Finch, 2012; Hoover et al., 2018; Kieran & Anderson, 2019; Trainor & Robertson, 2022; Utley et al., 2011).

One suggestion by Piazza et al. (2015) is replacing the term culturally and linguistically diverse (CLD) with socioculturally diverse students, signified as those who come from groups that have been traditionally marginalized based on sociocultural factors such as race, ethnicity, gender, and poverty. In this light Artiles (2015) suggests “the construct of culture transcends population traits and it has deep connections to views of learning... culture contributes to the construction of difference [*italics in original*] across contexts...categorical alignment erases historical nuance and baggage, complexity and the longstanding interweavings of [cultures]...” (pp.

Table 2
Alignment of Themes with Articles

Article	Need for a Broad Concept of Culture	General Adoption of a Deficit-Based Perspective	Unfair and Unrepresentative Standards and Assessments	Need for Increased Professional Development
Artiles (2015)	✓	✓		
Bal (2018)	✓	✓		
Castro-Villareal (2016)		✓		
Cavendish et al. (2016)		✓		
Cramer et al. (2014)	✓	✓		
Cramer (2015)		✓		
Ford et al. (2014)		✓	✓	✓
Hernandez Finch (2012)	✓		✓	✓
Hoover et al. (2018)	✓			
Kieran & Anderson (2019)	✓	✓		✓
O'Keefe & Medina (2016)			✓	✓
Orosco & O'Connor (2014)			✓	✓
Piazza et al. (2015)	✓			✓
Sciuchetti (2017)		✓		✓
Trainor & Robertson (2022)	✓	✓		
Utley et al. (2011)	✓		✓	✓
Vincent et al. (2011)		✓		✓
Wei et al. (2022)			✓	

**Note: Table 2 indicates only the articles categorized as theoretical

Caption: This table indicates the final list of theoretical articles that were included in the literature review and used in the latent content analysis. The four themes include Need for a Broad Concept of Culture, General Adoption of a Deficit-Based Perspective, Unfair and Unrepresentative Standards and Assessments, and Need for Increased Professional Development.

2-3). Another example is offered by Hoover et al. (2018) states “though the literature includes many definitions of and explanations about CLR instruction, most value the features [italics added] of diverse students’ backgrounds, heritages, and ways of learning” (p. 14). Finally, Trainor and Robertson (2022) contend that “a focus on the literal meaning of diversity can be problematic, particularly when the construct of equity remains hidden or underdeveloped in the contexts of research. Disparate outcomes across diverse groups of students flag unequal and deeply seeded issues of status and power. The historical, social, and political realities that make CLD students vulnerable to unequitable educational opportunity have multiple sources that intersect...” (p. 48).

General Adoption of a Deficit-Based Perspective

The idea of contextualizing the experiences of CLD students in terms of a deficit-based perspective is a systematic issue that grows directly out of the dominant cultural narrative, which pervades educational practice as well as educational research. The deficit-based perspective characterizes the academic and behavioral performance of CLD students as being inferior to White students and locates the evidence for improvement in more equal outcomes on evaluative measures without regarding the place of cultural bias of curriculum and assessment itself. Even amongst researchers that aim to address educational and/or behavioral “gaps” between White and CLD students, proposed frameworks often employ a deficit-based perspective, seeking to “equalize” performance

on culturally biased evaluations and outcomes (Castro-Villareal et al., 2016; Driver & Powell, 2017; Kelly et al., 2023; Utley et al., 2011).

Using the White Eurocentric experience as the “standard” or “norm-reference” for classroom-based assessments essentially ensures that the context of ethnocentrism is preserved in the curriculum and related assessments, increasing the likelihood that CLD students will perform incomparably. This theme is made apparent in multiple ways in the extant literature (Artiles, 2015; Bal, 2018; Castro-Villareal, 2016; Cavendish et al., 2016; Cramer et al., 2014; Cramer, 2015; Ford et al., 2014; Kieran & Anderson, 2019; Sciuchetti, 2017; Trainor & Robertson, 2022; Vincent et al., 2011).

Cramer et al. (2014) state “personal factors such as race/ethnicity, socioeconomic status, ability/disability, language proficiency, engagement in school, and student behavior have continually been used to explain poor academic performance...Students who internalize negative views of their group could experience lower than average academic performance. Group identification also may be linked to disengagement in other ways” (pp. 112–114). Similarly, Sciuchetti (2017) suggests “...teachers’ referral decisions for students from CLD backgrounds may be influenced by their perceived efficacy and deficit-based thinking and views. This often occurs in the form of lower expectations for students from backgrounds that do not fit traditional school contexts” (pp. 1247–1248).

This category is further divided into two subcategories that are related but distinct enough to warrant their own analysis. The first subcategory is the disproportionate representation of CLD students in special education classifications resulting in the disproportionate use of punitive based intervention systems (Bal, 2018; Castro-Villareal, 2016; Ford et al., 2014; Kieran & Anderson, 2019; Sciuchetti, 2017; Trainor & Robertson, 2022; Vincent et al., 2011).

Disproportionate representation of CLD students in special education classifications. Disproportionate representation refers to the idea that students of a particular identifier (in this case CLD) are represented in a higher proportion than a comparative identifier (in this case White) (Bal, 2018; Skiba, 2011). This disproportionality may be interpreted as evidencing the perpetuation of a Eurocentric view of academic performance and assessment. Villareal (2016) suggests “disproportionate representation of culturally and linguistically diverse youths in special education is considered one of the most critical issues in the US public school system. Social justice advocates and policy experts are beginning to take note of the unintended impacts that federal policies are having on special education referral and eligibility determination...” (p. 11).

Bal (2018) claims “in the United States, youth from racially minoritized communities—especially African-American, Native American, and Latino—disproportionately receive exclusionary school discipline more severely and frequently for less objective reasons such as disrespect, dress code violations, and excessive noise...” (p. 1).

Racialization of behaviors. Evidence cites that CLD students disproportionately receive intervention for their behavioral challenges rather than their learning challenges (Bal, 2018; Fallon et al., 2022; Hines et al., 2018; Skiba et al., 2011). Vincent et al. (2011) suggests, “disproportionate discipline outcomes for students from culturally and linguistically diverse backgrounds, especially students from African-American backgrounds, are a widely documented and well-known reality of the US public school system...compared to White students, African American students are disciplined at a disproportionate rate, repeatedly, and more severely...Latino students tend to be underrepresented among students who are referred to the office in elementary school but are suspended at a disproportionately higher rate compared to White students in secondary school” (p. 219).

Unfair and Unrepresentative Standards and Assessments

The hallmark of all the legislative efforts of the 21st century was the centrality of evidence and accountability. Despite the importance of evidence-based practices as a component to educational research before No Child Left Behind (2001), this terminology became commonplace in virtually all subsequent educational practice and legislative initiatives. Significant examples included the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) and Every Student Succeeds Act (ESSA, 2015), as well as the most sweeping public school federal funding initiative Race to the Top, implemented as part of the American Recovery and Reinvestment Act (2009).

Although the purported impetus for these enhanced accountability efforts was to target the racial and ethnic-based achievement gap and ensure that all students, especially those who were considered perpetually “underperforming,” were receiving high-quality educational methods, a concerning byproduct was the reinforcement of dominant cultural ideologies which were engrained in both the curricular and assessment initiatives that came with it. Instead of earnestly addressing the achievement gap from a sociocultural perspective, these purportedly “cutting-edge” curricular ideas and materials only deepened the gap by failing to consider the role that cultural responsiveness plays in acquisition and assessment of skills. These cultural discrepancies were

observed most notably in inequitable referral practices, disconnect between standardized assessments and cultural norms, and inattention to culturally relevant terms, all of which disproportionately affected CLD students (Ford et al., 2014; Hernandez Finch, 2012; O'Keefe & Medina, 2016; Orosco & O'Connor, 2014; Utley et al., 2011). Though this idea was alluded to in the previous theme, it warrants its own outline of evidence.

Ford et al. (2014) suggests "in the United States, there continues to be an emphasis on norm-referenced standardized tests which may be culturally and socially biased and often do not accurately assess the abilities of CLD students" (p. 57). Further supporting this idea, Orosco and O'Connor (2014) state "although [diverse students] bring a wealth of social capital in the classroom, these students are often faced with (a) limited working knowledge of the dominant culture, (b) instructional approaches that mirror a dominant society's practices and perspectives, (c) the lack of affirmation and uses of these students' rich cultural and linguistic capital in materials and reading passages, and (d) their teachers' limited knowledge of culturally responsive practices and skills in drawing this knowledge out" (p. 516). Finally, O'Keefe and Medina (2016) claim "Eurocentric teaching styles, which rely heavily on narrowed curriculum and exam-based instruction are used more commonly than culturally responsive teaching techniques that foster multicultural strength-based approaches where all students are included and expected to achieve" (p. 73).

Need for Increased Culture-Based Professional Development

A pressing issue evident in educational practice and preserved in many educational policies is the cultural disconnect between educational personnel, including administration and teaching staff, and the student body which they serve in public school contexts (NSA, 2023; NCES, 2022). This disconnect perpetuates the Eurocentric norm for both behavior and academic achievement and creates challenges for implementing culturally responsive pedagogical methods for teachers who do not match their students' cultures (Greenleafs et al., 2024; Moore et al., 2021; O'Keefe & Medina, 2016). As the aforementioned statistics demonstrate, while roughly half of the students in American public schools are not White, the vast majority of the administration and educational personnel are White (NCES, 2022, SSA, 2023). Such cultural disconnect can simultaneously preserve the culturally dominant perspectives and practices, both tacitly and explicitly, thus marginalizing those of the other cultures represented in the community.

Because the influence that culture plays on people's thoughts, beliefs, and behaviors can be both highly complex as well as tacit, this topic deserves attention in both research and practice that falls beyond the scope of this project, the overall themes as they are expressed and conceptualized in the extant literature will be related. In this vein, the extant theoretical literature is heavily indicative of the idea that increased availability of professional development for teachers, specifically programs that focus on allowing teachers to examine their own cultures as well as their tacit beliefs and biases about other cultures, are necessary (Ford et al., 2014; Hernandez Finch, 2012; Kieran & Anderson, 2019; O'Keefe & Medina, 2016; Orosco & O'Connor, 2014; Piazza et al., 2015; Sciuchetti, 2017; Utley et al., 2011; Vincent et al., 2011; Wei et al., 2022).

Hernandez Finch (2012) state "an intentionally culturally responsive educational system must be built to include intensive professional development on culturally responsive effective practices that go beyond cultural appreciation activities....Teachers and psychologists must examine their own views and practices around issues of social justice, race, and students from disparate backgrounds" (p. 287). Further supporting this finding, Orosco and O'Connor (2014) suggest "many teachers, who are largely middle-class European American, often enter the teaching profession with racial, ethnic, and class prejudices of which they are unaware. Prevalent among them are the stereotypical beliefs of CLD students, cultural dissonance and negative perceptions of home environments, which influence their decision making" (p. 58). Finally, Kieran and Anderson (2019) contend "awareness...includes the teacher's knowledge of their [own] personal cultural experiences, perspectives, and biases....The goal of this awareness is to recognize systemic oppression and understanding one's role in changing these patterns to promote social justice and systems change" (p. 1208).

Discussion

The current study culled articles published between 2011 and 2022 addressing Culturally Responsive Pedagogy and Learning Disabilities to determine trends and themes. Of the 24 articles, 6 included empirical studies of CRP methods for CLD children with Learning Disabilities. The finding that there is a dearth of empirical studies addressing cultural responsiveness and Learning Disabilities is consistent with other findings in the literature (Lavin et al., 2020; Lei et al., 2020; Orosco & O'Connor, 2014). This research project extended current analyses in the extant literature by investigating themes in theoretical frameworks. The content analysis identified four major

themes from the remaining 18 theoretical articles: (a) the need for a broader concept of culture; (b) general adoption of a deficit-based perspective; (c) unfair and unrepresentative standards and assessments; and (d) need for increased professional development.

Limitations

There are some limitations that must be considered regarding this content analysis. First, the researcher was limited to the articles that were available in full-text format through subscribed services. Though there were additional articles that could have potentially been included in the analysis, some remained inaccessible to the various database subscriptions available. Second, many of the articles did not distinguish between the needs of various types of CLD students. That is, the needs of English Language Learners were not necessarily distinguished from the needs of Black, native Latinx, Native American or other potential CLD students. Additionally, it cannot be assumed that the specific sociocultural experiences are entirely comparable between students of a like identifier (for example Mexican versus Colombian students who are considered Hispanic, or native versus immigrant Black students) or intragroup differences (i.e., not all Black students have the same experiences). Assuming experiential similarity based on identifier would be employing the same misguided assumption that was criticized in the research itself.

It is also possible that the empirical articles operated from a theoretical framework as well, and so the distinction between empirical and theoretical must be considered with caution. Further analysis of the empirical articles to determine if and what theoretical framework was employed in the intervention would be beneficial to a more comprehensive understanding of the issue.

Finally, as with any qualitative study, the researcher is operating from a place of bias as well. As King (2017) suggests:

[researchers do not] check our identities at our door; rather moral considerations, or the lack thereof, linked to our identities and interests are always already shaping our inquiries...it is a matter of whether we reflexively acknowledge that fact or not (p. 217).

Implications for Future Research

Research involving content analyses can contribute to organizing findings between multiple articles and generating suggestions about which areas of research appear to be consistently addressed; however, it is not empirical. Rather, the role of content analyses is best suited to informing future empirical research and

instructional methodologies about areas of promise in which more sophisticated investigations and studies could be useful and beneficial. Three main suggestions will be provided: (a) theoretical work developing more precise and socioculturally relevant definitions of cultural and linguistic diversity, (b) means of assessing student progress that are sensitive to and inclusive of multiple means of responding based on cultural differences, and (c) the designing and implementation of research-based professional development programs that effectively target cultural awareness in terms of authentic critical reflection. See Table 3 for a visual representation of suggestions. Though these suggestions are being emphasized in this work, this emphasis is in no way indicative that there are no other conclusions that can be drawn from the analysis, nor should they necessarily be regarded as the most important.

Table 3

Suggestions for Future Research

1. Theoretical work developing more precise and socioculturally relevant definitions of cultural and linguistic diversity.
2. Means of assessing student progress that are sensitive to and inclusive of multiple means of responding based on cultural differences.
3. The designing and implementation of research-based professional development programs that effectively target cultural awareness in terms of authentic critical reflection.

