



Cover Page

TECHNICAL UNIVERSITY OF COTOPAXI PUJILI EXTENSION

**PEDAGOGY OF NATIONAL AND FOREIGN LANGUAGES
UNDERGRADUATE PROGRAM**

RESEARCH REPORT

**AN INTERACTIVE INSTRUCTIONAL MODULE FOR
ELEMENTARY ENGLISH TEACHERS ON DYSLEXIA IN
ENGLISH LANGUAGE LEARNING**

Research report before obtaining the bachelor degree in National and Foreign
language Pedagogy, English Major

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De La Cruz Yugcha Angel Stalin, con cédula de ciudadanía No. 0503853780, Jaya Orozco Gabriel Omar, con cédula de ciudadanía No. 0550674659 declaramos ser autores del presente **PROYECTO DE INVESTIGACIÓN: “AN INTERACTIVE INSTRUCTIONAL MODULE FOR ELEMENTARY ENGLISH TEACHERS ON DYSLEXIA IN ENGLISH LANGUAGE LEARNING”**, siendo la MSc. Abata Checa Fanny Mercedes, tutor del presente trabajo; y, eximo expresamente a la Universidad Técnica de Cotopaxi y a sus representantes legales de posibles reclamos o acciones legales.

Además, certifico que las ideas, conceptos, procedimientos y resultados vertidos en el presente trabajo investigativo, son de mi exclusiva responsabilidad.

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En calidad de Tutor del Proyecto de Investigación sobre el título:

“AN INTERACTIVE INSTRUCTIONAL MODULE FOR ELEMENTARY ENGLISH TEACHERS ON DYSLEXIA IN ENGLISH LANGUAGE LEARNING”, de De La Cruz Yugcha Angel Stalin; Jaya Orozco Gabriel Omar, de la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros, considero que dicho Informe Investigativo es merecedor del aval de aprobación al cumplir las normas técnicas, traducción y formatos previstos, así como también ha incorporado las observaciones y recomendaciones propuestas en la pre-defensa.

Pujilí, 28 de julio de 2025



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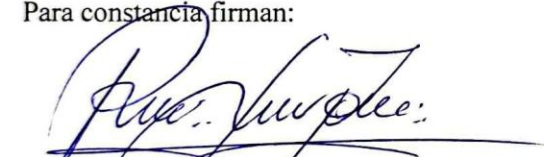
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GRATEFULNESS

We would like to express our sincere thanks to all the people who helped us develop this project. Especially our tutor, MSc. Mercedes Abata, who guided us every step of the way and from whom we have learned so much about what it means to be good teachers, dedicating ourselves and putting effort into everything we do. We also want to thank each of the professors in our major, whose knowledge and experience have guided us throughout our university journey. Finally, we would like to express our gratitude to our loved ones and friends, whose support has been with us every step of the way.

Angel & Omar

DEDICATION

I dedicate this work to the most important person in my life, my mother, Martha. Who has supported me unconditionally. Although she could not be present during this stage of my life, I know that all her effort and sacrifice will not be in vain. To my sister, Alejandra, who has become my motivation to be a better person and who fills my days with joy.

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To each and every one of them, I offer my deepest gratitude.

Angel

DEDICATION

To God, for guiding me and taking care of me every day.

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To my dear mother, who, with her love, guided my life despite the problems and was my pillar and light in dark moments.

To my group of friends: Angel, Alex, and Danny who stand by my side and helped me at every moment.

To my best friend, Angel, for helping me when I needed it most.

To my teachers, who saw the best in me and pushed my professional growth without ever questioning my actions.

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Omar

TECHNICAL UNIVERSITY OF COTOPAXI
PEDAGOGY OF NATIONAL AND FOREIGN LANGUAGES
UNDERGRADUATE PROGRAM

THEME: AN INTERACTIVE INSTRUCTIONAL MODULE FOR ELEMENTARY ENGLISH TEACHERS ON DYSLEXIA IN ENGLISH LANGUAGE LEARNING

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ABSTRACT

One of the most common learning disabilities that affect students when learning a language is dyslexia. It affects reading, writing, and word comprehension that can limit students' learning, so it is vital that teachers can be prepared to teach English to dyslexic students, applying strategies and adapted activities to ensure inclusive education. This study aimed to design an interactive instructional module for elementary English teachers called "Dealing with dyslexia". For this, the ADDIE model guided the proposal development through five phases: Analysis, Design, Development, Implementation, and Evaluation. Then, a quantitative methodology was applied in order to present the proposal validation. A checklist was used to measure how well the module was developed and whether it met the necessary aspects like: accessibility, interactivity, clarity of instructions, educational content, instructional design and presentation, to be used for teacher training. Five experts in the field of education and learning difficulties contributed to the validation of the proposal. The findings showed that the Mean Score was 26.2 out of 30 (87%), reflecting strong perceived quality; the general standard deviation was 0.34, showing consistent agreement; and the Content Validity Index (CVI) reached 0.90, confirming the items' relevance and clarity. The study concludes that the module is deemed suitable for implementation, having met key instructional requirements validated by an expert consensus.

