

Dysgraphia in EFL learners

Disgrafía en alumnos de EFL

Laura Jeniffer Makensie Vera^{1*}

¹ Universidad Técnica de Cotopaxi -Extensión Pujilí. ORCID: <https://orcid.org/0009-0002-9558-8929>.

Correo: laura.makensie0493@utc.edu.ec

Diego Wladimir Morales Parraga²

² Universidad Técnica de Cotopaxi -Extensión Pujilí. ORCID: <https://orcid.org/0009-0001-2007-4475>.

Correo: diego.morales8088@utc.edu.ec

Olga Lorena González Ortiz³

³ Universidad Técnica de Cotopaxi -Extensión Pujilí. ORCID: <https://orcid.org/0000-0003-0064-1601>.

Correo: olga.gonzalez@utc.edu.ec

Víctor Hugo Romero García⁴

⁴ Universidad Técnica de Cotopaxi -Extensión Pujilí. ORCID: <https://orcid.org/0000-0002-8975-5818>.

Correo: victor.romero@utc.edu.ec

*** Autor para correspondencia:** diego.morales8088@utc.edu.ec

Abstract

The aim of this research is to identify dysgraphia cases among rural EFL learners at Patronato de Amparo Social “Niño de Isinche” during the academic year 2024-2025, so that future researches can adapt activities to support children with handwriting difficulties. The study employed a descriptive, cross-sectional, qualitative research approach with a non-experimental design, using an adapted Dysgraphia Test and expert - validated rubric. The findings reveal signs of dysgraphia such as inconsistency in letter size, poor alignment of text, and omission of letters or words. These results highlight the need to provide writing support to EFL students and the importance of identifying and addressing these types of learning disabilities to promote inclusive education. It is recommended to implement teaching strategies that are adapted to the needs of students with dysgraphia in order to improve their academic performance in EFL learning. In addition, the importance of training teachers in inclusive education is highlighted, in order to effectively address these learning disabilities. In conclusion, this study contributes to underrepresented research on dysgraphia in rural Latin America EFL contexts.



Esta obra está bajo una licencia Creative Commons de tipo (CC-BY-NC-SA).

Sociedad Ecuatoriana de Investigación Científica. E-mail: revistaalcon@gmail.com



Keywords: *dysgraphia, EFL learning, writing difficulties, rural education, instructional strategies.*

Resumen

El objetivo de esta investigación fue identificar casos de disgrafía en estudiantes rurales de inglés como lengua extranjera (EFL) del Patronato de Amparo Social “Niño de Isinche” durante el año académico 2024-2025, para que futuras investigaciones puedan adaptar actividades que apoyen a los niños con dificultades en la escritura. El estudio empleó un enfoque de investigación descriptivo, transversal y cualitativo, con un diseño no experimental, utilizando una prueba adaptada de disgrafía y una rúbrica validada por expertos. Los hallazgos revelan signos de disgrafía como inconsistencia en el tamaño de las letras, mala alineación del texto y omisión de letras o palabras. Estos resultados resaltan la necesidad de brindar apoyo en la escritura a los estudiantes de EFL y la importancia de identificar y abordar este tipo de dificultades de aprendizaje para promover una educación inclusiva. Se recomienda implementar estrategias de enseñanza adaptadas a las necesidades de los estudiantes con disgrafía, con el fin de mejorar su rendimiento académico en el aprendizaje del inglés. Además, se destaca la importancia de capacitar a los docentes en educación inclusiva para abordar eficazmente estas dificultades. En conclusión, este estudio aporta a la escasa investigación sobre la disgrafía en contextos rurales de EFL en América Latina.

Palabras clave: disgrafía; aprendizaje de EFL; dificultades en la escritura; educación rural; estrategias instruccionales.

Fecha de recibido: 21/02/2024

Fecha de aceptado: 15/06/2025

Fecha de publicado: 26/06/2025

Introduction

Dysgraphia is a learning disability and neurodevelopmental disorder that limits the ability to develop written texts in a legible and effective manner. According to Gary et al. (2023), dysgraphia is considered both a neurological disorder and a learning disability. Neurologically, it affects the student's handwriting and fine motor skills. As a learning disability, it interferes with almost all aspects of the writing process, such as spelling, legibility, word spacing and size, and letter shape. Moreover, identifying dysgraphia in students who are learning English as EFL in rural settings is key to improving academic performance and promoting inclusive education. Teachers can adapt students' assignments by reducing the amount of work, assessing specific aspects, or dividing activities, while ensuring they stay in a regular classroom environment with the necessary support to facilitate learning (Chung, 2020).