One challenge that was presented in multiple articles included in the analysis was the lack of precision with which the term *diversity* is defined, and that one major problem was that it is typically defined in legislation and policy from an “identity” basis (e.g., skin color, language proficiency, ethnicity, etc.) rather than in terms of sociocultural marginalization of particular groups. Identity-based distinctions may be easier to organize categorically but they fail to capture the greater social processes that lead to marginalization and therefore maintain the idea that decreasing an achievement gap is demonstrated by having CLD children perform more comparably with White children on norm-referenced assessments that do not consider cultural responsiveness.

Increasing the sophistication of defining diversity will not only capture its complexity more accurately but will also potentially allow for multiple means of measuring student achievement that are more culturally relevant and reflective of various engagement styles. A clear trend indicated in the

literature was the pervasive nature of dominant cultural ideals in educational materials and assessment practices. This type of approach preserves the ethnocentric focus of the White middle-class standard as the “norm,” structuring success to be systematically distinct from other cultures’ educational paradigms and belief systems. This goes beyond simply using racial and ethnic names in stories and math word problems, but broadening visual literacies, embracing multiple types of responding, engagement, and communication styles, and utilizing multiple means of family support that are culturally reflective (such as recognizing the difference between collectivistic and individualistic educational behaviors).

Finally, because it has been shown in multiple ways that the influence of one’s culture can be tacit and difficult to name, it is essential that schools and teachers are given the opportunity to engage in training that authentically allows them to explore intersections between their cultural belief systems and their teaching practices, especially when they are inconsistent with their students’ cultures. This type of professional development must include disarming the notion of biases and must be critically reflective and inquiry based. It must also consider the sensitive nature of the topic and allow teachers to engage and approach these topics incrementally and in their own time. As such, these professional development programs must not be sporadic and piecemeal but must be systematic and developmental to allow for increasingly deeper reflection on the part of the teacher.

Implications for Practice

While it is important to ensure that practices proceeding from research are carefully implemented within the context of the findings, the current study can offer some insights for practice in addition to research. First, because the current study implies that teachers often defer to addressing students’ disabilities rather than their culture, practitioners can use these findings as a means of critical reflection as to whether they employ this bias and implement subsequent changes in their practice if they do. Second, because appropriate and meaningful professional development programs are essential to implementing culturally responsive practices, administrators can use these findings to seek or design meaningful professional development opportunities. Third, because evidence suggests that curriculum-based assessment practices can be deeply steeped in dominant cultural perspectives, districts can use these findings as a basis for evaluating their current assessment practices for elements of cultural unresponsiveness. Based on the findings, curricular and assessment practices can be revised. Finally, research is clear that culturally responsive methods are effective at

increasing CLD students’ socioemotional well-being as well as their academic performance. Because attention to both of these matters is essential in any effective curriculum, culturally responsive practices provide an important and viable framework.

Conclusion

Although it is clear that much additional research is needed to better understand the experiences of CLD students with Specific Learning Disabilities, this content analysis demonstrates that particular themes are evident in the extant literature. Identifying and developing these themes can contribute to a more organized and systematic approach to empirical and theoretical studies. Developing a better and broader concept of culture, and by extension cultural diversity, will allow for a more sophisticated understanding of CLD students’ experiences, including the commonality of deficit-based perspectives. The increasing presence of CLD students as well as the maintenance of a predominantly White school personnel enhances the urgency of this research. Once these experiences are more broadly and deeply understood, designing fairer, more representative, and more effective methodologies of instruction, assessment, and professional development for teachers of CLD students with SLD will be increasingly achievable.

References

- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 2, n.p. <https://doi.org/10.1016/j.glmedi.2024.100051>
- American Reinvestment and Recovery Act. (2009). <https://www.fcc.gov/general/american-recovery-and-reinvestment-act-2009>
- Artiles, A. J. (2015). Beyond responsiveness to identity badges: Future research on culture in disability and implications for Response to Intervention. *Educational Review*, 67(1), 1–22.
- Bal, A. (2018). Culturally responsive positive behavioral interventions and supports: A process-oriented framework for systemic transformation. *The Review of Education, Pedagogy, and Cultural Studies*. <https://doi.org/10.1080/10714413.2017.1417579>.
- Biagas, D., Collins, B. C., & Hillard, L. W. (2024). Perceptions of culturally and linguistically diverse exceptional students regarding their individual transition plans. *Preventing School Failure: Alternative Education for Children and Youth*, 1–10.
- Castro-Villareal, F., Villareal, V., & Sullivan, J. R. (2016). Special education policy and Response to Intervention: Identifying promises and pitfalls to advance social

- justice for diverse students. *Contemporary School Psychology*, 20, 10–20.
- Cavendish, W., Harry, B., Menda, A. M., Espinosa, A., & Mahotier, M. (2016). Implementing response to intervention: Challenges of diversity and system change in a high-stakes environment. *Teachers College Record*, 118, 1–36.
- Cramer, L. (2015). Inequities of intervention among culturally and linguistically diverse students. *Perspectives on Urban Education*, 12(1). <https://files.eric.ed.gov/fulltext/EJ1056724.pdf>.
- Cramer, E. D., Pellegrini-Lafont, C., & Gonzalez, L. (2014). Towards culturally responsive and integrated instruction for all learners: The integrated learning model. *Interdisciplinary Journal of Teaching and Learning*, 4(2), 110–124.
- Cressey, J. (2019). Developing culturally responsive social, emotional, and behavioral supports. *Journal of Research in Innovative Teaching & Learning*, 12(1), 53–67.
- Davis, S. M. (2018). The aftermath of #BlackGirlsRock vs. #WhiteGirlsRock: Considering the disrespectability of a Black woman's counterpublic. *Women's Studies in Communication*, 41, 269–290.
- Dennis, M. S., Sorrells, A. M., Chovanes, J., & Kiru, E. W. (2022). Ecological and population validity of mathematics interventions for diverse students with low mathematics achievement: A meta-analysis. *Learning Disability Quarterly*, 45(1), 32–45. <https://doi.org/10.1177/07319487211010342>
- Every Student Succeeds Act. (2015). <https://www.ed.gov/essa?src=rn#:~:text=The%20Elementary%20and%20Secondary%20Education,was%20a%20civil%20rights%20law>
- Fallon, L. M., DeFouw, E. R., Catchart, S. C., Berkman, T.S., Robinson-Link, P. et al. **LIST UP TO 20 AUTHORS (2022)**. School-based supports and interventions to improve social and behavioral outcomes with racially and ethnically minoritized youth: A review of recent quantitative research. *Journal of Behavioral Education*, 31(1), 123–156.
- Ford, B. A., Stuart, D. H., & Vakil, S. (2014). Culturally responsive teaching in the 21st century inclusive classroom. *The Journal of the International Association of Special Education*, 15(2), 56–62.
- Freeman-Green, S., Driver, M. K., Wang, P., Kamaru, J., & Jackson, D. (2021). Culturally sustaining practices in content area instruction for CLD students with learning disabilities. *Learning Disabilities Research & Practice*, 36(1), 12–25.
- Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.
- Georgan, W. C., Archibald, L. M. D., & Hogan, T. P. (2023). Speech/language impairment or specific learning disability? Examining the usage of educational categories. *Journal of Speech, Language, and Hearing Research*, 66, 656–667. https://doi.org/10.1044/2022_JSLHR-21-00636
- Greenlees, L. O., Lara, D. N., Carrizales, D., & Beach, W. (2024). Teacher candidates' Culturally Responsive Teaching self-efficacy and attributional development: A multi-methods study. *Teacher Educators' Journal*, 17, 126–152.
- Grigorenko, E., Compton, D., Fuchs, L., Wagner, R., Wilcutt, E. **et al. LIST UP TO 20 AUTHORS (2020)**. Understanding, educating, and supporting children with Specific Learning Disabilities: 50 years of science and practice. *American Psychologist*, 75(1), 37–51.
- Hernandez Finch, M. E. (2012). Special considerations with Response to Intervention and instruction for students with diverse backgrounds. *Psychology in the Schools*, 49(3), 285–296.
- Hines, D. E., King Jr., R., & Ford, D.Y. (2018). Black students in handcuffs: Addressing racial disproportionality in school discipline for students with dis/abilities. *Teachers College Record*, 120, 1–24.
- Hoover, J. J., Erickson, J. R., Patton, J. R., Sacco, D., & Tran, L. M. (2018). Examining IEPs of English learners with learning disabilities for cultural and linguistic responsiveness. *Learning Disabilities in Research & Practice*, 34(1), 14–22.
- Individuals with Disabilities Education Improvement Act. (2004). <https://sites.ed.gov/idea/about-idea/>
- IRISCenter. (2025). *What do teachers need to know about students who are learning to speak English*. <https://iris.peabody.vanderbilt.edu/module/ell/cresource/q1/p01/>
- Juarez, S. W., Chaparro, G., Rios-Aguilar, C., & Guarneros, N. (2024). Parental expectations of postsecondary outcomes for diverse students with learning disabilities: A funds of knowledge and social capital approach to transition planning. *Journal of Latinos & Education*, 22(1), 41–56.
- Kelly, J., Kunkel, A., Smith, A., Gerzel-Short, L., Park, S., & Moore, A. (2023). The role of culture in reading comprehension interventions for students with learning disabilities: A systematic review. *Learning Disabilities: A Contemporary Journal*, 21(1), 17–36.
- Kieran, L., & Anderson, C. (2019). Connecting Universal Design for learning with culturally responsive teaching. *Education & Urban Society*, 51(9), 1202–1216.
- King, J. E. (2017). 2015 AERA Presidential Address: Morally engaged research/ers dismantling epistemological

- nihilation in the age of impunity. *Educational Researcher*, 46(5), 211–222.
- Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying content analysis. *American Journal of Pharmaceutical Education*, 84(1), 7113–7119.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491.
- Lavin, C. E., Mason, L. H., LuSuer, R., Haspel, P. (2020). The dearth of published intervention studies about English language learners with learning disabilities or emotional and behavioral disorders in special education. *Learning Disabilities: A Multidisciplinary Journal*, 25(1), 18–28.
- Lei, Q., Mason, R. A., Xin, Y. P., Davis, J. L., David, M., & Lory, C. (2020). A meta-analysis of single-case research on mathematics word problem-solving interventions for English learners with learning disabilities and mathematics difficulties. *Learning Disabilities Research & Practice*, 35(4), 201–217.
- Maki, K. E., & Adams, S. R. (2018). A current landscape of specific learning disability identification: Training, practices, and implications. *Psychology in the Schools*, 56(1), 18–31.
- Moore, A. L., Giles, R. M., & Vitulli, P. (2021). Prepared to respond? Investigating preservice teachers' perceptions of their readiness for Culturally Responsive Teaching. *International Journal for the Scholarship of Teaching and Learning*, 15(1), 1–7.
- National Center for Education Statistics. (2022). *Racial/ethnic enrollment in public schools*. <https://nces.ed.gov/programs/coe/indicator/cge/racial-ethnic-enrollment>.
- O'Keefe, S. B., & Medina, C. M. (2016). Nine strategies for helping middle school students weather the perfect storm of disability, diversity, and adolescence. *American Secondary Education*, 44(3), 72–87.
- Orosco, M. J., & O'Connor, R. (2014). Culturally responsive instruction for English language learners with learning disabilities. *Journal of Learning Disabilities*, 47(6), 515–531.
- Piazza, S. V., Rao, S., Protacio, M. S. (2015). Converging recommendations for culturally responsive literacy practices: Students with learning disabilities, English language learners, and socioculturally diverse learners. *International Journal of Multicultural Education*, 17(3), 1–20.
- Premo, E., Pilarz, A. R., & Lin, Y. (2023). Pre-kindergarten teachers' family engagement practices and English language learners' attendance and early listening skills: Exploring the role of the linguistic context. *Early Childhood Research Quarterly*, 63, 1–14.
- Rodriguez, A., & Rodriguez, D. (2017). English learners with learning disabilities: What is the current state? *Insights into Learning Disabilities*, 14(1), 97–112.
- School Superintendents Association (SSA). (2023). *AASA Superintendent Salary & Benefits Study*. <https://files.eric.ed.gov/fulltext/ED626993.pdf>.
- Sciuchetti, M. B. (2017). Addressing inequity in special education: An integrated framework for culturally responsive social emotional practice. *Psychology in the Schools*, 54, 1245–1251.
- Skiba, R., Horner, R., Chung, C. G., Rausch, M. K., May, S. L. et al. LIST UP TO 20 AUTHORS (2011). Race is not neutral: A national investigation of African-American and Latino disproportionality in school discipline. *School Psychology Review*, 40(1), 85–107.
- Trainor, A. A., & Robertson, P. M. (2022). Culturally and linguistically diverse students with learning disabilities: Building a framework for addressing equity through empirical research. *Learning Disability Quarterly*, 45(1), 46–54.
- United States Department of Education. (2021). <https://www.edweek.org/teaching-learning/the-english-learner-student-population-in-charts/2024/06>
- Utley, C. A., Obiakor, F. E., & Bakken, J. P. (2011). Culturally responsive practices for culturally and linguistically diverse students with learning disabilities. *Learning Disabilities: A Contemporary Journal*, 9(1), 5–18.
- Vincent, C. G., Randall, C., Cartledge, G., Tobin, T. J., & Swain-Bradway, J. (2011). Toward a conceptual integration of cultural responsiveness and schoolwide positive behavior support. *Journal of Positive Behavioral Interventions*, 13(4), 219–229.
- Wei, Y., Hovey, K. A., Gerzel-Short, L., Hsiao, Y., Miller, R. D., & Kelly, J. H. (2022). Culturally responsive and high-leverage practices: Facilitating effective instruction for English learners with learning disabilities. *TESOL Journal*. <https://onlinelibrary.wiley.com/doi/epdf/10.1002/tesj.697>
- Young, N. A. E. (2021). *Childhood disability in the United States: 2019*. American Community Survey Briefs, U.S. Census Bureau.
- Zablotsky, B., Black, L., Maenner, M., Schieve, L., Danielson, M. (2019). Prevalence and trends of developmental disabilities among children in the US: 2009–2017. *Pediatrics*, 144(4).