Keywords: dyslexia, strategies, teacher training, ADDIE model, inclusive education.

UNIVERSIDAD TÉCNICA DE COTOPAXI
PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANJEROS
PROGRAMA DE PREGRADO

TEMA: MÓDULO DIDÁCTICO INTERACTIVO PARA PROFESORES DE INGLÉS DE PRIMARIA SOBRE LA DISLEXIA EN EL APRENDIZAJE DE LA LENGUA INGLESA

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RESUMEN

Uno de los problemas de aprendizaje más comunes que afectan a los alumnos a la hora de aprender un idioma es la dislexia. Afecta a la lectura, la escritura y la comprensión de palabras, lo que puede limitar el aprendizaje de los alumnos. En base a esto, es vital que los profesores puedan estar preparados para enseñar inglés a alumnos disléxicos, aplicando estrategias y actividades adaptadas para garantizar una educación inclusiva. Este estudio tuvo como objetivo diseñar un módulo interactivo de instrucción para profesores de inglés de primaria denominado «Dealing with dyslexia». Para ello, el modelo ADDIE guió el desarrollo de la propuesta a través de cinco fases: Análisis, Diseño, Desarrollo, Implementación y Evaluación. A continuación, se aplicó una metodología cuantitativa para validar la propuesta. Se utilizó una lista de comprobación para medir el grado de desarrollo del módulo y si cumplía los aspectos necesarios como: accesibilidad, interactividad, claridad de las instrucciones, contenido educativo, diseño instructivo y presentación, para ser utilizado en la formación del profesorado. Cinco expertos en el campo de la educación y las dificultades de aprendizaje contribuyeron a la validación de la propuesta. Los resultados mostraron que la puntuación media fue de 26,2 sobre 30 (87%), lo que refleja una fuerte calidad percibida; la desviación estándar general fue de 0,34, mostrando un acuerdo consistente; y el Índice de Validez del Contenido (IVC) alcanzó 0,90, confirmando la relevancia y claridad de los ítems. El estudio concluye que el módulo se considera adecuado para su aplicación, ya que cumple los requisitos clave de instrucción validados por un grupo de expertos.

Keywords: dislexia, estrategias, formación del profesorado, modelo ADDIE, educación inclusiva.

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1. GENERAL INFORMATION

Theme: “An interactive instructional module for English teachers on dyslexia in English language learning”

Starting Date: April 2025

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Formative Project of the career: Strategies of educational intervention associated with dyslexia in children of General Basic Education in the sub-levels of basic preparatory and elementary of the educational institutions of the canton of Pujilí.

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Knowledge area: Education

Research line: Education and communication for human and social development.

Research line of the campus Pujilí: Pedagogical, didactic, curricular and inclusive practices in the areas of knowledge.

2. PROBLEM STATEMENT

One of the most common difficulties that kids present when they are learning a language is dyslexia, it impacts writing, reading, and, in specific situations, word understanding. As Rivadeneira & Moya (2021) mention, it influences learners' confidence, trust, and self-esteem in addition to language skills like speaking, writing, and reading as well as macro skills like thinking, interpretation, analysis, and memorizing. Individuals with dyslexia may find it challenging to learn at the same time as their peers, due to the specific difficulties they face in processing language. This can create an infinite loop in which psychological and academic challenges feed off one another, therefore it's critical to provide supportive settings and use flexible teaching strategies to enhance dyslexic students' academic and emotional success.

It is essential for teachers to understand how to support students with dyslexia successfully. When students with dyslexia learn English, teaching methods need to be adjusted to support their needs. This presents a considerable challenge as both students and teachers work to achieve the same objectives. Ballesteros & Rascón (2019) establish that the teaching-learning methodologies that instructors employ in the classroom is one of the challenges in achieving a strong academic record.

Teacher preparation is a vital part of this process. A competent teacher can identify signs of dyslexia from early stages, apply specific techniques to facilitate learning and, if necessary, refer students to specialists. In addition, in order for students to continue participating actively and to be inspired to keep getting better, teachers have to create the environments in which they feel comfortable making mistakes and confident enough to continue doing so (Rivadeneira & Moya, 2021).