Writing is a key skill in second language acquisition for EFL learners. However, some students face quite strong problems in this area due to dysgraphia, as it affects the ability to transfer spoken language into written form (Pokrivčáková, 2018). In rural areas of Latin America, dysgraphia hinders the learning of a new language and reflects a neglected problem. In Ecuador, Veintimilla & Barba (2023) point out that in rural contexts in Ecuador, dysgraphic conditions restrict the child's active participation in class and remain little investigated.



Esta obra está bajo una licencia *Creative Commons* de tipo (CC-BY-NC-SA).

Sociedad Ecuatoriana de Investigación Científica. E-mail: revistaalcon@gmail.com

An investigation conducted by Veintimilla & Barba (2023) in the rural parish of Toacaso, Cotopaxi, revealed that 4 of 21 students at the “Coronel Héctor Espinoza” school were diagnosed with this condition.

For this reason, that this study aims to identify students with dysgraphia in learning English as a foreign language (EFL) in the rural area of the Patronato de Amparo Social “Niño de Isinche”, which will allow teachers to adjust their methodologies and pedagogical practices to provide better support to students with writing difficulties. Thus, reinforcing the educational quality of EFL students in rural contexts.

FRAMEWORK

Learning Disabilities

Knowledge of SLDs is essential in helping students because it yields methods that adapt to the needs of the learner thus promoting learning among students. This knowledge allows teachers to tailor teaching strategies, creating a more inclusive and supportive learning environment. Panjwani-Charania (2023) establishes that “Learning disabilities, also known as neurodevelopmental disorders, are due to genetic or neurobiological factors that alter brain functions” (p.3).

Dysgraphia

Dysgraphia is known as other SLD which indicate the difficulties in the writing ability, containing different difficulty with handwriting, and spelling. Calle & Murillo (2022) define that dysgraphia is a learning disability that prevents to have a clear writing.

Muktamath et al. (2022) say the following:

This is a type of learning disability that often affects children. A particular type of learning disorder known as dysgraphia is identified in children and affects fine motor skills and handwriting, causing children to develop inadequate handwriting, low for their age level, which affects their school development and learning. Dysgraphia is also known as spelling disorders, a very common problem is the inadequate spacing of letters and words.

Dysgraphia is determined to be a learning disability that affects EFL students' writing skills and needs to be recognized quickly in order to provide support and adapt learning strategies to help children with their challenges in order to achieve success in their academic tasks and in acquiring English as EFL.

How to identify dysgraphia learners?

Writing is a difficult skill to develop and much more complicated for students who are just learning to write. As teachers we have the task of identifying students who have dysgraphia.

According to Subban et al., (2023), Teachers have to acquire specific skills and training to be able to identify students with needs and adapt and adapt activities for students with learning diversity.

- Incapacity to accurately write letters
- Laboriously and slowly writing
- Handwriting that is difficult to read
- Hate coloring and writing assignments



- Writing in an uncomfortable posture while holding the wrist, arm, fingers, or paper.
- Falling short of peers in writing abilities

Dysgraphia Symptoms

Identifying and knowing the symptoms of dysgraphia is essential because it allows early detection of this writing difficulty and provides the necessary support to students who present it.