Eric Shyman is chair and professor in the Education Department at St. Joseph's University.
 Please send correspondence to eshyman@sjny.edu

Learning Strategies, Motivation, and Test Anxiety among Students with Specific Learning Disabilities, ADHD, and Typical Comparison

Jiyeon Lee

This study examined relations among learning strategies, academic motivation, and test anxiety in elementary students with or at risk for specific learning disabilities (SLD), attention-deficit/hyperactivity disorder (ADHD), co-occurring SLD+ADHD, and students without disabilities. Participants were 89 students in Grades 3–5 from two public schools. Groups included students with formal diagnoses and students identified as at risk for SLD and/or ADHD. Learning strategies, academic motivation, and test anxiety were assessed using the School Motivation and Learning Strategies Inventory (SMALSI). Results of this study indicated that students with SLD+ADHD demonstrated the greatest difficulties, including note-taking strategies, lower academic motivation, and higher test anxiety compared with peers. Test anxiety in Grade 5 was associated with academic difficulties (SLD and SLD+ADHD), whereas students with ADHD showed higher test anxiety particularly in earlier grades. Across the groups, higher test anxiety was significantly associated with less effective study strategies and lower academic motivation. Findings underscore the need to address cognitive, metacognitive, and emotional factors concurrently. This study highlights the educational implication that incorporating cognitive, metacognitive, and emotional supports can enhance academic outcomes for students with or at risk for SLD and/or ADHD.

Keywords: *Learning strategies, academic motivation, test anxiety, at risk, ADHD, specific learning disabilities*

Introduction

Students with specific learning disabilities (SLD) and attention deficit hyperactivity disorder (ADHD) face a unique set of challenges that significantly impact their academic performance and social development. These challenges often manifest as difficulties in cognitive processing, metacognition, learning strategies, academic motivation, and emotional regulation. The interplay of these factors creates a complex educational environment that requires targeted interventions to support these students effectively. Understanding the nature of these challenges and the efficacy of various interventions is crucial for developing comprehensive educational strategies that cater to the needs of students with SLD and ADHD.

Cognitive processing and metacognitive skills are essential components of effective learning. Students with SLD and ADHD often struggle with these skills, which can hinder their ability to process information efficiently

and regulate their learning strategies. Metacognition, the awareness and control of one's cognitive processes, is particularly important for these students (Boyle et al., 2016; Fisher et al., 2022). Research indicates that effective metacognitive strategies can significantly enhance reading comprehension and overall academic performance in students with learning disabilities by helping them monitor and regulate their learning processes (Chevalier et al., 2017). For instance, explicit instruction in metacognitive strategies has been shown to help students with learning disabilities monitor and regulate their learning processes, leading to improved academic outcomes (Chevalier et al., 2017). Furthermore, Basile et al. (2021) emphasizes the importance of considering both cognitive and emotional factors in interventions for students with ADHD. It highlights the metacognitive deficits in emotion recognition and suggests strategies to address these issues, underscoring the need for comprehensive support that combines cognitive and emotional components to enhance academic outcomes.

Similarly, students with ADHD benefit from interventions that focus on improving self-regulation and executive functions. Self-monitoring techniques can enhance focus and academic performance by helping them observe and adjust their behaviors. According to Hartung et al. (2022), cognitive-behavioral interventions (CBI) are effective in improving executive function such as planning, organization, impulse control, and self-regulation among college students with ADHD.

Learning Strategies and Study Skills for Students with SLD and ADHD

Developing effective learning and study skills is crucial for students with SLD and ADHD to manage their learning challenges and achieve academic success. These skills encompass various strategies and tools that help students process information, retain knowledge, and perform well academically.

Note-Taking Skills

Note-taking is a fundamental study skill that significantly impacts students' ability to retain and comprehend information. Students with SLD and ADHD often struggle with traditional note-taking methods due to slower processing speeds, handwriting difficulties, short-term memory, and attention difficulties (Boyle, 2010; Oefinger & Peverly, 2020). The introduction of assistive technologies has shown promise in enhancing note-taking efficiency and comprehension. Studies have demonstrated that assistive technologies such as smartpens can help students with disabilities record more comprehensive notes and improve lecture recall, thereby facilitating better learning outcomes (Boyle & Joyce, 2021; Joyce & Boyle, 2020). The smartpen technology allows students to record verbal information and sync it with their handwritten notes, providing an opportunity to amend and complete their notes after the lecture. This technology is particularly beneficial for students with slow processing speeds and writing difficulties, as it reduces the cognitive load during note-taking and enhances the quality of their notes. Boyle and Joyce (2021) found that students with SLD using smartpens recorded significantly more words in their notes and recalled more information compared to the control groups, demonstrating the effectiveness of the assistive technology in enhancing note taking and recall ability for students with SLD.

Organization Skills

Students with ADHD, especially those with inattentive subtype, often exhibit deficits in organization skills, impacting their ability to plan and prioritize tasks (LaCount et al., 2018). Interventions that focus on

enhancing planning skills through structured activities and practical tools can help mitigate these deficits and improve academic performance (Boyer et al., 2018). For instance, using graphic organizers can assist students in visualizing and structuring information, making it easier to comprehend and retain complex concepts (Englert et al., 2009). Additionally, providing explicit instruction in organizational strategies, such as creating to-do lists, setting deadlines, and breaking tasks into smaller, manageable steps, can help students with SLD and ADHD develop better organizational habits and improve their overall academic performance. Furthermore, implementing a calendar and to-do list system is essential for helping college students with ADHD develop organizational skills. These strategies significantly enhance students' ability to prioritize tasks and improve academic outcomes (Hartung et al., 2022).

Test-Taking Skills

Students with ADHD face significant challenges in academic settings due to difficulties with concentration, time management, and self-regulation, resulting in poorer learning and study strategies, including test-taking skills (Reaser et al., 2007). Additionally, Test anxiety is a significant factor that might impair the performance of students with ADHD, particularly on high-stakes exams, as higher test anxiety is consistently associated with lower performance on individual tests and standardized achievement test scores (Lewandowski et al., 2015). Additionally, providing targeted interventions, such as strategies for managing test anxiety, improving accuracy, and effective time management during exams, can help students with ADHD perform better on tests and achieve higher academic outcomes (Lewandowski et al., 2015). These test-taking strategies are essential for addressing the specific challenges faced by students with ADHD, helping them to perform more accurately and effectively during exams.

Time Management Skills

Recent research found that students with ADHD have notable difficulties in managing their time, maintaining concentration, and self-regulating compared to their peers without disabilities and those with learning disabilities (Reaser et al., 2007). These challenges hinder their ability to plan and complete tasks efficiently, resulting in lower academic achievements. To address these issues, incorporating strategies such as maintaining a weekly planner, setting study goals, and utilizing note-taking to improve concentration and time management skills (Reaser et al., 2007, Zentall, 2013). Similarly, LaCount et al. (2018) reported that college students with ADHD,

particularly those with the inattentive subtype (ADHD-I), exhibit significant deficits in planning tasks as part of broader issues with organization, time management, and planning (OTMP) skills. These deficits contribute to the observed difficulties in academic achievement among these students. Interventions targeting OTMP skills can potentially improve academic functioning and reduce ADHD symptomatology (e.g., inattention, hyperactivity/impulsivity, and academic impairment following an intervention) (LaCount et al., 2018). Additionally, self-monitoring strategies, such as tracking time spent on tasks and reflecting on productivity, are crucial for improving OTMP skills (Hartung et al., 2022). By incorporating self-monitoring into their routines, students can enhance their academic performance and better manage the executive function deficits associated with ADHD.

Academic Motivation and Emotional Factors

Recent research underscores the importance of understanding the relationship between ADHD symptoms, motivation, and learning strategies to guide effective interventions in educational settings (Simon-Dack et al., 2016). Students with ADHD tend to favor surface learning strategies and are less motivated by deep engagement with the material, which negatively impacts their academic achievement (Carlson et al., 2002; Daley & Birchwood, 2010). These students often rely on external feedback rather than internal motivation, leading to less effective study habits. To improve academic outcomes, interventions should focus on enhancing intrinsic motivation and promoting deep learning strategies, such as through positive reinforcement, collaborative learning, and structured study environments (Raggi & Chronis, 2006; Simon-Dack et al., 2016). These methods can help ADHD students become more engaged and successful in their educational pursuits. Furthermore, the ability to accurately recognize and interpret emotions is crucial for social competence and academic success, particularly for children with ADHD who often face challenges in this area. Research indicates that while children with ADHD exhibit high confidence in their emotion recognition abilities, their actual accuracy in identifying these emotions does not align with their confidence levels (Basile et al., 2021). Specifically, students with ADHD demonstrated lower resolution in emotion recognition (Chronaki et al., 2015; Collin et al., 2013). Basile et al. (2021) suggests that cognitive-behavioral strategies focusing on self-reflection and performance calibration may be beneficial. By helping students with ADHD improve their ability to accurately assess their performance and adjust their confidence levels accordingly, these strategies can enhance their social competence and decision-making skills. By

refining their ability to accurately identify and respond to various emotional cues, these children can improve both their social interactions and academic outcomes, making emotional recognition a key area of focus in interventions aimed at supporting students with ADHD.

Methods

Participants

A total of 89 students (40 boys, 49 girls) from two public elementary schools participated in this study. Students were in third grade ($n = 25$), fourth grade ($n = 41$), and fifth grade ($n = 23$), and ranged in age from 8 to 11 years. Following school administrative approval, 14 general education classroom teachers were asked to nominate students who had been formally identified with SLD and/or ADHD, or who were considered at risk for SLD and/or ADHD based on classroom observations and instructional history. To maintain confidentiality, the names of nominated students were not shared with the research team until written parental consent was obtained. After parental consent was obtained, nominated students were further screened for eligibility through a review of school-records and teacher-completed behavioral ratings using the Conners 3rd Edition–Teacher Short Form (Conners 3-T(S); Conners, 2009). All nominated students were rated by their primary classroom teacher. Students were included in the study if they met criteria for one of the following classification groups.

Students With or At-Risk for SLD Group

Students were placed in this group if they had (a) a formal identification of SLD or (b) academic performance at or below the 30th percentile in both English Language Arts and Mathematics on the state standardized achievement test. This percentile cutoff is commonly used as a benchmark for academic risk and is consistent with criteria applied in Response to Intervention (RTI) identification models (Fletcher et al., 2007), due to comparable underlying skill deficits, academic characteristics, and responsiveness to intervention observed in students with SLD and those at risk for SLD (Lee & Zentall, 2012; Shaywitz et al., 2008). 19 students met these criteria (11 boys, 8 girls); 57.9% had a formal diagnosis of SLD, and 42.1% were identified as at risk.

Students With or At-Risk for ADHD Group

Students were included in this group if they received a T-score of 60 or higher on either the Cognitive Problems/Inattention or Hyperactivity subscale of the Conners 3rd Edition, a cutoff reflecting moderate to clinically significant concerns (Conners 3-T(S); Conners, 2009). Among the

19 students in this group (7 boys, 12 girls), 31.6% had a formal clinical diagnosis of ADHD on record, and 68.4% were identified as at risk based on elevated teacher ratings. Including students identified as at risk is supported by research indicating functional similarities with diagnosed peers in academic and behavioral challenges (Loe & Feldman, 2007; Zentall & Beike, 2012).

Students With Combined SLD and ADHD Group

This group comprised students who met both the academic and behavioral criteria described above. Specifically, they scored at or below the 30th percentile in English Language Arts and Mathematics and received a T-score of 60 or higher on either Conners 3-T(S) subscale. The final combined group included 28 students (17 boys, 11 girls); 68% had formal diagnoses of SLD and/or ADHD and 32% were identified as at risk. Within this group, 54% in the clinical range (≥ 80), 32% had behavioral T-scores in the borderline-clinical range (70–79), and the remaining 14% scored between 60 and 69.

Students Without Disabilities (ND) Comparison Group

The comparison group included 23 students (5 boys, 18 girls) who did not meet criteria for SLD or ADHD. These students scored above the 35th percentile on the state achievement test in reading or language arts and had T-scores below 50 on both relevant Conners 3-T(S) subscales.

Across the groups, students' demographic data including age, gender, race/ethnicity, primary language,

disability classification, and standardized test scores were obtained from school records. Group-specific demographic comparisons are presented in Table 1.

Exclusion Criteria

Students were excluded if school records indicated a hearing impairment, speech/language impairment, emotional disturbance, seizure disorder, or another health-related condition that could interfere with participation. Students who were English learners (recorded in school files as ESL) were also excluded to minimize confounding related to language proficiency.

Motivation and Learning Strategies Assessment

School Motivation and Learning Strategies Inventory (SMALSI)

The School Motivation and Learning Strategies Inventory-Child Form (SMALSI-Child) was utilized to assess various aspects of academic motivation and learning strategies among the participants. The SMALSI-Child contains 147 items that evaluate nine key areas including (1) study strategies (e.g., selecting important information, memory strategies), (2) note-taking/listening skills (e.g., important information, organizing notes, efficiency), (3) reading comprehension strategies (e.g., previewing texts, self-quizzing, mapping ideas), (4) writing/research skills (e.g., organized plan, integrate ideas, revisions), (5) test-taking strategies (e.g., allocate time, eliminating choice), (6) organizational techniques and time management (e.g., organizing class and study materials, structure assignments,

Table 1
Demographic and Descriptive Characteristic of Participants

Variables	ND (<i>n</i> =23)		SLD (<i>n</i> =19)		ADHD (<i>n</i> =19)		ADHD+SLD (<i>n</i> =28)		<i>F</i>	<i>p</i>
	<i>N</i>	%	<i>n</i>	%	<i>N</i>	%	<i>n</i>	%		
Gender									3.43	.021
Boys	5	21.7	11	57.9	7	36.8	17	60.7		
Girls	18	78.3	8	42.1	12	63.2	11	39.3		
Grade									.13	.943
3 rd	8	34.8	6	31.6	2	10.5	9	32.1		
4 th	9	39.1	6	31.6	15	78.9	11	39.3		
5 th	6	26.1	7	36.8	2	10.5	8	28.6		
Ethnicity									.98	.403
African American	5	21.7	6	31.6	6	31.6	10	35.7		
Caucasian	15	65.2	10	52.6	8	42.1	6	21.4		
Hispanic	0	0	2	10.5	3	15.8	6	21.4		
Multi-cultural	3	13.1	1	5.3	2	10.5	6	21.5		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Age (Months)	119.09	10.76	123.26	11.12	120.32	8.10	122.25	10.44	.73	.537

assignment completion), (7) academic motivation (e.g., intrinsic motivation), (8) test anxiety (e.g., worry and emotionality), and (9) concentration/attention difficulties (e.g., maintaining concentration and attention during academic tasks). The questionnaire ratings range from 1 (never) to 4 (almost always) in the format of a Likert scale. The majority of alpha coefficients for SMALSI-Child form was above .75 (Stroud & Reynolds, 2014).