Around the world, many children face learning challenges, including dyslexia, which is common in schools. When students with dyslexia learn English, teaching methods need to be adjusted to support their needs. This presents a considerable challenge as both students and teachers work to achieve the same objectives. Ballesteros & Rascón (2019) establish that the teaching-learning methodologies that instructors employ in the classroom is one of the challenges in achieving a strong academic record.

In school settings, it is very common to encounter such problems and situations very

often, and traditional teaching methods are gradually losing effectiveness as educational needs evolve. To support diverse learners effectively, it's essential to seek innovative, adaptive teaching approaches that address individual student needs while promoting the well-being of the entire school community. These new methods should not only improve learning outcomes but also create an inclusive, supportive environment where all students feel valued and encouraged in their educational journey.

When dealing with problems with students suffering from dyslexia it is very visible that it affects not only the foreign language but also affects their mother tongue, affecting not only in the area of English, but in a general aspect, where the student presents serious consequences from this problem. Based on this problem, the investigation aims to develop an interactive module that will help teachers to know about dyslexia and how to deal with and teach students that have problems with reading and comprehension skills.

3. RESEARCH OBJECTIVES

3.1. General Objective

To design an interactive instructional module for teaching English to children with dyslexia.

3.2 Specific objectives

- To determine the methodological framework for the development of the interactive module.
- To identify strategies and activities for teaching English to children with dyslexia.
- To validate the interactive instructional module for teaching English to children with dyslexia.

4. ACTIVITIES AND TASK SYSTEM IN RELATION TO THE OBJECTIVES PROPOSED

Table 1

Activities developed based on the objective

SPECIFIC OBJECTIVES	ACTIVITIES	ACTIVITIES RESULTS	EVIDENCES
To determine the methodological framework for the development of the interactive module	Search in different sources significant information about dyslexia	Theoretical framework	Theoretical framework section
To identify strategies and activities for teaching English to children with dyslexia.	Research adequate strategies and activities to apply to Dyslexic learners	The proposal of an instructional module	The module called “Dealing with Dyslexia”
To validate the interactive instructional module for teaching English to children with dyslexia	Adapt a checklist to validate the module	The experts check-list validation	The check-lists

5. RESEARCH QUESTION

- What are expert evaluations of the accessibility, interactivity, clarity of instructions, educational content, instructional design, and presentation of the interactive instructional module for English teachers on dyslexia?

6. JUSTIFICATION

Inclusive education represents a serious challenge in the context of English language teaching, particularly when it involves students with learning difficulties such as dyslexia. This disorder has an important effect when learning a foreign language like English. It affects students' performance during language learning, and its optimal management is vital to ensure that students with this condition are able to develop their academic and personal learning potential. Dyslexia often

creates obstacles in reading, writing, and comprehension, which can carry out poor academic progress and self-confidence if not properly addressed. However, that can be solved if teachers are provided with the necessary tools to be able to adapt their way of teaching to students that face this difficulty. Providing the teacher with specific knowledge and resources promotes a good learning environment where students with this need can learn English adequately.

The purpose of this project is to design an interactive instructional module for teaching English to children with dyslexia. It was developed taking into account a previous study highlighting the English teachers' understanding of dyslexia. The results were that only 39.5% of the knowledge questions were answered correctly, 38.3% of the teachers rated the training as favorable, and only 21.7% claimed to use effective strategies, revealing deficits in preparation and practice. Based on these results, the proposal was developed to support teachers to better understand the features of dyslexia, by providing the information they need in order to identify dyslexia's signs in language learning. Additionally, it offers useful pedagogical strategies to overcome challenges in current teacher training and foster a more inclusive and equitable education.

The importance of this project relies on its capacity to have a positive impact on the learning process of students with dyslexia, increasing the learning process for educational equity. That is why it is important to develop a module that has everything that a teacher needs to know since the activities that a teacher can carry out in order to identify the students that suffer this difficulty are the best strategies used to deal with dyslexia in learners. To teach this type of students.

The design of this didactic module offers a valuable tool for English teachers who are dealing with students with dyslexia. It provides a practical, learner-centered approach to addressing the specific needs of children with dyslexia. In addition, it serves as a key tool for school teachers by providing a replicable model for improving teaching practices and designing more effective instructional programs. The experiences and strategies derived from the use of this module are of immense value in contributing to inclusive English language teaching and fostering equal opportunities in education.

Therefore, this project not only seeks to reinforce teacher capacity but also to promote inclusive and effective pedagogical practice that supports meaningful learning and academic development for all students, as well as to improve the level of English language instruction for students with dyslexia.