Muktamath et al. (2022) claimed that,

- Avoidance of written work: People with writing difficulties often avoid doing written work.
- Limited production: They generate only a few words or phrases at a time, whereas their classmates write multiple paragraphs.
- Difficulties in composition: They face great difficulty in composing texts, resulting in a failure to produce coherent content.
- Technical errors frequently involve a range of problems, including issues with punctuation, grammar, word choice, sentence structure, and paragraph organization.
- Omission of words: On many occasions they tend to omit words in sentences or leave them unwritten so that they are incomplete.
- Lack of capitalization: They do not properly capitalize the first letter of what they write.
- Poor organization: Handwritten papers are poorly organized and sized, with weak paragraph structure and little cohesion between sentences.
- Incorrect size and shape of letters: Incorrect use of upper- and lower-case letters, inverted letters and the combination of handwriting and cursive are examples of illegible handwriting affecting comprehension.
- Note-taking: It is very complicated as it requires simultaneous listening and writing, which complicates the basic tasks.
- Confusion of similar sounds: Confusing letters or sounds that may sound the same when dictated (e.g., “hark” for “hard”; “skeree” for “scared”).
- Spelling difficulties: Involve severe complications in distinguishing between words, as seen in examples such as “tal” vs. “talk,” “conscious” vs. “consious,” and “necessary” vs. “necessery.” Use of erroneous letter combinations: They use letter combinations that are not systematically allowed (e.g., “egszakt” for “exact”; “diskus” for “discuss”; “freeeqwnt” for “frequent”).
- Text alignment is poor, with variable page placements in terms of lines and margins, as well as unequal space between words and characters.
- Irregular spacing: They have irregular spacing between words and letters, which affects the readability of the text.
- Insufficient grasp of the writing instrument: They hold the writing instrument in an unusual or tight grip, frequently holding it too close to the paper or writing from the wrist by covering the thumb with two fingers.

It's crucial to recognize and address these symptoms to identify and support students with dysgraphia, a specific learning disorder (SLD).



EFL Students' Writing

In EFL writing is a successful skill that needs learners to communicate and generate ideas via written materials. Albashir (2021) defines that writing is a valuable productive ability that benefits ESL/EFL students' language learning and retention. Therefore, developing this skill is crucial for improving linguistic competence and written expression in the language.

What are the assessment tools for identifying students with dysgraphia?

Identifying dysgraphia in children is very important to know how to help these children, for this reason in this section know different assessments to identify the dysgraphia.

According to Kerville (2010) there are a lot of types of assessment to identify dysgraphia in childrens:

1. Full Alphabet Writing

- Distribute the KISD Learner writing manual to each child.
- Instruct them to write the letters till you say "stop". Don't give them clues about uppercase or lowercase letters.
- Time the children for one minute and ask them to pause.
- Use a red pen or highlighter to mark each student's last letter.

2. Sentence Copying

- Clearly print or type the following text, which can be written on the board before testing and kept out of sight. It will be revealed at the beginning of the examination. (Suggestions: Could be done on the SMART board.)
- Sentence: The speedy brown fox leaps over the sluggish dogs.
- Ask youngsters to continue copying the phrase on the KISD Student Handwriting Form until you say "stop."
- Watch the pupils write the sentence for one minute. If a student finishes the phrase before the time limit, have the student repeat the sentence until prompted to stop.
- The instructor must mark each student's last letter written using a red pen or highlighter.

3. Dictation Sentence

Students will be asked to write a dictated sentence on the KISD Student Handwriting Form in their best handwriting without a visual model. They should not extend or over-articulate words since this might lead to phonetic breakdown. Students will write as much of the statement as they can recall, with no consequences for omissions or misspellings. Students will read the statement aloud and repeat it three times. The sentences below will be used at various grade levels:

First grade: "We will take the bus to the zoo."

Second grade: "I will eat all three hot dogs for lunch."

Third grade: "I have eight books about jungle animals."

Fourth grader: "I found an orange pencil to write a letter to my aunt."

5th–12th grade: "Today I will go to the museum to see the Egyptian exhibit."

Timing begins when pupils begin writing and lasts for one minute.

Spelling



Students will be asked to spell the following words on the KISD Student Handwriting Form. The approach will have the teacher state each spelling word, use it in a sentence, and then repeat the word. Students will then write the term on their forms.

For grades one and two:

Onward: "He climbed up the hill." Up.

Will: "She can ride her bike." Can.

He said: "He had a birthday." He.

Five words: "She has five new pencils." Five.

cook something: "We will make pancakes." Make.

For grades three and four:

tiny wrote: "The little girl was laughing." Little.

Home: "We live in a blue house." House.

Aquarius: "The dog drank some water." Water.

Fresh: "I ate fresh food." Fresh.

For Grades 5–12:

Dollar. My father has a old dollar. Dollar.

Wednesday. On the last Wednesday we went to music class. Wednesday.

Copied. I copied my exam. Copied.

Appreciate. I appreciate the flowers, thank you. Appreciate.

Hospital. My sister is at the hospital for emergency care. Hospital.

These types of tests help identify dysgraphia, dysgraphia problems, and also help evaluate the handwriting and spelling that EFL children may have in a sentence copying. They provide insight into students' writing problems, allowing for better support. Kerville (2010) used these and other tools to assess dysgraphia.