The SMALSI-Child is widely recognized for its comprehensive assessment of both cognitive and metacognitive strategies, as well as motivational and emotional aspects that impact academic performance. Its robust psychometric properties make it an effective tool for identifying strengths and areas of need in students with and without learning disabilities.

Data Collection Procedure

The data collection was conducted outside the participants' classrooms in a small group setting. Once the students were acclimated to the surroundings, the researcher provided instructions explaining that they would answer questions about their learning strategies, feelings, preferences, and frequency of certain activities. It was emphasized that there were no right or wrong answers to the questions. The students were informed that they would follow directions pre-recorded on a tape recorder and were asked not to talk or share their answers with each other until all questionnaires were completed.

All questions in the questionnaires were pre-recorded on a tape recorder, with a 5-second pause between each question. If specific students needed more than 5 seconds to finish answering a question, the researcher manually provided additional time by controlling the tape recorder.

Students participated in two assessment sessions, each lasting 45 minutes, to complete the questionnaires.

Results

The Multivariate Analysis of Variance (MANOVA) was initially conducted to examine the between-group factors of disabilities (SLD, ADHD, ADHD+SLD, and ND) and grade levels (3rd, 4th, and 5th) for the dependent SMALSI variables. These variables included study strategies, note-taking/listening strategies, reading/comprehension strategies, writing/research skills, test-taking strategies, and time management/organizational techniques. When MANOVA results were significant, univariate analyses were conducted, followed by post hoc tests. Additionally, descriptive and correlational analyses were performed. The means, standard deviations, and intercorrelations among the SMALSI learning strategy variables were examined.

Significant Variables of SMALSI

Group effects were found for note-taking strategies [$F(3, 75) = 2.79, p = .046$], low academic motivation [$F(3, 75) = 8.70, p < .001$], and test anxiety [$F(3, 75) = 7.54, p < .001$] (see Table 2). Students with ADHD+SLD demonstrated lower note taking strategies (*Mean Difference* = -7.24, $p = .032$), lower school motivation (*Mean Difference* = 11.18, $p < .001$), and higher test anxiety (*Mean Difference* = 12.73, $p < .001$) than comparison group (ND). Students with ADHD (without SLD) have higher test anxiety (*Mean Difference* = 9.12, $p = .005$) than comparison group (ND) and it can be significant as early as 4th grade (see Table 3). Students with ADHD were equivalent to students with ND in test anxiety in 5th grade (see Table 4). Task anxiety in 5th grade was associate to the groups with academic difficulties (SLD and ADHD+SLD) (see Figure 1).

Figure 1
Test Anxiety T-Score Mean Comparisons

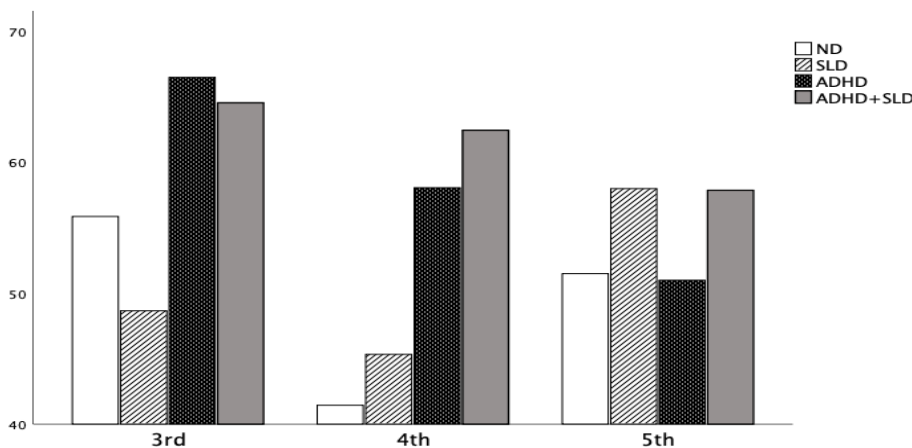


Table 2
ANOVA Table of Significant Between Subjects Effects

SMALSI Variable	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	Partial η^2
Disability					
Note-Taking/Listening Skills	3	385.57	2.79	.046	.098
Low Academic Motivation	3	524.66	8.70	<.001	.253
Test Anxiety	3	772.51	7.54	<.001	.227
Concentration/Attention	3	.78	2.73	<.001	.256
Grade					
Test Anxiety	2	300.64	2.94	.059	.071
Disability * Grade					
Note-Taking/Listening Skills	6	346.27	2.51	.029	.163
Reading/Comprehension	6	275.26	2.39	.036	.157
Test Anxiety	6	227.26	2.22	.049	.147

Table 3
Post Hoc Multiple Comparisons for Disability

Variable	Subtype		Mean Difference	<i>P</i>
Note-Taking/Listening Skills	ADHD+SLD	ND	-7.24	.032
Low Academic Motivation	ADHD+SLD	ND	11.18	<.001
Test Anxiety	ADHD	ND	9.12	.005
	ADHD+SLD	ND	12.73	<.001
Concentration/Attention	ADHD	ND	8.77	.016
	ADHD+SLD	ND	14.74	<.001

Table 4
Post Hoc Multiple Comparisons for Interaction

Variable	Disability*Grade	Disability*Grade	Mean Difference	<i>P</i>
Note-Taking/Listening Skills	ADHD+SLD *3	ND*3	-23.10	.007
Low Motivation	ADHD+SLD *3	ND*3	16.28	.001
	ADHD+SLD *4	ND*4	12.51	.010
Test Anxiety	ADHD *4	ND*4	16.62	.002
	ADHD+SLD *4	ND*4	21.01	.000

Correlations Among Dependent Variables

Intercorrelations among the learning strategy variables (study strategies, note-taking/listening skills, test-taking strategies, time management), low academic motivation, and test anxiety are reported in Table 5. The descriptive findings indicated that the learning strategy variables were significantly correlated with each other ($p < .001$). Test anxiety was correlated with study strategies ($p = .001$) and was significantly associated with low academic motivation ($p < .001$) but did not correlate with other learning strategies (note-taking/listening skills, test-taking strategies, time management). Notably, academic motivation was moderately correlated with study strategies ($p = .015$) and note-taking/listening skills ($p = .017$).

Discussion

The present study examined the cognitive, metacognitive, and emotional characteristics of students with or at risk for SLD, ADHD, and their co-occurrence, and how these characteristics relate to learning strategies, academic motivation, and test anxiety. Findings align with prior work indicating that students with SLD and ADHD face multifaceted challenges that impede academic achievement and self-regulated learning. Collectively, the results support the need for comprehensive interventions that address cognitive and emotional domains concurrently. An important contribution of this study is the inclusion of students with formal diagnoses and students identified as at risk for SLD and/or ADHD, consistent with school-based identification practices and RTI frameworks. By combining school records with teacher-rated behavioral scales, the sample captured a broader spectrum of academic and behavioral profiles typical of general education settings. This approach enhances ecological validity and informs early identification and tiered supports, particularly for students who do not yet meet diagnostic thresholds but nonetheless experience persistent academic difficulties.

Significant group differences emerged for note-taking strategies, academic motivation, and test anxiety. These findings are consistent with literature documenting difficulties in processing speed, working memory, and metacognitive control among students with SLD and/or ADHD, which can undermine traditional study methods (Boyle & Joyce, 2021; Chevalier et al., 2017). Interventions incorporating assistive technologies (e.g., smartpens, digital organizers) show promise for improving note-taking efficiency, review, and summarization; the present results support continued integration of such tools to promote access and performance for students with learning and attention challenges. Moreover, the study highlights the importance of organizational skills in managing academic tasks. Students with ADHD, especially those with inattentive subtype, show significant challenges in organization, which affects their ability to plan and prioritize tasks effectively (Boyer et al., 2018). Evidence-based practices such as explicit instruction in organizational skills and the use of graphic organizers are well supported for students with executive-functioning needs (Englert et al., 2009). The current results further underscore the importance of embedding these supports within daily instruction to strengthen self-regulated learning.

The findings also reveal that low academic motivation and high-test anxiety are characteristic among students with SLD and ADHD. These emotional factors significantly impact their academic performance, consistent with current research indicating that students with ADHD often rely on external feedback and exhibit less intrinsic motivation, leading to less effective study habits (Carlson et al., 2002; Daley & Birchwood, 2010). The significant correlations between test anxiety, study strategies, and academic motivation suggest that interventions should not only focus on cognitive and metacognitive skills but also address emotional and motivational aspects to

Table 5

Correlations and Significance Values of Dependent Variables of Learning Strategies and Test Anxiety

Dependent Variables	1	2	3	4	5
1. Study strategies	-				
2. Note-taking /listening skills	.65 (.000)	-			
3. Test-taking strategies	.76 (.000)	.73 (.000)	-		
4. Time management	.72 (.000)	.70 (.000)	.73 (.000)	-	
5. Low academic motivation	.26(.015)	-.25 (.017)	-.01 (.897)	.01 (.926)	-
6. Test anxiety	.36 (.001)	.04 (.709)	.21 (.051)	.17 (.115)	.63 (.000)

enhance overall academic performance. Additionally, this study emphasizes the importance of interventions aimed at enhancing self-regulation and executive functions in students with ADHD. Self-monitoring is an effective strategy in enabling these students to observe and adjust their behaviors, which improves focus and academic performance, suggesting that integrating these approaches into educational practices can lead to better academic outcomes (Hartung et al., 2022).

Limitations and Future Direction

Several limitations warrant consideration. First, reliance on student self-report for study strategies, motivation, and test anxiety may introduce response bias. Second, although the sample included multiple grade levels and demographic diversity, the overall sample size and geographic scope may limit generalizability to broader populations of students with SLD and ADHD. Replication with larger, more diverse samples is needed to examine potential subgroup differences and to test the stability of effects across settings. Finally, classification decisions based on teacher ratings and school records, while ecologically valid, may reflect variability in local documentation and identification procedures.

Future work should evaluate integrated interventions that jointly target cognitive, metacognitive, and emotional needs, using longitudinal designs to assess durability of effects and links to academic outcomes over time. Building on the present findings, component analyses are needed to determine which elements of executive-function and self-regulation interventions yield the strongest benefits and how they can be adapted across inclusive and specialized settings. Also, whether test anxiety mediates the association between executive-function supports and strategy use, and whether grade level or gender moderate intervention effects. Research should also examine how early identification and supports for students identified as at risk for SLD and/or ADHD prior to formal diagnosis affect responsiveness to intervention and trajectories of academic performance within RTI/MTSS frameworks.

In conclusion, this study contributes to evidence documenting interconnected cognitive, metacognitive, and emotional challenges among students with SLD and ADHD. By including students with formal diagnoses and students identified as at risk for SLD and/or ADHD through school-based nomination and screening, the findings reflect students commonly served in general-education contexts and underscore the importance of early identification and comprehensive support. Group differences in learning strategies, academic motivation, and test anxiety indicate that educational approaches prioritizing self-regulation and executive-function supports, explicit instruction in

organizational and note-taking strategies, and assistive tools, delivered alongside high-quality academic instruction, may enhance engagement and achievement. Continued research should refine these approaches, evaluate their long-term effectiveness across diverse student populations, and clarify the mechanisms through which cognitive, motivational, and emotional supports work together to improve academic outcomes.

References

- Basile, A., Toplak, M. E., & Andrade, B. F. (2021). Using metacognitive methods to examine emotion recognition in children With ADHD. *Journal of Attention Disorders*, 25(2), 245–257. <https://doi.org/10.1177/1087054718808602>
- Boyer, B. E., Geurts, H. M., & Van der Oord, S. (2018). Planning skills of adolescents with ADHD. *Journal of Attention Disorders*, 22(1), 46–57. <https://doi.org/10.1177/1087054714538658>
- Boyle, J. R. (2010). Note-taking skills of middle school students with and without learning disabilities. *Journal of Learning Disabilities*, 43(6), 530–540. <https://doi.org/10.1177/0022219410371679>
- Boyle, J., & Joyce, R. (2021). Smartpens: Note-taking technology for students with learning disabilities. *Learning Disabilities: A Multidisciplinary Journal*, 26(1), 16–26. <https://doi.org/10.18666/LDMJ-2021-V26-I1-10363>
- Boyle, J. R., Rosen, S. M., & Forchelli, G. (2016). Exploring metacognitive strategy use during note-taking for students with learning disabilities. *Education 3-13*, 44(2), 161–180. <https://doi.org/10.1080/03004279.2014.929722>
- Carlson, C. L., Booth, J. E., Shin, M., & Canu, W. H. (2002). Parent-, teacher-, and self-rated motivational styles in ADHD subtypes. *Journal of Learning Disabilities*, 35(2), 104–113. <https://doi.org/10.1177/002221940203500202>
- Chevalier, T. M., Parrila, R., Ritchie, K. C., & Deacon, S. H. (2017). The role of metacognitive reading strategies, metacognitive study and learning strategies, and behavioral study and learning strategies in predicting academic success in students with and without a history of reading difficulties. *Journal of Learning Disabilities*, 50(1), 34–48. <https://doi.org/10.1177/0022219415588850>
- Chronaki, G., Hadwin, J. A., Garner, M., Maurage, P., & Sonuga-Barke, E. J. S. (2015). The development of emotion recognition from facial expressions and non-linguistic vocalizations during childhood. *British Journal of Developmental Psychology*, 33(2), 218–236. <https://doi.org/10.1111/bjdp.12075>