7. SCIENTIFIC AND TECHNICAL FOUNDATION

7.1 Background

Cuadros (2024), conducted research with the objective of designing and validating an intervention program aimed at improving the reading potential in English of cycle IV students with dyslexia in a bilingual educational institution. The sample included 8 teachers, selected by means of ratio and variance sampling, and 22 3rd and 4th grade students enrolled in the Learning Support program. Using the Modeling method, three main instruments were used: an A-Z reading test to diagnose reading potential, a survey to measure the level of knowledge about dyslexia, reading delay and bilingualism, and an interview to assess knowledge about reading promotion strategies, the validation of the instruments was carried out by specialists in the area.

The results of the program application revealed that the students did not reach the reading fluency and comprehension goals (less than 100 words per minute and less than 80% comprehension), while the teachers presented a lack of knowledge regarding specific methodologies for dyslexia and strategies to improve reading fluency and comprehension.

Sánchez (2017) developed a web-based support platform for learning disorders therapy, composed of three modules aimed at facilitating the treatment of dyslexia. The first module is an informational site oriented to parents and teachers, which provides educational content about dyslexia and allows tutors to access the second module. This second module, structured in a Learning Management System (LMS), contains multimedia exercises specifically designed to reinforce reading skills in people with dyslexia. The third module is a patient database management system,

which allows the specialist to access patients' personal data and monitor their progress in therapy through the LMS.

The purpose of this platform was to create a complementary resource to conventional therapies, which specialists could use as an educational tool. In the development of the project, various methodologies were used to address the technical and educational aspects of the design, including the technology development methodology, the incremental software development model for the creation of the web platform and the ADDIE model (Analysis, Design, Development, Implementation and Evaluation) for the design of the multimedia learning objects.

Ríos et al. (2017) developed a practical handbook aimed at providing preschool teachers with useful tools to identify signs of possible difficulties in phonological and phonemic awareness in children, which may be early indicators of dyslexia. In the initial phase, semi-structured interviews were conducted with a sample of 47 people, composed of teachers, preschool education graduates and educational psychologists. The results showed a high level of acceptance of the relevance of the project, with 43 participants supporting its applicability and only 4 expressing doubts. In addition, preschools and education programs in Medellín were investigated, finding that most programs do not include training on specific learning disorders, such as dyslexia.

To support the project, databases such as EBSCO, PubMed and SciELO were reviewed, without finding references to specific dyslexia screening primers for preschoolers in Colombia, underlining the relevance of this tool. The findings suggest that, due to the lack of resources for early identification of dyslexia in preschoolers, diagnoses tend to occur in the middle of primary education, which generates greater difficulties, such as school lag and grade repetition.

7.2 Theoretical framework

7.2.1 Dyslexia and English Language Learning

During the learning of English as a foreign language, students face certain types of difficulties that affect the correct learning of this language. Particularly in the case of dyslexia, a linguistic disorder that principally impacts reading and writing skills (Rocha et al., 2024). Students who are affected by this disorder can have difficulties in verbal retention, phonological comprehension, and the speed of verbal processing (Andresen & Monsrud, 2022). For dyslexic learners, learning a foreign language adds layers of complexity because of all of these factors, and students are likely to encounter considerable learning obstacles if they don't receive appropriate, clear instruction (Flaten & Tsagari, 2022). This emphasizes how crucial it is to encourage teachers to develop teaching strategies in order to give an effective solution to this disorder.

7.2.2 Characteristics of dyslexia in students

Recognizing dyslexia in students is essential for giving effective assistance. Thus, identifying the signs early allows proper treatment, which is beneficial for students who deal with this disorder. Kelly & Phillips (2022) identify as primary signs the affections in language, motor coordination, mental arithmetic, concentration, and personal organization. However, they mention that these are not definitive markers of dyslexia, an appropriate way to find if a student has this affection is by being assessed with appropriate interventions as Andresen & Monsrud (2022) mention, the student will be diagnosed with dyslexia based on test results, classroom observations, and interviews with parents, teachers, and the student herself or himself.

Andresen & Monsrud (2022) list two tests that can be applied to diagnose dyslexia in learners. The first is the test battery logos which consists of three sets of activities and includes a wide range of sub-skills: reading comprehension, fluency, listening comprehension, word knowledge, decoding skills, and several sub-processes behind decoding and spelling, the results of the test are measured by a range of 15th and 30th percentile where students who obtain less of 15th percentile are considered

dyslexic. The second is the STAS test, it consists of both assessors and individual assessments and is standardized for learners from second grade to secondary school, the results of this test allow students to recognize decoding issues.