Strategies for Overcoming Dysgraphia

Strategies for overcoming dysgraphia include methods designed to improve writing ability and mitigate the challenges associated with the disorder. These strategies can range from adjustments in the writing environment to the use of specialized tools and techniques to facilitate the writing process.

George (2020) states that,

Children with dysgraphia often struggle to intuitively understand the rules of writing. As a result, teachers use explicit instruction to help them learn these rules, such as identifying the correct placement of verbs and nouns in sentences and using punctuation effectively. Additionally, educators may teach students specific prompts or cues to help them remember the unique elements of different writing styles, like storytelling, using mnemonic aids. To support the planning process, graphic organizers are often provided. One of the key areas where children with dysgraphia face challenges is transcription, which includes handwriting, keyboarding, and spelling. To improve in this area, teachers frequently employ multisensory techniques.

Activities to improve handwriting



Esta obra está bajo una licencia *Creative Commons* de tipo (CC-BY-NC-SA).

Sociedad Ecuatoriana de Investigación Científica. E-mail: revistaalcon@gmail.com

Knowing about the different activities that can be used to teach dysgraphic students is very important to improve the learning disorder (dysgraphia).

Kerville (2010) give several activities to improve handwriting that is:

- Hand strengthening through clay play: Use clay play to develop hand power.
- To pick up little things, use tongs or pincers. Using tongs or pincers to pick up small objects helps strengthen the hand.
- Holding lines inside labyrinth improves motor control.
- Combining dotted shapes and lines to create whole letters encourages writing skills.
- Stringing beads: String wooden or plastic beads to develop hand coordination and strength.
- Create letters, shapes and designs in trays of salt or sand: Form letters, shapes and designs in trays of salt or sand to improve motor control and creativity.
- Writes on both vertical and transverse surfaces using a variety of materials, such as sand on the floor encouraging the development of motor skills and creative expression.
- Hand-eye coordination activities: Encourage children to participate in activities that improve their hand-eye coordination, such as sports that require motor function like handball.

Now, Kerville (2010) say the follow:

Once children have acquired the ability to form legible letters, they can benefit from activities designed to enhance automatic letter writing. The following activities are particularly efficacious:

- Short Text Writing: This includes composing brief notes, thank-you messages, prescriptions, recipes, shopping lists, parent-child response journals, and to-do lists, both with and without copying.
- Solving Word Searches with Specific Syllable or Morphemic Patterns: Engaging in word searches that incorporate specific syllable or morphemic patterns can improve word recognition and writing skills.
- Practicing Letter Writing or Utilizing a Handwriting Program: Regular practice in writing letters or employing a handwriting program can significantly enhance handwriting abilities.

Materials and methods

Research Method

The research employed a descriptive qualitative cross-sectional and non-experimental design. Descriptive qualitative research, according to Regoniel 2023, delves into or explores the characteristics of a phenomenon with the goal of providing a detailed understanding of the topic. This study identifies students' dysgraphia through signs or also known as dysgraphia indicators through non-numerical data, focusing on patterns without statistical analysis, and is framed within a cross-sectional design since data were collected at a single point to describe the variable. It is a non-experimental study, as the variable was not manipulated or controlled. Cross-sectional studies, according to Wang & Cheng 2020, are observational, while non-experimental studies, described by Thompson & Panacek 2007, are limited to observing and describing results without manipulation.



Instruments

To identify dysgraphia in EFL students, this study adapted the Dysgraphia Test, inspiration from Kerville (2010), who developed various assessments, including sentence copying, writing all the letters of the alphabet, dictation sentences, and so on, to identify dysgraphia. In the adaptation of the test, two tasks were selected and adapted from the original Kerville (2010) test. The adapted test, called “Sentence Copying Test,” is an assessment activity designed to measure learners' written transcription skills. The instrument consists of a model sentence that includes all the letters of the alphabet using a basic vocabulary that is easy for students to recognize and understand as the object of study and that must be reproduced by the participants in a later section of the test. This section is structured with guide lines, a graphic resource that facilitates the standardization of writing by means of two variants, continuous lines that delimit the upper and lower spaces, establishing the margins within which the strokes of the letters should be placed, and broken lines that function as an auxiliary reference for the correct formation of characters of average height, ensuring uniformity in writing.