- Collin, L., Bindra, J., Raju, M., Gillberg, C., & Minnis, H. (2013). Facial emotion recognition in child psychiatry: A systematic review. *Research in Developmental Disabilities, 34*(5), 1505–1520. <https://doi.org/10.1016/j.ridd.2013.01.008>
- Conners, C. K. (2009). *Conners* (3rd ed.). Multi-Health Systems.
- Daley, D., & Birchwood, J. (2010). ADHD and academic performance: why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom? *Child: Care, Health & Development, 36*(4), 455–464. <https://doi.org/10.1111/j.1365-2214.2009.01046.x>
- Englert, C. S., Mariage, T. V., Okolo, C. M., Shankland, R. K., Moxley, K. D., Courtad, C. A., Jocks-Meier, B. S., O'Brien, J. C., Martin, N. M., & Chen, H.-Y. (2009). The learning-to-learn strategies of adolescent students with disabilities: Highlighting, note taking, planning, and writing expository texts. *Assessment for Effective Intervention, 34*(3), 147–161. <https://doi.org/10.1177/1534508408318804>
- Fisher, O., Berger, I., Grossman, E. S., & Maeir, A. (2022). Online and intellectual awareness of executive functioning in daily life among adolescents with and without ADHD. *Journal of Attention Disorders, 26*(6), 870–880. <https://doi.org/10.1177/10870547211031982>
- Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*. Guilford Press.
- Hartung, C. M., Canu, W. H., Serrano, J. W., Vasko, J. M., Stevens, A. E., Abu-Ramadan, T. M., Bodalski, E. A., Neger, E. N., Bridges, R. M., Gleason, L. L., Anzalone, C., & Flory, K. (2022). A new organizational and study skills intervention for college students with ADHD. *Cognitive and Behavioral Practice, 29*(2), 411–424. <https://doi.org/10.1016/j.cbpra.2020.09.005>
- Joyce, R. L., & Boyle, J. R. (2020). Improving note-taking skills for students with disabilities through a smartpen intervention. *Journal of Special Education Technology, 35*(4), 225–235. <https://doi.org/10.1177/0162643419856275>
- LaCount, P. A., Hartung, C. M., Shelton, C. R., & Stevens, A. E. (2018). Efficacy of an organizational skills intervention for college students with ADHD symptomatology and academic difficulties. *Journal of Attention Disorders, 22*(4), 356–367. <https://doi.org/10.1177/1087054715594423>
- Lee, J., & Zentall, S. S. (2012). Reading motivational differences among groups: Reading disability (RD), attention deficit hyperactivity disorder (ADHD), RD+ADHD, and typical comparison. *Learning and Individual Differences, 22*, 778–785. <https://doi.org/10.1016/j.lindif.2012.05.010>
- Lewandowski, L., Hendricks, K., & Gordon, M. (2015). Test-taking performance of high school students with ADHD. *Journal of Attention Disorders, 19*(1), 27–34. <https://doi.org/10.1177/1087054712449183>
- Loe, I. M., & Feldman, H. M. (2007). Academic and educational outcomes of children with ADHD. *Journal of Pediatric Psychology, 32*(6), 643–654. <https://doi.org/10.1093/jpepsy/jsl054>
- Oefinger, L. M., & Peverly, S. T. (2020). The lecture note-taking skills of adolescents with and without learning disabilities. *Journal of Learning Disabilities, 53*(3), 176–188. <https://doi.org/10.1177/0022219419897268>
- Raggi, V. L., & Chronis, A. M. (2006). Interventions to address the academic impairment of children and adolescents with ADHD. *Clinical Child and Family Psychology Review, 9*(2), 85–111. <https://doi.org/10.1007/s10567-006-0006-0>
- Reaser, A., Prevatt, F., Petscher, Y., & Proctor, B. (2007). The learning and study strategies of college students with ADHD. *Psychology in the Schools, 44*(6), 627–638. <https://doi.org/10.1002/pits.20252>
- 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. <https://doi.org/10.1146/annurev.psych.59.103006.093633>
- Simon-Dack, S. L., Rodriguez, P. D., & Marcum, G. D. (2016). Study habits, motives, and strategies of college students with symptoms of ADHD. *Journal of Attention Disorders, 20*(9), 775–781. <https://doi.org/10.1177/1087054714543369>
- Stroud, K. C., & Reynolds, C. R. (2014). *School Motivation and Learning Strategies Inventory (SMALSI)*. Western Psychology Services.
- Zentall, S. S. (2013). *Students with mild exceptionalities: Characteristics and applications*. SAGE.
- Zentall, S. S., & Beike, S. M. (2012). Achievement and social goals of younger and older elementary students: Response to academic and social failure. *Learning Disability Quarterly, 35*(1), 39–53. <https://doi.org/10.1177/0731948711429009>

Jiyeon Lee is an associate professor in the Education Department of at Rowan University.
Please send correspondence to leej@rowan.edu.

Investigation of the Conceptual Knowledge of Students With and At Risk of Learning Disabilities on Entrepreneurial Business Ideas in Their Rural Areas of Residence

Tufan İnaltekin, Arzu Kirman Bilgin, Devrim Erginsoy Osmanoglu, Şenay Özen Altınkaynak, and Selma Erdağı

This study aims to examine the extent of conceptual knowledge of students with and at risk of learning disabilities on entrepreneurial business ideas in the region where they reside. Clinical interviews were utilized to collect data in this study, which aims to reveal the current situation. The business ideas discussed in the interviews were regarding cattle breeding, cheesemaking, beekeeping, goose breeding, kavlca cultivation, greenhouse cultivation, and carpetmaking. These business ideas are the livelihoods of the rural area where the students live. Semi-structured questions were administered to a total of 31 senior secondary school students, 20 of whom had learning disabilities and 11 of whom were at risk of learning disabilities. The data were subjected to content analysis and the resulting codes were presented to the reader with frequencies. It was observed that the students had more conceptual knowledge about cows and geese than bees. It was also found that their conceptual knowledge on carpetmaking was insufficient. Their conceptual knowledge on kavlca wheat and greenhouse was also found to be low.

Keywords: *Entrepreneurship, business idea, learning disability, conceptual knowledge*

Introduction

Individuals with learning disabilities (LD) are required to acquire and develop contemporary skills in order to compensate for their cognitive disadvantages and effectively solve daily life problems (Lytra & Drigas, 2021). While students with LD exhibit poorer academic performance, they also face difficulties in coping with daily problems effectively (Rogers et al., 2020). Entrepreneurship education is an important opportunity for individuals with LD to acquire life skills, meet their needs, and demonstrate their presence in society (Wiklund et al., 2018). Logan and Martin (2012) emphasize that the acquisition of entrepreneurial skills by individuals with LD can be realized at an early age. Starting entrepreneurship education in secondary school accelerates the process of becoming an entrepreneur in the future (Göksen-Olgun et al., 2022). The entrepreneurship education process also provides personal development in individuals (Hadley, 2022). However, in order to experience this development process, it is important that conceptual knowledge about business ideas is formed during the secondary school period (Kim et al., 2021). Individuals with LD are more interested in professions that focus

mainly on communication skills (Taylor & Walter, 2003). At the same time, since they have effective communication skills, they are also successful in skills such as risk-taking in the entrepreneurial process (Logan, 2009; Miller & Le Breton-Miller, 2017; Wiklund et al., 2018), marketing or trust in their employees (Logan & Martin, 2012). The study conducted by Stemple (2020) found that entrepreneurs with LD are successful in solving problems related to their ventures and that they need to have psychological resilience for this process. Being conceptually equipped will make them psychologically confident and their conceptual knowledge about entrepreneurship will pave the way for them to be more skilled.

In the review study conducted by Lin et al. (2023) on entrepreneurship education, it was found that the majority of the studies were at the university level and that there is a need for studies on young entrepreneurs. Hlady-Rispal and Jouison-Laffitte (2014) emphasize the need for qualitative studies that require deep examination of entrepreneurship-related phenomena in authentic ways. Govindasamy et al. (2022) emphasize the need to examine different characteristics related to the entrepreneurial

skills of students with learning disabilities. It is thought that the present study will provide a different perspective since the previous studies are on affective characteristics (entrepreneurial intention, entrepreneurial personality traits, entrepreneurial tendency) (Eseadi et al., 2023; Powers et al., 2021; Santoro et al., 2020). This is because individuals require conceptual knowledge on business ideas in order to generate business ideas and create a business flowchart. In this study, an answer is sought to the question "What is the level of the conceptual knowledge of Students with and at Risk of Learning Disabilities (SRLD) on regional entrepreneurship business ideas?" The answer to this question will guide both researchers working on learning disabilities and researchers working on entrepreneurship in organizing the content of the educational programs they will design. Becoming an entrepreneur can be seen as a process that helps individuals with LD to gain self-confidence (Logan & Martin, 2012; Powers et al., 2021). If LD students' interest in becoming entrepreneurs increases, ways to improve educational processes can be sought (Pavey et al., 2020). The way to become an entrepreneur is through conceptual understanding (Hayter, 2013; Rae & Carswell, 2001). Perhaps, if the focus is on structuring conceptual knowledge well, it may be possible to bring more LD individuals into this process.

The Importance of Conceptual Knowledge in Creating Business Ideas

Future-oriented education literature focuses on the development of life skills. Especially today, through entrepreneurship skills, individuals can both create an independent business area for themselves and make significant contributions to the economy of the geography they live in. This situation is especially valuable for individuals residing in rural areas. This is because these regions are disadvantaged in terms of economic development and unemployment. Moreover, in these regions, individuals with LD are much more vulnerable to unemployment and economic weakness compared to their peers. These individuals are not preferred by employers in the business lines in the regions where they live, they can be employed under very poor working conditions, they can be marginalized and become economically dependent on others (Ekmekçioğlu, 2023). Entrepreneurship is an opportunity for these individuals to survive and live economically independent lives in their homelands (Govindasamy et al., 2021; Govindasamy et al., 2022). If this is not done, these individuals may become a lost generation and engage in antisocial behaviors. In this respect, it is necessary from the early educational stages to provide students with the understanding that they can become entrepreneurs in the future and come up with new

business ideas for themselves. Century-specific skills are defined as the process of becoming an expert in a particular field (Huber & Kuncel, 2016). In other words, these skills emerge in domain-specific contexts (Sweller et al., 2019). Today, particularly in science education, it is the main goal of curricula to provide not only ways of accessing scientific knowledge but also life skills such as entrepreneurship (MoNE, 2018). Therefore, it should be aimed to make science education useful for students to gain life skills to solve future economic problems (Muhammad, 2018). The way for these students to become successful entrepreneurs in the future is to gain the right conceptual knowledge in science and use it to come up with original business ideas. Fullan et al. (2018) suggest that effective learning can contribute significantly to a strong sense of identity around a purpose or passion, creativity and mastery of a worthwhile endeavor. In order to be able to identify business opportunities in entrepreneurship, students need to learn subject knowledge specific to the field in which they will acquire skills (Department of Basic Education, 2011). Vygotsky (1978, cited in McPhail, 2021) defined learning as the development of the ability to apply conceptual thinking in various contexts in the sociocultural world. Experts in the field of century-specific skills and cognitive science literature agree that accurate conceptual learning should be the most fundamental goal of education (Naidoo & Mabaso, 2020). This is because it is argued that having domain-specific subject matter knowledge is the starting point for demonstrating these skills (McPhail, 2021). Only in this way can innovative solutions be produced about real-world problems in various disciplines. Because the ability to transfer knowledge to new situations or apply it in different contexts stems from conceptual learning (Naidoo & Mabaso, 2020). Ark and Schneider (2016) argue that skills and competencies stem from a deep understanding of the academic content used to solve problems in the classroom and in work contexts. For example, it could be argued that if teachers ignore their students' lack of conceptual knowledge of animals and plants in science classes, they will be a barrier to their future development of a life skill such as entrepreneurship in animal husbandry in their geography and culture. Therefore, Jensen and Nickelsen (2008) suggest that meaningful learning occurs when learners understand concepts and are able to apply this conceptual knowledge in different contexts.

Purpose and Significance of the Study

This study aims to reveal the conceptual knowledge levels of SRLD regarding business ideas that are commonly encountered in their local environment. SRLD face various challenges in acquiring conceptual knowledge compared to their peers. This situation limits not only their academic achievement but also the development of skills related

to everyday life. Therefore, understanding their existing conceptual knowledge of business ideas frequently encountered in their surroundings (cattle breeding, cheesemaking, beekeeping, goose breeding, kavlca wheat cultivation, greenhouse farming, and carpet weaving) is essential for making educational processes more effective and meaningful. These business ideas represent an integral part of the economic and cultural fabric of the students' geographical context. Learning accurate conceptual knowledge and skills through these local business ideas can make students' learning processes more meaningful and their future lives more sustainable. However, a notable gap has been identified in the form of the absence of a guidebook that could serve as a foundation for activities and practices aimed at enhancing the conceptual understanding of these students. Thus, there is a need for a guidebook that enables them to comprehend the business ideas of their local environment in ways that address their genuine learning needs in classroom settings. The main rationale of this study is to help students overcome the challenges of learning abstract concepts by connecting them with business ideas that they encounter and can make sense of in their daily lives. The findings of the study are expected to directly contribute to the content of a guidebook, enabling it to be structured according to the students' real learning needs. Such a guidebook, supported by applied activities and modules, will be locally relevant and serve as a resource that promotes students' conceptual development. Moreover, identifying students' existing knowledge, misconceptions, and conceptual weaknesses will directly inform the design of the content and modules of the guidebook, ensuring that they are aligned with the students' genuine learning needs. In this respect, the study not only introduces an innovative approach to the education of students with special needs but also provides an original contribution by strengthening the integration of education with everyday life. Determining the conceptual knowledge levels of students regarding local business ideas will directly shape the structural content of the guidebook to be developed. The types of activities to be included and the ways in which the modules will support students' actual learning needs can only be designed through a detailed understanding of their current conceptual knowledge levels. Thus, the study does not merely aim to identify students' conceptual knowledge but also to create, in light of this knowledge, an instructional material that will foster life skills, facilitate learning processes, and align with the socioeconomic context of their local environment. In doing so, the research addresses a critical gap in the education of students with special needs while making a distinctive contribution by establishing a strong connection between education and daily life. Furthermore,

the existing literature includes only a limited number of studies examining the conceptual knowledge of students with special needs in disadvantaged regions. In this regard, the present study holds originality within the field of educational research. In this context, the research question addressed in the study is as follows:

RQ: To what extent do SRLD accurately understand the fundamental concepts related to local business ideas (cattle breeding, cheesemaking, beekeeping, goose breeding, Kavlca wheat cultivation, greenhouse farming, and carpet weaving)?