7.2.3 Teaching English to Students with dyslexia

Certainly, teaching English to students with dyslexia is not an easy job and requires a great knowledge about this disorder, but teachers can identify early signs and provide these students with teaching methods that adapt to their specific needs, even before the verification of a professional diagnosis (Plummer, 2022). As Flaten & Tsagari (2022) mention, the difficulties can be resolved if suitable teaching strategies are provided. The challenge of teaching dyslexic students relies on the teachers' capacity to provide them with the appropriate methodologies and strategies that serve as a guide for these students to improve their phonological comprehension and verbal processing.

7.2.4 Strategies to teach English as a foreign language to students with dyslexia

Teaching dyslexic students English as a foreign language (EFL) has special difficulties requiring specific teaching methods to ensure successful acquisition. Because dyslexia involve problems with phonological processing, working memory, and decoding, it may limit language acquisition.

7.2.4.1 Multisensory Learning

Students with dyslexia benefit significantly from multisensory instruction. With this method, the same material is presented in multiple formats (text, visuals, audio, and more) considering that children learn best when all of their senses are activated (Lerga et al., 2021). Learning by this way gives dyslexic kids many chances to learn and understand information, especially when it includes visual and auditory aids. Additionally, Khasawneh (2024) mentions that these techniques try to improve learning and memory by incorporating a variety of senses. Multisensory learning can help reinforce ideas and make them easier to understand to learners with varying learning needs and styles by using many senses together.

7.2.4.2 Task analysis

When teaching English to dyslexic students, task analysis involves dividing difficult language tasks into smaller, as Dewi (2022) mentions, by dividing a task into small, progressive stages, the task analysis method can assist children with dyslexia to understand and follow instructions. This author establishes 3 essential steps to follow: before reading activity, during reading activity, and after reading activity. In the before reading students make guesses to preview what is going to be the text about. Later, during the reading activity, students are asked to identify the unfamiliar words, this aims to deal with students' difficulties in decoding this type of words. Finally, in the after reading activity, students review what they have learned through discussions or rereading the text to improve comprehension.

7.2.4.3 Sandpaper letters

Casupanan & Casupanan (2018) establish that this supports better performance and well-developed letter recognition skills in students. They are used to help young children learn the shapes and sounds of letters and are especially beneficial for kinesthetic learners.

7.2.4.4 Finger tracing

Schneider & Kulmhofer (2016) mention in this activity, students use their hands and fingers to trace shapes, letters, numbers or patterns, usually on a rough surface or in the air, where they are gradually released from support to encourage greater independence in their learning progress.

7.2.4.5 Letter building

Birsh & Carreker (2018) emphasize that manipulating materials to build letters supports the development of orthographic memory and motor planning. This allows children to understand the components of each letter in a three-dimensional manner.

7.2.4.6 Crosswords

Crosswords are word games that require learners to fill in a grammar row based on clues, using spelling, vocabulary and word association skills. According to Widyahening & Sufa (2023) Crossword media is an effective alternative tool for

teaching English vocabulary to kindergarten children, as it helps improve their vocabulary mastery at an early age. Crosswords help students with dyslexia by improving word recognition and vocabulary in a structured way. It helps to clarify the spelling and meaning of new phrases.

7.2.4.7 Color classification

The classification by color as a strategy is crucial for teaching English. It involves the classification of words, letters, grammatical structures or concepts providing visual organization and reinforcement that helps with the association and memorization of information. Başar et al. (2022) states that the employment of colors in conjunction with reading exercises has been demonstrated to improve students' visual perception disabilities caused by dyslexia in addition to transfer information from short-term memory to long-term memory, which in consequence affects reading comprehension levels.

7.2.4.8 Repetition

According to Sari et al. (2017), Repetition helps to reinforce areas of weakness by providing learners with frequent practice in listening, hearing, recognizing and producing sounds and words. Repetition involves presenting the same information or skill multiple times in varied formats such as: oral, written and visual ways to reinforce learning.

7.2.4.9 Tracing

Westwood (2008) says that tracing letters and words helps to develop fine motor control and muscle memory, which leads to more efficient handwriting and better spelling. Tracing involves students following the borders of letters, words or sentences with their fingers or writing tools. It integrates visual, kinesthetic and tactile information to help students make connections between sounds, letters and words.

7.2.4.10 Syllable segmentation

Westwood (2008) affirms that breaking words into syllables helps learners to deal with long or complex words in manageable pieces, improving both reading fluency

and spelling accuracy. This technique reinforces phonological awareness, which is a fundamental skill for reading and spelling.