This system of lines, known in the pedagogical field as “children's writing guides”. This adaptation was inspired by Kerville's work, specifically his adaptation of sentence-copy task to recognize and understand dysgraphia more broadly in a variety of educational contexts (Kerville, 2010). The goal of this adaptation is to provide a clear and effective way to recognize dysgraphia, making the test more easily accessible to younger students by focusing on familiar words and letter usage. In addition, to identify dysgraphia in the adapted version of the 2010 Kerville test, specifically in the sentence copying task that included all letters of the alphabet, the researchers developed a rubric that contained symptoms or indicators of dysgraphia. These were based on the signs described by Muktamath et al. (2022), including incoherent letter sizes and shapes, poor alignment, irregular spacing, capitalization errors, omission of letters or words, punctuation errors, and writing fluency problems.

The adaptation was validated by three professionals in the area, two experts in Linguistics and one expert in Educational Psychology. Also, the rubric was validated by the aforementioned experts. These observable symptoms served as the indicators that allowed us to identify whether a student had dysgraphia. This test was applied to EFL rural students aged 6-15 years, to identify students with dysgraphia in learning English as a foreign language (EFL), so that future research can adapt activities to support children with handwriting difficulties.

Results and discussion

RESULTS

The analysis of results identified prevalent patterns of dysgraphia in the major of the participants, most students showed inconsistent letter sizes and shapes, with extreme cases such as Fetuchini's handwriting varied drastically, with letters being excessively large, small or irregularly shaped, an example of this is when the Fetuchini write “elephant dance with”. Other dysgraphia indicator or sign is poor alignment problems were also frequent, as seen in Pepe's handwriting, with words falling well above or below the guide lines. Others students like Arenita, Pepe, Fetuchini's, Espero and so on, showed frequent capitalization errors for



example writing “jack” instead of “Jack”, omission of letters is another indicator of dysgraphia, this indicator was observed in different words, an example of which is as follows in this case the student write ‘vibran’ for “vibrant”, and absence of punctuation marks (Fabula skipped all punctuation marks) further interfered with readability. Irregular spacing, as in the case of Fetuchini, who merged “whilezebras” instead of “while zebras” and letter substitutions, an important indicator of dysgraphia (e.g., ‘jumpz’ for “jumps”), in which case students substituted the letter s for the letter z, compounded these problems. Notably, word omissions, such as Blue's exclusion of “vibrant,” altered the meaning of sentences, highlighting the various manifestations of dysgraphia in these students.

Students were classified as dysgraphic only if they showed more than three characteristic signs of the condition. Those showing only one indicator were not included in this category, as a single case could simply reflect momentary inattention, test anxiety, or an isolated error. To ensure reliable identification, we required multiple concurrent signs or indicators to assess dysgraphia in students.

Table 1. Observed Dysgraphia Indicators in Sentence Copying Task

Type of test	Dysgraphia Indicator / signs	Interpretation / specific error made by the student	Students (Nicknames) Who present the indicator
Sentence copying	Inconsistent letter sizes and shapes	Severe cases exhibited dramatic within-word letter size inconsistencies (e.g., Fetuchini's when write elephant dance with). This extreme size variation was observed across all identified dysgraphic students.	Fetuchini, Pepe, Araña, Añañin, Fabula, Maruchan, Tina, Joha, Lady, Machupicho, Trixana, Iansito, Blue, Mundo Rey, Ani
	Poor alignment of text	Words and letters not written on the line or slanted incorrectly	Fetuchini, Pedro, Espero, Isa, Pepe, Arenita, Araña, Añañin, Fabula, Maruchan, Tina, Lady, Machupicho, Rabbit, Nacho
	Capitalization errors	Incorrect use of capital letters, in different cases it is observed that several students use capital letters incorrectly, a clear example of this is when Fetuchini writes the following “jack” instead of “Jack”.	Fetuchini, Pedro, Isa, Pepe, Lady, Machupicho, Blue
	Letter omission	This is a very common mistake among most students, as they omit letters within words. For example, Isa wrote “vibran” instead of “vibrant”.	Fetuchini, Espero, Isa, Fabula, Rabbit, Luchito, Portero, Luna, Nacho, Ani, Blue
	Punctuation errors	Omitting punctuation marks is a common error. Students often omit periods, commas, or other punctuation marks, or sometimes add them even though they are not in the sentence they were supposed to copy." For example in	Fetuchini, Pedro, Espero, Pepe, Fabula, Ailinne, Dog.