Method

This study employs a qualitative research design, specifically utilizing the case study approach. The study constitutes a part of the project work conducted by the researchers. In this context, the researchers aim to design an educational module intended to enhance the entrepreneurial potential of SRLD as well as their conceptual knowledge regarding local business ideas. Accordingly, the primary aim of this study is to examine the conceptual knowledge levels of SRLD students concerning the livelihood products of their local region, thereby contributing to the development of a guidebook containing activities and implementation modules based on selected business ideas for use in middle school education with similar students. Understanding students' conceptual knowledge of the business ideas under study thus provides a significant contribution to the preparation of this guidebook. Considering these students' conceptual weaknesses regarding the business types addressed, the modules were designed to include more visual, experiential, simplified, and concretized content to ensure accurate concept acquisition. In addition, the analysis of students' conceptual knowledge allows the developed modules to be more closely aligned with the local context, as reflecting children's conceptual understandings, shaped by their everyday life experiences, into the modules is highly valuable. For this reason, it is necessary to determine the conceptual knowledge of SRLD students regarding local entrepreneurship business ideas. Consequently, the results of the baseline assessment will guide the design of the educational module.

Participants

This study was conducted in a rural province of the North Eastern Anatolia Region, where Caucasian culture is dominant, with 31 senior secondary school students (8th grade/12-13 years old) from a total of 19 schools, including 20 students with LD and 11 students at risk of LD. In

Türkiye, LD students are identified by taking the following steps: 1. school stakeholders become aware of them and refer them to the guidance and research center with the approval of the family, 2. the guidance and research center makes an assessment and refers them to the hospital, and 3. the necessary procedures are carried out in the hospital and they are returned back with or without a diagnosis.

Students at risk of learning disabilities were identified by subject teachers and school guidance teachers, but were not included in other diagnostic processes because they did not have parental consent. In this rural area where the application was carried out, people's livelihoods are based on agriculture and animal husbandry. On agriculture and animal husbandry, students study reproduction, growth and development in plants and animals in the 7th grade, and physical-chemical change and photosynthesis in the 8th grade. The reason for working with senior students is that they have studied these subjects before. Of these students, 14 were female and 17 were male. Twenty-four of the students live in the city, and seven of them live in villages close to the city. The mothers of all participants were unemployed. The fathers of 10 students were civil servants, and 11 were construction workers. The fathers of eight students are engaged in cattle breeding and two in agriculture.

These students reside in socioeconomically disadvantaged regions in eastern Türkiye. They experience limitations both in access to educational opportunities and in the development of their conceptual knowledge. As such, they require additional support in developing conceptual understanding during lessons. Therefore, understanding their knowledge levels and developing supportive materials makes a significant contribution to ensuring equity in education. Cattle breeding, cheesemaking, beekeeping, goose breeding, Kavlca wheat cultivation, greenhouse farming, and carpet weaving are activities frequently encountered in the daily lives of students in these regions and constitute the primary sources of income for their families. Examining students' conceptual knowledge in relation to these locally relevant fields not only provides more realistic findings but also enables the design of more effective instruction. Accordingly, the primary reason for selecting SRLD from a socioeconomically disadvantaged region in eastern Türkiye is that they face both restricted access to educational opportunities and a greater need for supportive materials to enhance their conceptual knowledge. For this reason, choosing this group contributes to the preparation of a guidebook that is contextually relevant, realistic, and responsive to the actual learning needs of these students.

Data Collection and Analysis

In this rural area where Caucasian culture is dominant, cattle breeding, cheesemaking, beekeeping, goose breeding, kavlca cultivation, greenhouse cultivation, and carpetmaking are the main sources of livelihood. These business ideas were determined by taking into account the economic activities of the students' place of residence and its surroundings and the professions developed in connection with these activities in the 5th grade of the social studies course, and the investment and marketing subjects according to the geographical characteristics of Turkey in the 6th grade. Among these, cattle breeding, cheesemaking, beekeeping and goose breeding are among the more common business ideas. While developing semi-structured interview questions for these business ideas, science and social studies curricula were taken into consideration. In these curricula, the topics emphasized in the conceptual framework of business ideas (production-distribution-consumption/reproduction, growth and development in plants and animals/photosynthesis) were taken as basis. The questions developed by all researchers were revised with the opinions of eight science teachers and three social studies teachers. Prior to the study, interviews were conducted with three 8th-grade students with LD and the questions were prepared for use. In this study, individual and semi-structured interviews were conducted with SRLD. Necessary permissions were obtained from parents and school administrations, and students were informed prior to participation. During the interviews, open-ended questions were employed to elicit students' conceptual knowledge. The researchers deliberately used simple and comprehensible language, ensuring that the interviews were short and focused. Considering students' attention and motivation, the sessions were conducted in multiple brief segments when necessary. All interviews were documented through audio recordings. The researchers paid particular attention to avoid leading the students, which facilitated the expression of their authentic conceptual knowledge. A brief introduction and relaxation phase was planned before each interview to make the students feel comfortable. Based on expert recommendations from special education specialists, it was determined that 15- to 20-minute sessions were most appropriate for these students, and therefore, the interviews were divided into multiple short segments and interviews with one student were completed in seven days. Table 1 shows the questions developed to determine the conceptual knowledge regarding these business ideas and how they were analyzed.

Table 1
Semi-Structured Interview Questions and Analysis

Business Idea	Interview questions	Analysis	HPS
Cattle Breeding	1- How do cows breed?	The answer that states that sexual reproduction exists, i.e. it occurs by the union of egg and sperm, is awarded 2 points. An answer that includes part of this answer is awarded 1 point.	2
	2- How many calves are produced from a cow in a year?	1 point is awarded for the answer stating that 1 offspring is obtained.	1
	3- How do we care for a cow?	1 point is awarded for each of the nutrition, health, and shelter codes.	3
	4- What products are derived from cows?	1 point is awarded for each of the codes for meat, milk, leather, and fertilizer.	4
	5- What do cows feed on?	Answers that list only 3 items among grass, fodder, hay, and food that cows can consume are awarded 1 point each.	3
	6- What are the characteristics of the cows in this region?	Only three of the codes (birth rate is high, ease of delivery is high, milk yield is high) are given 1 point each.	3
Cheese-making	1- How should we store milk to prevent spoilage?	1 point is awarded for the answer "in a cold environment or refrigerator".	1
	2- How is cheese made?	The answer stating that yeast is added to warm milk, mixed and left to stand for a few hours is awarded 3 points (for warm milk, fermentation and standing codes). An answer that includes part of this answer is awarded 1 point.	3
	3- What are the plants that grow in this region and increase milk productivity?	The codes of legume forage crops (either clover or sainfoin is accepted) and wheat forage crops (either barley, wheat, oat, or corn is accepted) are given 1 point each.	2
Bee-keeping	1- What types of bees are found in a beehive?	The codes for queen, worker and drone are given 1 point each.	3
	2- What are the tasks of these bee species?	1 point each is awarded to answers stating that the queen's job is to lay eggs, the drone's job is to mate, the worker bee's jobs are cleaning (feeding the queen, building combs, and caring for the young are also accepted) and making honey.	4
	3- How do bees reproduce?	2 points are awarded for answers that state that there is sexual reproduction, i.e. the union of egg and sperm. An answer that includes part of this answer is awarded 1 point.	2
	4- How do we care for bees in the winter?	Codes stating that should be in a ventilated and moisture-free environment, and honey must be left for the bees is given 1 point each.	3
	5- How do bees feed?	For each of the codes for nectar, honey, and pollen, 1 point is awarded.	3
	6- Which products are made from bees?	For each of the codes for honey, royal jelly, pollen, propolis, and beeswax, 1 point is given.	5
	7- What species of bee lives in this region?	1 point is awarded for the answer Caucasian bee.	1
	8- What are the characteristics of this species?	For each of the answers cold-resistant, hardworking, high offspring yield, and long proboscis, 1 point is given.	4
	9- What are the characteristics of honey from this region?	1 point is awarded for each of the following answers: It is flower honey, its consistency is dense, it is yellow in color.	3

Table 1 (cont.)

Goose breeding	1-How do geese breed?	2 points are given for the answer that there is sexual reproduction, that is, it is formed by the union of egg and sperm. For an answer that includes part of this answer, 1 point is awarded.	2
	2-What time of the year do geese lay eggs?	For the answer that they lay eggs from winter to early summer, 2 points are awarded. For an answer that includes part of this answer, 1 point is awarded.	2
	3-How many days does a goose incubate?	1 point is awarded for an answer between 28 and 30.	1
	4-What months of the year do geese incubate?	For the answer that they start in late winter and continue until late spring, 2 points are awarded. For an answer that includes part of this answer, 1 point is awarded.	2
	5-What do geese feed on?	The codes for grass (clover is accepted) and grain (barley-wheat is accepted) are awarded 1 point each.	2
	6-How do we care for the goose chick so that it grows up healthy?	For each of the codes for nutrition, dry, clean, and warm environment, 1 point is awarded.	4
	7-What products are obtained from geese?	1 point each for meat, feathers, fat, and eggs.	4
	8-How is goose meat stored in this region?	1 point each for refrigerated or dried.	2
	9-What are the characteristics of the goose of this region?	1 point for each of the answers cold-resistant, small size, high-calorie meat.	3
Kavilca Cultiva-tion	1-What types of wheat grow in this region?	Bread wheat and kavilca are awarded 1 point each.	2
	2-What are the characteristics of kavilca wheat?	For each of the answers: genetically intact, resistant to cold climates, healthy food source, resistant to drought, 1 point each.	4
	3-How does kavilca wheat reproduce?	For the answer that sexual reproduction is present (pollen fertilizes the egg is accepted), 1 point is awarded.	1
	4-How is kavilca cultivated?	For each answer that the field to be planted with kavilca should face the northern slopes - the soil is plowed in October - animal manure is spread and sown in April, 1 point is awarded.	4
	5-What can be done to increase the productivity of kavilca?	The answers fertilization and irrigation are awarded 1 point each.	2
	6-What products are obtained from kavilca wheat?	1 point is awarded for only three of the answers: flour, starch, bulgur, and animal feed.	3
Green-house cultiva-tion	1-What is a greenhouse?	In answers stating that the greenhouse is an environment for the growth of plants where suitable conditions are provided by covering the environment with materials that transmit light such as glass and plastic, 1 point is given for each of the codes of the material used - light transmission and covering.	3
	2-Is this region a suitable area for greenhouse cultivation? Why?	For the answer that it is suitable because there are more sunny days in summer, 2 points are awarded. For an answer that includes part of the answer, 1 point is awarded.	2
	3-How do we care for the plants in the greenhouse?	1 point is awarded for each of the answers that attention should be paid to soil temperature, irrigation, weeding, and aeration.	4
	4-What can be done to increase yield?	For each of the codes for soil rest, adequate irrigation and fertilization, 1 point is awarded.	3
	5-How do greenhouse plants reproduce?	1 point each for the answer that there is sexual reproduction (pollen fertilizes the egg is accepted) or asexual reproduction (vegetative reproduction is accepted).	2

Table 1 (cont.)

Carpet-making	1-How is a carpet woven?	For the answer "It is made by tying knots in threads that are perpendicular from top to bottom" 2 points are awarded. For an answer that includes part of this answer, 1 point is awarded.	2
	2-How are different patterns (motifs) made?	For the answer that pictures are drawn on squared paper and each square is considered a knot, 2 points are awarded. 1 point is awarded for part of this answer.	2
	3-What kind of yarn is used in the carpets of this region?	1 point is awarded for the answer "Wool yarn is used".	1
	4-How is carpet yarn obtained?	1 point is awarded for the answer "It is obtained from sheep's wool".	1
	5-What are the motifs specific to this region?	1 point is awarded for each of the following codes: four-legged animal figures, geometric shapes, dragon figures.	3

HPS: Highest Possible Score

For each ambiguous answer given within the scope of each question in Table 1, 0 points are given. Therefore, the lowest score that can be obtained from the interview questions for each business idea is 0 (zero) points. Table 2 shows the scores received for the business ideas and information on how they were evaluated.

Table 2*Evaluation of the Scores Obtained from the Students*

Classification	Score Intervals by Business Ideas						
	Cattle Breeding	Cheese-making	Bee-keeping	Goose Breeding	Kavilca Cultivation	Greenhouse Cultivation	Carpet-making
Good conceptual knowledge	16 - 12	6 - 5	30 - 21	20 - 14	16 - 12	14 - 10	9 - 7
Moderate conceptual knowledge	11 - 6	4 - 3	20 - 11	13 - 7	11 - 6	9 - 5	6 - 4
Poor conceptual knowledge	5 - 0	2 - 0	10 - 0	6 - 0	5 - 0	4 - 0	3 - 0

The scores that the students received from the interviews were evaluated at the levels of good—moderate—poor conceptual knowledge within the scope of business ideas. Audio recordings were made of the interviews. The audio recordings were transcribed and analyzed separately by all researchers. The qualitative data obtained from these students were independently scored by the researchers using a rubric developed for the study. For the analysis of the data, a rubric developed by the researchers was used to assess students' conceptual knowledge levels regarding each business idea (cattle breeding, cheesemaking, beekeeping, goose breeding, kavilca wheat cultivation, greenhouse farming, and carpet weaving). This rubric served as a practical assessment tool for identifying students' conceptual deficiencies concerning the topics under study. In preparing the rubric, the researchers first determined the scientifically accurate answers expected for each interview question related to the business ideas, through consultations with subject-matter experts and by reviewing relevant scientific sources. Once the conceptual content representing the knowledge structure of each

business idea was defined, a systematic scoring scheme was constructed for each conceptual component. Drawing upon rubrics used in their prior research as well as those found in the literature, the researchers created a draft version of the rubric. The structure of the rubric allowed for separate scoring of ideas corresponding to different conceptual knowledge questions for each business idea. For example, in the section concerning "the roles of bee species," students were awarded one point for each correct role identified. Thus, if a student responded only with "worker bees produce honey," the total score obtained for that item would be one. To ensure content validity, science teachers specializing in the subject reviewed the rubric in relation to each business idea. Subsequently, based on evaluations by special education experts, the conceptual codes were simplified to align with the knowledge that these students were likely to demonstrate, making the rubric more suitable for data analysis. The key feature of the rubric was that each correct piece of information provided by the student was scored separately, and the total score for each variable was determined according to the maximum number of correct

responses possible. The rubric was piloted using interview data from two participating students as a preliminary test. The results indicated that the rubric yielded highly reliable outcomes for analysis. The preliminary scoring, conducted independently by two researchers, demonstrated inter-rater consistency above 90% in analyzing the responses of the two students. Throughout the entire scoring process, the researchers acted independently and in accordance with the blind review system. To determine inter-rater reliability, Cohen's Kappa coefficient was calculated. The obtained value (Cohen's Kappa = .92, $p < .001$) indicated a high level of agreement among the researchers (Cohen, 1960). For instance, in the analysis of student responses related to the "goose breeding" business, the consistency between the first and second researcher was remarkably high ($r = .94$, $p < .01$). The resulting ratings were compared and discussions were held on the inconsistent ratings.