7.2.5 Technology Integration in Supporting Dyslexia

Technology integration in the classroom has been proved to be very effective for dyslexic students. Thus, the effective technology integration in education is not just about using digital tools but also about rethinking how they are used to support learning (Bice & Tang, 2022). In order to help dyslexic learners, technology provides tools and resources that may deal with the specific challenges they encounter with reading, writing, and comprehension. Lerga et al. (2021) establish that there are now a lot of possibilities to develop useful instructional materials for students who have learning disorders thanks to the quick development of digital technology and artificial intelligence. For instance, some desktop software and applications have proved to help students with dyslexia by providing them with activities designed specifically for them. The Phonological Awareness Educational Software uses graphemes to support speech therapy treatments in dyslexic students, on the other hand, mobile applications like iLearnRW includes activities designed by experts can encourage dyslexic students to overcome their difficulties in language acquisition.

7.2.6 Instructional module design

The development of instructional modules refers to the process of creating a systematic and ordered framework for teaching or delivering knowledge in a specific subject or topic. Instructional module design is a systematic approach to creating educational materials and resources that facilitate effective teaching and learning. Surtama et al. (2022) mention that it is necessary to design modules with the structured or systematic steps applicable in large classes and promote and enable students to reflect on the subject content and formulate their thoughts before sharing them privately. They suggest that online learning modules should be structured in a simple, complete, interactive, systematic manner by presenting steps/scaffolding that can lead students to learn. Effective modules are learner-centered, engaging, and aligned with clear objectives. As education evolves, particularly with the

growth of digital and hybrid learning, instructional module design will play an increasingly vital role in enhancing teaching and learning outcomes.

7.2.7 Methodologies for module development

Software resources are designed, constructed, and tested using organized methods known as module development methodologies. These frameworks have the objective to guarantee that every module is reliable and functional. For it, the following methodologies are employed:

7.2.7.1 Incremental methodology for software development

The incremental process for software development is a methodology used where software is developed and presented in manageable steps. Sanchez (2017) says that the phases that the incremental methodology identifies are based on the waterfall software development model; however, it recommends the production of prototypes or partial testing before each new step, with the objective of recreating every phase. He establishes the phases which include: communication, planning, modeling (evaluation, design), building (code, test), and delivery (delivery, feedback). After these phases, a progress after testing is carried out, with the objective of restarting the process with the new information collected from the feedback.

7.2.7.2 ADDIE model

The ADDIE model is used for the design of instructional modules as Spatioti et al. (2022) mention the ADDIE model is commonly used by educational designers and programmers to create educational resources. The acronym represents the five primary phases of instructional systems development (ISD): analysis, design, development, implementation, and evaluation (Chyung, 2008). According to Almelhi (2021) the ADDIE model involves the following steps:

- Analysis: Involves acquiring information through open-source internet materials and search engines.
- Design: Involves drafting, editing, and revising the mechanics and content.
- Development: Involves building web blogs using online tools.
- Implementation: Involves publishing in a cooperative and proper manner.

- Evaluation: Involves assessing the own works in order to achieve the objectives of the project.

This model guides the process of identifying educational needs, planning teaching strategies, developing materials, implementing educational solutions and evaluating their effectiveness. Although it is not a strict methodology, it is a structured, flexible and cyclical approach that allows each phase to be adapted to different teaching contexts, ensuring alignment between objectives, content and expected results.

The ADDIE model, although widely used, is often criticized for its rigid structure, slow process and lack of innovation adaptability, which can obstruct innovation and adaptability in learning environments that change frequently (Drljača et al., 2024). In addition, Spatioti et al. (2022) mention that instructional design specialists often focus significant resources on training processes that have limited impact on the business. Even within the analysis and design phases of the ADDIE model, there is often insufficient focus on activities that lead to meaningful behavior change and measurable results.

8. METHODOLOGY

8.1 Research approach and level

For the design of the proposal the ADDIE model was selected. The ADDIE model follows a sequence of five phases: it begins with Analysis, where learning needs are identified; continues with Design, in which objectives, methods, and resources are planned; then moves to Development, where instructional materials are created; followed by Implementation, where the course or training is delivered; and finally, Evaluation, where the effectiveness of the design is assessed and improvements are identified. According to (Adriani et al., 2020) this model is applicable to different aspects of educational product development, including instructional strategies, teaching methods, learning media, and educational materials. This structured, flexible, and cyclical approach guides the process of identifying educational needs, planning teaching strategies, creating materials, implementing solutions, and evaluating their effectiveness. The research also adopted a quantitative

methodology. It is quantitative because it contributed to analyze the expert validations to measure how well developed is the proposal and if educational needs of dyslexic students are met in the interactive module to support teachers in teaching dyslexic students in an EFL context. According to Ghanad (2023) quantitative research involves working with numbers, quantifying information, and interpreting results from different viewpoints.