	the all copying sentence Fabula omit the comma and the point.	
Irregular spacing between words/letters	The student shows inconsistent spacing in writing, which makes it difficult to read the text and affects his fluency e.g., when Fetuchini writes “whilezebras”, this error is noticeable.	Fetuchini, Araña, Añañin, Fabula, Maruchan, Tina, Rabbit, Ani, Dog
Letter substitutions	Substitution of correct letters for incorrect ones, a clear example of this is given by several students, one of them in the whole paragraph confuses the letter “z” with the letter “s” (for example, he writes ‘jumpz’ instead of “jumps”).	Celeste, Ila Delgado, Araña, Fabula, Mundo Rey
Word omission	This error was made by onestudents who omitted the word “vibrant” when writing the sentence. This seems to be related to their difficulty in writing complete sentences. Later, one of them tried to correct it by adding the missing word at the end.	Blue

DISCUSSION

The results indicate that EFL learners in rural contexts exhibit common indicators or signs of dysgraphia, manifested primarily through patterns such as inconsistency in letter size and shape (e.g., excessive within-word variations), text misalignment (e.g., writing above or below the reference line), and letter omissions or substitutions (e.g., “vibrating” for “vibrant”). These results are related to those of Crouch and Jakubecy (2007), who dealt with a second-grade student already diagnosed with dysgraphia previously and showed that specific fine motor and repetitive writing exercises potentially improved the student's handwriting. Similarly, Viedas (2014) found that 70% of the students faced writing problems related to motivation and spelling, aspects that were also observed and analyzed in our research. Likewise, Vukoja (2024) showed that the application of the Multisensory Structured Language (MSL) method improved and helped in supporting English proficiency in 80% of students diagnosed with dysgraphia, which recommends that multisensory strategies could be a fundamental piece to improve writing in EFL educational contexts. Likewise, Muktamath et al. (2022) reported that 78% of students with dysgraphia exhibited spatial organization and fine motor skill difficulties, findings reflected in our study through irregular letter sizing and poor text structure. These results highlight the need for specialized pedagogical activities to improve writing skills in EFL students with dysgraphia.

These findings contribute to the understanding of dysgraphia in EFL by uncovering how it manifests in resource-limited settings, such as rural environment, where challenges are compounded by the combination of second language learning and acquisition problems. While studies such as those by Crouch and Jakubecy (2007) and Muktamath et al. (2022) have detected similar problems in mother tongue contexts, our research





highlights the peculiarity of the case of rural EFL, where factors such as less exposure to English and the scarcity of adapted materials exacerbate these difficulties. Likewise, the observations are in line with what Viedas (2014) pointed out regarding the motivational impact, as several participants showed remarkable frustration when facing written tasks.

Conclusion

This research confirmed that dysgraphia significantly affects writing development in EFL rural learners, leading to difficulties in spelling, coherence, and motivation. Previous studies emphasize the importance of well-articulated interventions and teacher-in-charge training to support the students concerned.

They also conclude that the dysgraphia test together with the rubric that had as criteria the signs or indicators to identify dysgraphia revealed that most of the students denoted severe dysgraphia problems, such as inconsistent font sizes, poor alignment, and omissions. The results highlight the need to immediately implement specific teaching activities to improve writing skills and promote inclusive education in the context of second language acquisition.

In conclusion, the results showed that mayor part of the students presented dysgraphia, with inconsistent letter size, misalignment and capitalization errors as the most common problems. These findings underscore the necessity for future research can adapt pedagogical activities to address dysgraphia and enhance writing skills in EFL learners.