Moreover, only a very limited number of discrepancies emerged during the scoring process, and for these cases, the researchers engaged in comprehensive discussions and reached a consensus. In the findings, the frequencies of students at these levels were included. At the same time, students were coded as S1, ... S31 and excerpts from the interviews were also presented.

Findings

Figure 1 shows the findings obtained from the present study, which investigated the conceptual knowledge of SRLDs on business ideas in the region where they live.

Figure 1 shows that the students do not have a satisfactory level of conceptual knowledge on all business ideas, while all of the students have a poor level of conceptual knowledge on the business ideas of beekeeping and carpetmaking. It is notable that some of the participants

Figure 1

The SRLDs' Level of Conceptual Knowledge about Business Ideas in the Region Where They Live

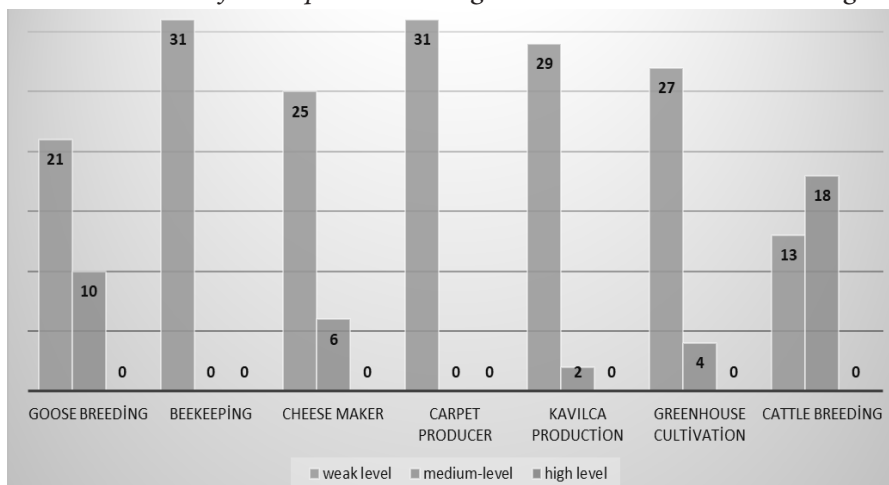


Table 3

The Students' Statements on Business Ideas

Business Ideas	Student Statements
Cattle Breeding	S2: cows must be vaccinated (scored 1 point for question 3) S25: they eat everything (scored 0 point in question 5) S30: their meat and milk are abundant (scored 1 point in question 6)
Cheesemaking	S1: we boil it (scored 0 points for question 1) S12: We boil the milk, ferment it when it warms up, it becomes cheese (received 2 points from question 2)
Beekeeping	S3: warrior bees (scored 0 in question 1) S14: all bees make honey (received 0 points from question 2) S27: light colored (received 1 point from question 9)
Goose breeding	S5: in spring (scored 1 point for question 2) S8: barley, wheat, water (scored 1 point for question 5) S20: feather, pillow and meat (scored 2 points for question 7)
Kavilca Cultivation	S11: winter-tolerant (1 point from question 2) S13: could be flour and starch (received 2 points from question 6)
Greenhouse	S5: the soil is covered (scored 1 point for question 1) S6: This region is hot in summer (scored 1 point for question 2)
Carpetmaking	S29: sheep wool (scored 1 point in question 3) S30: crystal-like shapes (scored 1 point for question 5)

have moderate conceptual knowledge on the business ideas of goose and cattle breeding. Table 3 presents some noteworthy statements from the students' interviews.

It is observed that the students were mostly able to answer the questions on the products obtained from these animals, how they are fed and how they are cared for in the questions on cattle breeding, goose breeding and beekeeping business ideas. It is noteworthy that they do not possess conceptual knowledge on the reproduction and local characteristics of these organisms. It is seen that they have almost no conceptual knowledge on carpetmaking. On greenhouse plants and kavlca, it is noteworthy that students do not possess conceptual knowledge on reproduction and increasing productivity as in animals. Table 4 shows the alternative conceptions that emerged as a result of the interviews.

Table 4 shows that the students generally have alternative conceptions about plants. It is noteworthy that there is emphasis on sowing more, especially in increasing the yield of plants. It is also notable that the students comprehend the subject of reproduction in animals better, but they form alternative conceptions about reproduction in plants.

Discussion

This study examined the conceptual knowledge levels of SRLD regarding local business ideas in a socio-economically disadvantaged region in eastern Türkiye. The findings revealed the extent to which students possessed accurate conceptual knowledge in areas such as cattle breeding, cheesemaking, beekeeping, goose breeding, Kavlca wheat cultivation, greenhouse farming, and carpet weaving, as well as the concepts in which they demonstrated deficiencies or misconceptions. Within this framework, the discussion focuses on students' levels of conceptual knowledge, providing insights into their cognitive development processes. In the present study, which investigated the conceptual knowledge of SRLDs on business ideas in the region where they live, it was observed that the conceptual knowledge of the students is limited to

the subjects they have learned in science and social studies courses in secondary school. As a result of the study, it was revealed that the conceptual knowledge of the participants on regional business ideas was limited. Following the study conducted by Hewes (2020) in Singapore, it was pointed out that it is necessary to focus on the skills of students with learning disabilities rather than academic achievement and to reveal their potential. However, this study shows that teaching conceptual knowledge within the scope of business ideas, which is tried to be taught within the scope of science and social studies courses in Turkey, is not sufficient. However, students with learning disabilities have entrepreneurial potential and necessary educational processes should be provided for them to become entrepreneurs (Pavey et al., 2020). There may be several reasons why students have more conceptual knowledge about goose and cattle breeding than other business ideas. One of these reasons may be that the environmental observations of the surroundings of the house where the students live and the livelihoods of their family members on these business ideas are more prominent. Demographic or cultural characteristics of individuals can play a role in the effectiveness of entrepreneurship education (Çelik & Solmaz, 2023). Therefore, having conceptual knowledge about business ideas in the region where students live is important for them to demonstrate entrepreneurial tendencies.

Logan (2008) points out that the mentor has an important role for students with dyslexia and how entrepreneurship is taught should be investigated. In Turkey, at the secondary school level, entrepreneurship skills are taught implicitly, especially in science and social studies courses. Therefore, SRLD mentors are the relevant subject teachers. The fact that science and social studies teachers do not use enough examples on topics related to business ideas in the region may be another reason why the students' conceptual knowledge is insufficient. The limited class hours may have prevented teachers from going beyond the textbooks. To summarize, the importance of teachers enriching the lesson with examples from the

Table 4
Alternative Conceptions of the Students

Business Idea	Alternative Concepts	Frequency
Beekeeping	All bees make honey	18
	If we sow more, the yield of crops increases	6
Greenhouse Cultivation	Plants reproduce by seed	4
	Plants reproduce by photosynthesis	1
	If we sow more, the yield of kavlca will increase	3
Kavlca Cultivation	Breeds by sowing kavlca	8
	Kavlca reproduces by seed	3
	Kavlca breeds with fertilizer	1

environment in which the students live becomes more important. Another reason may be that the teachers did not follow the examples of daily life in the region where they work in relation to science and social studies subjects. Saranza et al. (2023) emphasize the need to examine the competencies of secondary school teachers. The result of this study also invites researchers to follow what science and social studies teachers do conceptually within the scope of business ideas in their lesson processes. In Turkey, the importance of associating with daily life is emphasized in the science curriculum. However, when the science teaching undergraduate program is examined, it is seen that there are no practices for teaching the context-based learning approach.

The lack of knowledge about the tasks of bee species may have caused the students to form an alternative conception that all bees make honey. Adults' general conversations about bee species or news about honey production may have led to the emergence of such an alternative conception. Another alternative conception that emerged in both greenhouse cultivation and kavlca cultivation is that the yield of plants will increase with more cultivation. This result can be seen as an indication that the subject of reproduction, growth and development in plants is not well structured in the minds of the students. The fact that students think that plants will reproduce by planting seeds and fertilization processes can be seen as an indicator that they have not learned the subject of sexual reproduction. This is because students accepted reproduction and growth as the same process in plants. They describe germination as reproduction. The reason why students comprehend the subject of reproduction in animals better than the subject of reproduction in plants may stem from their observations. The fact that the subject of reproduction in animals can be observed more concretely than in plants may have led to the emergence of this situation. Entrepreneurial individuals are required to possess conceptual knowledge regarding their business ideas as conceptual knowledge is important for solving the problems that will arise in the entrepreneurship process (Venesaar et al., 2022). It is possible for entrepreneurs to create a business flow chart for their business ideas and make business plans with the presence of such knowledge (Zimmerman, 2012). Logan (2008) states that the entrepreneurial skill is used quite well by individuals with LD. If their conceptual knowledge is improved, perhaps more LD students can become entrepreneurs. Lack of conceptual knowledge may be one of the barriers for individuals with LD to become entrepreneurs.

This study has revealed important findings regarding the conceptual learning weaknesses experienced by SRLD in their learning processes. These difficulties can be

considered to be closely linked to students' information processing and learning strategies both inside and outside the classroom. Supporting this, Gokool-Baurhoo and Asghar (2019) reported similar results in their study. Furthermore, the conceptual knowledge levels of these students can largely be associated with their everyday life experiences, as their lifestyles and environmental interactions directly shape the formation of their conceptual understanding (Grigorenko et al., 2020; Kaya et al., 2022). The findings regarding the conceptual knowledge gaps of these students are highly valuable for the development of effective resources aimed at enhancing the conceptual understanding of students with similar characteristics in relation to local business ideas. This is because their potential to become self-sufficient in the future is closely linked to acquiring accurate conceptual knowledge and transforming it into practical skills. Accordingly, this study provides important insights into which activities and applications should be prioritized in the modules of the guidebook to be developed. Research emphasizing the importance of understanding conceptual knowledge in the creation of supportive materials for students with learning disabilities corroborates this result (Çoruhlu & Pehlevan, 2021; Er Nas et al., 2019).

Conclusion

In this study, it was determined that the majority of the SRLDs had poor conceptual knowledge within the scope of cattle breeding, cheesemaking, beekeeping, goose breeding, kavlca cultivation, greenhouse cultivation and carpetmaking business ideas. Especially in beekeeping and carpentry, it was revealed that the conceptual knowledge of all participants was at a low level. It is seen that there are very few students with moderate knowledge in kavlca cultivation, greenhouse cultivation and cheesemaking. In cattle breeding and goose farming business ideas, the conceptual knowledge of the students was found to be higher than the others. In addition, it was determined that teaching entrepreneurship business ideas with the courses given in secondary school was conceptually insufficient for the SRLDs. The present study also aims to draw attention to the fact that possessing conceptual knowledge is an effective variable on developing business ideas. This study revealed the conceptual knowledge levels of SRLD regarding local business ideas in a socio-economically disadvantaged region in eastern Türkiye. The research determined the extent to which students possessed accurate conceptual understanding of each business idea (cattle breeding, cheesemaking, beekeeping, goose breeding, Kavlca wheat cultivation, greenhouse farming, and carpet weaving) and identified the concepts in which they demonstrated deficiencies or misconceptions. The findings

provide valuable insights for addressing conceptual gaps in classroom practices for these students. Furthermore, the study offers important guidance for designing activities and modules that are aligned with students' current knowledge levels. In particular, the research emphasizes the significance of integrating economic and cultural activities from students' local environments into the learning process and contributes to the development of guidebook modules that are tailored to the local context. For future research, this study establishes a foundation for similar investigations in regions with comparable socio-economic conditions or in studies focusing on different business ideas. Moreover, it provides new data regarding the conceptual knowledge of SRLD, revealing the level of understanding these students have about business ideas they frequently encounter in daily life. This study is among the first to examine the conceptual knowledge levels of students with special educational needs in the context of local business ideas. It also lays the groundwork for future research aimed at testing the effectiveness of instructional methods and materials (e.g., hands-on modules) that support conceptual development. In summary, this research offers original data on the conceptual knowledge levels and deficiencies of SRLD and provides concrete recommendations for instructional materials and classroom practices.

Suggestions

The ease or difficulty of an entrepreneurship process affects whether students become entrepreneurs (Autio et al., 2001). It can be said that students' conceptual knowledge will facilitate the entrepreneurial activity. Franks and Frederick (2013) emphasize that the inquisitive and insightful personality traits of individuals with LD allow them to become entrepreneurs, but they also need conceptual (technical) knowledge regarding the business idea. Therefore, considering the results of the present study, it is recommended that the professional knowledge for entrepreneurship education in teacher training programs in the fields of science and social studies be reviewed and improved to meet today's needs. This study also aims to draw attention to the fact that having conceptual knowledge is an effective variable on business idea development for SRLDs. In future studies, the experiences of LD entrepreneurs toward conceptual knowledge can be revealed. Thus, the importance of possessing conceptual knowledge can be revealed from different angles. To support the conceptual knowledge development of these students, various adjustments can be implemented in classroom practices. In the instructional process, concretizing concepts, supplementing them with visuals and hands-on activities, and incorporating materials related to local

business ideas into the classroom can facilitate connections with daily life. In addition, group activities with short and comprehensible instructions related to business ideas, as well as technology-supported teaching methods, can be employed as elements that enhance conceptual learning. For example, within the theme of cheesemaking, students' conceptual knowledge can be reinforced through practical classroom activities. The teacher may introduce the basic stages of cheesemaking using visuals and materials and then ask students to dramatize the process. Furthermore, through small experimental practices, students may test the transformation of milk into cheese by observing processes such as fermentation and solidification. During this process, students make multiple observations and acquire related concepts, such as "it was liquid first, then it solidified." Alternatively, concept cards may be prepared to present the names, functions, and symbolic visuals of the materials used in cheesemaking, which can serve as the basis for designing various games. Students may also be asked to create a process flowchart on the question "How is cheese made?" Through these activities, students will both concretely grasp the process and gain opportunities to accurately learn the associated concepts. Such practices enable students with learning disabilities to acquire complex processes in simpler, more visual, and experiential ways, thereby supporting their conceptual development.