8.2 Research context and participants

The current study was conducted in Latacunga and Pujilí cantons from Cotopaxi Province, Ecuador. The research involved 2 EFL teachers who work at the university and 3 specialized teachers in the area of learning disabilities. The experts have the following characteristics:

Expert 1: The expert holds a Master's degree in Teaching English as a Second Language, has 20 years of experience teaching at a university. He supports revision in the use of language and the content about dyslexia.

Expert 2: The expert has a Master's degree in Education with a major in English, 23 years of experience in education. She is an English University teacher who shows her competence to the English language and content about the activities related to dyslexia.

Expert 3: The expert is a Clinical Psychologist and Educational Psychologist. He has 15 years of professional experience and works as a university teacher, which qualifies him adequately as an expert in Learning disabilities to act as a reference in the validation of the interactive module.

Expert 4: The expert is a educational psychologist with 5 years of professional experience and works as a teacher in a specialized educational unit in Cotopaxi. He qualified as an expert of the theoretical concepts of dyslexia, the strategies and activities that are part of the module to do the validation process.

Expert 5: The expert is an Educational Psychologist, with 5 years of professional experience in the field of education and currently works in a Specialized

Educational Unit. She supports her relevance as an evaluator in the validation process of the theoretical concepts of dyslexia, the strategies and activities.

8.3 Data collection instrument

The instrument used to validate the interactive module was a checklist. It was adapted from Adame (2015) called LORI-AD (Learning Object Review Instrument-Adapted/Applied), classifying the relevant aspects in a validation. The LORI-AD instrument evaluates digital educational resources based on the following dimensions: quality of content, appropriateness to learning objectives, feedback and adaptability, motivation, design and presentation, usability and interaction, accessibility, reusability and compliance with standards. The instrument was adapted according to the students' needs and reviewed by the tutor of the project. It has 6 adapted aspects: accessibility, interactivity, clarity of instructions, educational content, instructional design and presentation/visual appearance. The checklist is based on a rating scale from 1 to 5 (1=Deficient, 2=Fair, 3=Acceptable, 4=Good, 5=Excellent) by five domain experts. The results are shown in the following table: aspects, observations, total results, description of the results and general description of the expert evaluator (see Annex 1).

8.4 Data collection and analysis procedure

First, a literature review of concepts and contents of the interactive module were conducted. Canva was used to create the proposal as closely as possible to a scheme of a website. All the development follows the ADDIE model where: First, in the Analysis step, it was determined that there are weaknesses and many barriers that need to be reinforced. Second, in the Design step Canva was used to adapt the proposal as a website. Third, in the Development step the activities and strategies from the theoretical framework were used. In order to obtain the results, the Evaluation part was done, where the corresponding permissions were obtained to carry out the validation. Then, the proposal was presented and explained step by step to 5 experts, with experience in areas such as EFL instruction, educational psychologists, and clinical psychologists. The presentation was carried out individually, taking into account their time and the appointment established for the module validation. Finally, after receiving suggestions and comments from the

experts, improvements were made to the proposal and checking it again for the experts to make it ready for the implementation stage. For the data analysis, it was used descriptive statistics to present the results of the validation in a table that showed de mean score, standard deviation, and item-level content validity index.

9. PROPOSAL

9.1 Proposal title

Dealing with Dyslexia

9.2 Objectives

9.2.1 General objective

To train primary English teachers about Dyslexia to provide alternatives to teach English to dyslexic students

9.2.2 Specific objectives

- To introduce knowledge about Dyslexia.
- To provide teachers with effective strategies and activities for dyslexic students.

9.3 Justification

Dyslexia is a disability that affects learning in reading, spelling and writing skills. It is characterized by poor phonological awareness, weak working memory and slow processing speed. This disability is very common in children who are affected and is notable in their learning.

For that reason, this instructional module serves as a useful and relevant resource for English teachers who work with students with dyslexia, to address common classroom challenges and promote inclusive education. It introduces an interactive approach that helps teachers understand the basics of dyslexia, recognize its signs, and apply appropriate teaching strategies to support learners struggling with reading and writing.

Finally, this initiative contributes to reducing educational barriers like the lack of knowledge and tools, promoting training for teachers and diagnosing the students with dyslexia and their learning difficulties in English by tests.

9.4 Proposal components

The instructional module titled "Dealing with Dyslexia" has been developed as a comprehensive and innovative resource aimed at supporting English language teachers in understanding and addressing the educational needs of students with dyslexia. In addition, the module integrates technology through interactive slides and audio features, enhancing user engagement and accessibility. Its digital format ensures ease of navigation, allowing educators to explore its content efficiently while simultaneously expanding their understanding of dyslexia and improving their teaching skills.