Referencias

- Albashir, J. O. (2021). EFL Students' Needs for Improving Their Writing Skills. *Scholars International Journal of Linguistics and Literature*. DOI:[10.36348/sijll.2021.v04i04.004](https://doi.org/10.36348/sijll.2021.v04i04.004)
- Chung, P. J., Patel, D. R., & Nizami, I. (2020). Disorder of written expression and dysgraphia: definition, diagnosis, and management. *Translational pediatrics*, 9(1), S46.doi: [10.21037/tp.2019.11.01](https://doi.org/10.21037/tp.2019.11.01)
- Crouch, A. L., & Jakubecy, J. J. (2007). *Dysgraphia: How it affects a student's performance and what can be done about it*. *TEACHING Exceptional Children Plus*, 3(3), Article 5. [ERIC - EJ967123 - Dysgraphia: How It Affects a Student's Performance and What Can Be Done about It, TEACHING Exceptional Children Plus, 2007-Jan](https://eric.ed.gov/?id=EJ967123)
- Gary, A., Moore, A., Hilliard, W., Day, M., Boswell, B., & Barnhill, M. (2023). Understanding dysgraphia. *Nursing Made Incredibly Easy*, 21(2), 15-22. <https://dx.doi.org/10.1097/01.nme.0000913956.02847.5a>
- George, D. (2020). Different Strategies to Overcome Dysgraphia. *Educational Extracts*, 12. https://stcte.ac.in/wp-content/uploads/2021/05/Educational_Extracts_Vol8_Issue1_Jan_2020.pdf#page=14
- Kerville, I. S. D. (2010). *Dysgraphia Handbook and Manual*. https://mastwo.weebly.com/uploads/1/9/4/3/19430239/dysgraphia_handbook_2012.pdf





- Mishra, S. B., & Alok, S. (2022). *Handbook of research methodology*. Educreation publishing. [HANDBOOK OF RESEARCH METHODOLOGY](#)
- Muktamath, V. U., Hegde, P. R., & Chand, S. (2022). *Types of specific learning disabilities. Learning Disabilities-Neurobiology, Assessment, Clinical Features and Treatments*. IntechOpen. https://books.google.es/books?hl=es&lr=&id=LNJuEAAAQBAJ&oi=fnd&pg=PA3&dq=SLD+DYSGRAPHIA&ots=vXUmegi4Ww&sig=Ib_schdaw_KD1pUd3c513UliXI8
- Panjwani-Charania, S., & Zhai, X. (2023). AI for students with learning disabilities: A systematic review. <https://ssrn.com/abstract=4617715>
- Pokrivčáková, S. (2018). *Dyslectic and Dysgraphic Learners in the EFL Classroom: Towards an Inclusive Education Environment*. https://publikace.k.utb.cz/bitstream/handle/10563/1009060/Fulltext_1009060.pdf?sequence=3
- Regoniel, P. (2023). Exploring phenomena: A brief guide to conducting descriptive qualitative research. *Simplyeducate.me*. <https://simplyeducate.me/2023/04/10/descriptive-qualitative-research/#key-features-of-the-descriptive-qualitative-research>
- Sofaer, S. (1999). Qualitative methods: what are they and why use them?. *Health services research*, 34(5), 1101. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1089055/pdf/hsresearch00022-0025.pdf>
- Subban, P., Bradford, B., Sharma, U., Loreman, T., Avramidis, E., Kullmann, H., Sahli Lozano, C., Romano, A., & Woodcock, S. (2023). Does it really take a village to raise a child? Reflections on the need for collective responsibility in inclusive education. *European Journal of Special Needs Education*, 38(2), 291–302. <https://doi.org/10.1080/08856257.2022.2059632>
- Thompson, C. B., & Panacek, E. A. (2007). Research study designs: Non-experimental. *Air medical journal*, 26(1), 18-22. [10.1016/j.amj.2006.10.003](https://doi.org/10.1016/j.amj.2006.10.003)
- Veintimilla Martínez, A. L., & Barba Gallardo, P. A. (2023). La disgrafía y sus impactos en el aprendizaje de los niños [Dysgraphia and its impact on children's learning]. *Revista Científica Arbitrada Multidisciplinaria PENTACIENCIAS*, 5(6), 467–475. <https://doi.org/10.59169/pentaciencias.v5i6.869>
- Viedas, C. M. G. (2014). *Problems that young learners have during writing a foreign language* [Licenciatura thesis, Benemérita Universidad Autónoma de Puebla, School of Language]. [content](#)
- Vukoja, N. (2024). *Dyslexia and dysgraphia in learning English as a foreign language: A case study of Croatian EFL learners* [Master's thesis, Josip Juraj Strossmayer University of Osijek, Faculty of Humanities and Social Sciences.] [Repozitorij Filozofskog fakulteta u Osijeku](#) [Dyslexia and Dysgraphia in Learning English as a Foreign Language: A Case Study of Croatian EFL Learners | FFOS-repozitorij](#)
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest*, 158(1), 65-71. <https://doi.org/10.1016/j.chest.2020.03.012>