Limitations

In the present study, students who attend school in the city center of a rural province were investigated. Reaching LD students living in villages far from the provincial center with more opportunities for observation may provide different results that will contribute to the literature. Students at risk of learning disabilities were also included in this study. Reaching more diagnosed students may produce different study results. The type of learning disabilities of the diagnosed students who participated in the study is not officially accessible. Therefore, the study results could not be customized according to the type of learning disability.

Funding

This research paper is part of TÜBİTAK (It is in Türkiye) Project coded 221K148 "Designing, Implementing the Producing Generations Guidebook for Students with Learning Disabilities, and Evaluating Its Effect on the Psychological Resilience, Entrepreneurial Skills, Conceptual Understanding, and Nature Awareness"

References

- Ark, V. T., & Schneider, C. (2016). *Deeper learning for every student every day*. Gettingsmart.com

- Autio, E., Keeley, R. H., Klofsten, M., Parker, G. C., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, 2(2), 145–160.
- Celik, A., & Solmaz, E. (2023). Adaptation of an entrepreneurship education self-assessment scale at the tertiary level into Turkish. *International Journal of Assessment Tools in Education*, 10(4), 638–671. <https://doi.org/10.21449/ijate.1243812>
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20(1), 37–46.
- Çoruhlu, T. S., & Pehlevan, M. (2021). The effectiveness of the science experimental guidebook on the conceptual understanding of students with learning disabilities. *Journal of Science Learning*, 4(3), 230–243. <https://doi.org/10.17509/jsl.v4i3.30317>
- Department of Basic Education (DBE). (2011). *Curriculum and assessment policy statements: business studies: further education and training phase grades 10–12*. Department of Basic Education. <https://www.education.gov.za/Portals/0/CD/National%20Curriculum>
- Ekmekçioğlu, E. (2023). Examination of entrepreneurship skills of secondary school students with learning disability. [Unpublished Master Thesis]. Kafkas University.
- Er-Nas, S., Şenel-Çoruhlu, T., Çalık, M., Ergül, C., & Gülay, A. (2019). Investigating the effectiveness of the science experiments guidebook for students with learning disabilities. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 20(3), 501–534. <https://doi.org/10.21565/ozelegitimdergisi.484937>
- Eseadi, C., Phillip, A. A., Obasuyi, H. U., Obilezuru, C. F., Ugwuanyi, C. S., & Ugwuanyi, C. A. (2023). Correlates of entrepreneurial intention among students with neurodevelopmental disorders. *Bulletin of Counseling and Psychotherapy*, 5(1), 89–99. <https://doi.org/10.51214/bocp.v5i1.515>
- Franks, K., & Frederick, H. (2013). Dyslexic and entrepreneur: Typologies, commonalities and differences. *Journal of Asia Entrepreneurship and Sustainability*, 9(1), 95–115.
- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world, change the world*. SAGE.
- Gokool-Baurhoo, N., & Asghar, A. (2019). “I can't tell you what the learning difficulty is”: Barriers experienced by college science instructors in teaching and supporting students with learning disabilities. *Teaching and Teacher Education*, 79, 17–27. <https://doi.org/10.1016/j.tate.2018.11.016>
- Göksen-Olgun, S., Groot, W., & Wakkee, I. (2022). Entrepreneurship programs and their underlying pedagogy in secondary education in the Netherlands. *Entrepreneurship Education*, 5(3), 261–287. <https://doi.org/10.1007/s41959-022-00078-8>
- Govindasamy, P., Abdullah, N. B., & Ibrahim, R. B. (2021, September). Importance of entrepreneurship skills among student with learning disabilities. In *Proceedings of International Conference on Special Education* (Vol. 4).
- Govindasamy, P., Abdullah, N., & Ibrahim, R. (2022). Entrepreneurship skills for students with learning disabilities: A review from Malaysian National Curriculum. *Journal of Contemporary Social Science and Education Studies (JOCSES)*, 2(1), 12–25. <https://doi.org/10.5281/zenodo.10277047>
- Grigorenko, E. L., Compton, D. L., Fuchs, L. S., Wagner, R. K., Willcutt, E. G., & Fletcher, J. M. (2020). Understanding, educating, and supporting children with specific learning disabilities: 50 years of science and practice. *American Psychologist*, 75(1), 37–51. <https://doi.org/10.1037/amp0000452>
- Gwernan-Jones, R., & Burden, R. L. (2010). Are they just lazy? Student teachers' attitudes about dyslexia. *Dyslexia*, 16(1), 66–86.
- Hadley, G. R. (2023). A characterization and pedagogical analysis of youth entrepreneurship. *Entrepreneurship Education and Pedagogy*, 6(2), 223–250. <https://doi.org/10.1177/25151274221096035>
- Hayter, C. S. (2013). Conceptualizing knowledge-based entrepreneurship networks: Perspectives from the literature. *Small Business Economics*, 41, 899–911. <https://doi.org/10.1007/s11187-013-9512-x>
- Hewes, D. G. (2020). Entrepreneurs with dyslexia in Singapore: The incidence, their educational experiences, and their unique attributes. *Asia Pacific Journal of Developmental Differences*, 7(2), 157–198. <https://doi.org/10.3850/S2345734120000103>
- Hlady-Rispal, M., & Jouison-Laffitte, E. (2014). Qualitative research methods and epistemological frameworks: A review of publication trends in entrepreneurship. *Journal of Small Business Management*, 52(4), 594–614. <https://doi.org/10.1111/jsbm.12123>
- Huber, C. R., & Kuncel, N. R. (2016). Does college teach critical thinking? A meta-analysis. *Review of Educational Research*, 86(2), 431–468.
- Jensen, E., & Nickelsen, L. (2008). *Deeper learning: 7 powerful strategies for in-depth and longer lasting learning*. Corwin Press.
- Kaya, Z., Kaya, O. N., Aydemir, S., & Ebenezer, J. (2022). Knowledge of student learning difficulties as a plausible conceptual change pathway between content knowledge and pedagogical content knowledge. *Research in Science Education*, 52(2), 691–723. <https://doi.org/10.1007/s11165-020-09971-5>
- Kim, G., Kim, D., Lee, W. J., & Joung, S. (2021). The effect of youth entrepreneurship education programs: Two large-scale experimental studies. *SAGE Open*, 10(3), 1–21. <https://doi.org/10.1177/2158244020956976>

- Lin, J., Qin, J., Lyons, T., & Sekiguchi, T. (2023). Planning and evaluating youth entrepreneurship education programs in schools: a systematic literature review. *Entrepreneurship Education*, 6(1), 25–44. <https://doi.org/10.1007/s41959-023-00092-4>
- Logan, J. (2008). Analysis of the incidence of dyslexia in entrepreneurs and its implications, United States Association for Small Business and Entrepreneurship. Conference proceedings: 636-651.
- Logan, J. (2009). Dyslexic entrepreneurs: The incidence; their coping strategies and their business skills. *Dyslexia*, 15, 328–334. <https://doi.org/10.1002/dys.388>
- Logan, J., & Martin, N. (2012). Unusual talent: A study of successful leadership and delegation in entrepreneurs who have dyslexia. *Inclusive Practice*, 4(1), 57–76.
- Lytra, N., & Drigas, A. (2021). STEAM education-metacognition-Specific Learning Disabilities. *Scientific Electronic Archives*, 14(10), 41–48. <http://dx.doi.org/10.36560/141020211442>
- McPhail, G. (2021). The search for deep learning: A curriculum coherence model. *Journal of Curriculum Studies*, 53(4), 420–434. <https://doi.org/10.1080/00220272.2020.1748231>
- Miller, D., & Le Breton-Miller, I. (2017). Underdog entrepreneurs: A model of challenge-based entrepreneurship. *Entrepreneurship Theory and Practice*, 41(1), 7–17. <https://doi.org/10.1111/etap.12253>
- Naidoo, D., & Mabaso, M. (2020). Deep conceptual learning opportunities in business studies classrooms. *Journal of Education*, 81, 136–158. <http://dx.doi.org/10.17159/2520-9868/i81a08>
- Newman, L. A., Madaus, J. W., Lalor, A. R., & Javitz, H. S. (2019). Support receipt: Effect on postsecondary success of students with learning disabilities. *Career Development and Transition for Exceptional Individuals*, 42(1), 6–16. <https://doi.org/10.1177/2165143418811288>
- Pavey, B., Alexander-Passe, N., & Meehan, M. (Eds.). (2020). *Entrepreneurship, dyslexia, and education: Research, principles, and practice*. Routledge.
- Powers, B., Le Loarne-Lemaire, S., Maalaoui, A., & Kraus, S. (2021). “When I get older, I wanna be an entrepreneur”: The impact of disability and dyslexia on entrepreneurial self-efficacy perception. *International Journal of Entrepreneurial Behavior & Research*, 27(2), 434–451. <https://doi.org/10.1108/IJEBR-06-2020-0400>
- Rae, D., & Carswell, M. (2001). Towards a conceptual understanding of entrepreneurial learning. *Journal of Small Business and Enterprise Development*, 8(2), 150–158. <https://doi.org/10.1108/EUM00000000006816>
- Rogers, M., Hodge, J., & Counts, J. (2020). Self-regulated strategy development in reading, writing, and mathematics for students with specific learning disabilities. *Teaching Exceptional Children*, 53(2), 104–112. <http://dx.doi.org/10.1177/0040059920946780>
- Santoro, G., Ferraris, A., Del Giudice, M., & Schiavone, F. (2020). Self-efficacy and success of disadvantaged entrepreneurs: The moderating role of resilience. *European Management Review*, 17(3), 719–732. <https://doi.org/10.1111/emre.12394>
- Saranza, C., Bueno, N., Andrin, G., & Niñal, M. (2022). Teachers' entrepreneurial competence and teaching methods in entrepreneurship education: A basis for teachers training curriculum. *European Scholar Journal*, 3(6), 66–86.
- Stemple, C. (2020). *Learning disability as an influence on entrepreneurial calling and success*. Doctoral thesis. Liberty University, School of Business
- Sweller, J., van Merriënboer, J., & Paas, F. (2019). Cognitive architecture and instructional design: 20 years later. *Educational Psychology Review*, 31(2), 261–292. <https://doi.org/10.1007/s10648-019-09465-5>
- Taylor, K. E., & Walter, J. (2003). Occupation choices of adults with and without symptoms of dyslexia. *Dyslexia*, 9(3), 177–185.
- Venesaar, U., Malleus, E., Arro, G., & Toding, M. (2022). Entrepreneurship competence model for supporting learners development at all educational levels. *Administrative Sciences*, 12(1), 2. <https://doi.org/10.3390/admsci12010002>
- Wiklund, J., Hatak, I., Patzelt, H., & Shepherd, D. A. (2018). Mental disorders in the entrepreneurship context: When being different can be an advantage. *Academy of Management Perspectives*, 32(2), 182–206. <https://doi.org/10.5465/amp.2017.0063>
- Zimmerman, J. (2012). Using business plans for teaching entrepreneurship. *American Journal of Business Education*, 5(6), 727–742.

Tufan İnaltekin is an associate professor in the Science Education Program at Kafkas University, Kars, Türkiye.

Arzu Kirman Bilgin is an associate professor in the Science Education Program at Kafkas University, Kars, Türkiye.

Devrim Erginsoy Osmanoglu is an associate professor in the Psychological Counseling and Guidance Program at Kafkas University, Kars, Türkiye.

Şenay Özen Altunkaynak is an associate professor in the Early Childhood Education Program at Kafkas University, Kars, Türkiye.

Selma Erdağı is an associate professor in the Turkish Language Education Program at Kafkas University, Kars, Türkiye.

Please send correspondence to Tufan Inaltekin, inaltekitufan@gmail.com.

LEARNING DISABILITIES

A Multidisciplinary Journal

Joseph Morgan
Interim Editor

Editorial Policy

Learning Disabilities: A Multidisciplinary Journal is an official publication of the Learning Disabilities Association of America (LDA). The journal is a vehicle for disseminating the most current thinking on learning disabilities and to provide information on research, practice, theory, issues, and trends regarding learning disabilities from the perspectives of varied disciplines involved in broadening the understanding of learning disabilities. The disciplines represented in the journal include adults, advocacy, assessment, college programs, cultural differences, early childhood, public and private education, families, higher and adult education, law, mental health, public policy, research, science, social and emotional issues, social work, technology, and vocational and career education.

Manuscripts submitted should be data based; however, in some cases papers that discuss timely issues and trends may be appropriate. Papers that express opinions or describe standard treatment and/or diagnostic procedures, will, in most cases, not be suited to the purposes of the journal. Submission of papers with nontraditional points of view is encouraged. All papers submitted are subjected to blind review by experts in the discipline represented in the paper. Papers are evaluated on the basis of the contributions made to the fund of knowledge on learning disabilities.

Viewpoints expressed in articles in *Learning Disabilities: A Multidisciplinary Journal* represent the views of the authors and in no way reflect the opinions or endorsement of LDA or the editors.

Author Guidelines

Manuscripts are received with the understanding that they are the original works of the authors, have not been published elsewhere, and are not being considered for publication by another journal. LDA must have exclusive option to publish the manuscript for a period of one year from the date of submission.

Each manuscript must have a cover sheet with the names and affiliations of all authors and the address of the principal author. No other identifying information should be on the manuscript so that it can be eligible for blind review. For each author, a short biography including title, present position, and highest earned degree should be included. An abstract of approximately 200 words must accompany the manuscript. The authors must secure permission to include quoted material of 150 or more words and previously published tables and figures. Prior to final acceptance of articles for publication, clean copies of figures and tables must be submitted to the editor. All images that are submitted must be 300 dpi. Please submit manuscripts as an attachment to an e-mail to info@ldaamerica.org.

Prior to final acceptance of the manuscript, the authors may be asked to make minor or major revisions. However, the editor reserves the right to make minor editorial changes that do not affect the meaning of the paper. Copyrights for all articles published must be assigned to LDA. Questions may be addressed to the editor at the address below.

The manuscript must be written according to the guidelines of the most recent edition of the *Publication Manual of the American Psychological Association*.

For online article submission instructions, go to <http://js.sagamorepub.com/ldmj/about/submissions>.

To contact the interim editor, email Joseph Morgan, joseph.morgan@unlv.edu