This module provides essential knowledge to help educators identify the indicators of dyslexia and respond to its associated challenges, particularly in the areas of reading and writing. This module provides interactive icons which carry to new units with different types of information, structured into four main components: conceptual foundations, real examples, instructional strategies, and practical activities give this module a complete guide of training.

The module addresses gaps in teacher education by promoting inclusive pedagogical practices. It is designed to support self-paced and autonomous learning and includes tools for assessing progress, together with examples of flexible and adaptable materials suitable for a variety of educational contexts.

The content of this module is specified in the following table:

Table 2

Contents of the module

Unit	Content
Unit 1: Dyslexia	- Concepts of dyslexia
Theory	- Characteristics of dyslexia
	- Signs of dyslexia

Unit 2: Real context of Dyslexia	<ul style="list-style-type: none"> - Examples of dyslexic writings - Examples of dyslexic reading - Explanation of tests used by professionals to diagnose dyslexia
Unit 3: Teaching strategies for dyslexic learners	<ul style="list-style-type: none"> - Multisensory learning - Sandpaper letters - Finger tracing - Letter building - Task Analysis - Crosswords - Color classification - Repetition - Tracing - Syllable segmentation
Unit 4: Teaching activities	<ul style="list-style-type: none"> - Letter relay - Build the letter - Word decoding steps - Phonics task breakdown - Color coded crosswords - Picture clue crosswords - Syllable highlighting - Echo reading - Repetitive writing - Guided word tracing - Clap the syllables
Glossary	<ul style="list-style-type: none"> - Vocabulary of the 4 units

Here is the link to the proposal: https://www.canva.com/design/DAGp9eB-qxk/j7A0hZl1TUCR3b-iG2oWZQ/edit?utm_content=DAGp9eB-qxk&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

9.5 Proposal development

The development of the module follows the ADDIE model which is divided into steps such as: Analysis, Design, Development, Implementation and Evaluation. Based on these steps the module was created as it is showed in the following table:

Table 3

Steps followed for the development of the proposal

Steps	How was developed
Analysis	The proposal emerged from a previous study which showed the lack of knowledge on the topic 'Dyslexia' on school teachers.
Design	The design focuses on instructional, educational and interactive aspects for teachers. Therefore, Canva was used to create a layout as close as possible to a website
Development	The development of the module focuses on: A theoretical framework, real-life examples, strategies and activities for dyslexic learners. The proposal followed a sequence for adequate training.
Implementation	The implementation of this module is going to be done after expert`s evaluation.
Evaluation	The evaluation was made by experts who gave opinions and advice for the improvement of the module and its contents.

10. VALIDATION RESULTS

The validation of this module was made by a checklist. The results are shown in the following table:

Table 4

Experts' validation results

Criteria	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Accessibility	5	4	5	5	5
Interactivity	5	4	5	4	4
Clarity of instructions	5	4	4	4	5
Educational content	5	4	4	3	3
Instructional design	5	4	5	4	3
Presentation/Visual appearance	5	4	5	5	4
Total	30	24	28	25	24
Average	26,2				
Percentage %	87,33%				

This table answers the research question: What are expert evaluations of the accessibility, interactivity, clarity of instructions, educational content, instructional design, and presentation of the interactive instructional module for English teachers on dyslexia? The results of the expert validation process showed a highly positive evaluation of the module, with a total mean score of 26.2 out of 30 and a general approval rate of 87.33%. The proposal is regarded as appropriate and relevant for its intended educational purpose.

Accessibility and Presentation were the most highly rated aspects, reflecting a clear, user-friendly, and visually organized design. Interactivity and Clarity of instructions also received favorable and consistent evaluations, highlighting the module's ability to promote engagement and provide clear, appropriate guidance for effective autonomous use in educational contexts. A module should be based on a practical and flexible approach, resources, autonomy for practice and an approach aligned with the needs of teachers are identified as key elements (Kalma et al. 2022). These features are crucial for ensuring that users can navigate and understand the content with ease. However, slightly lower scores were assigned to Educational Content and

Instructional Design, indicating areas for potential enhancement. Tarigan et al. (2021) emphasize that clear instructional design, characterized by specific learning objectives and organized content, enhances effective knowledge transfer, while a lack of the same may cause learner confusion and reduce instructional effectiveness. In an educational context a simple mistake could cause a misunderstanding and in the educational field it is worse, it could cause bad teachings and even a wrong education.

With the observations of all the experts was develop improvements in the module such as: improvement in the theoretical part, omission of a unit that had as objective how to recognize dyslexia by a test, to specify for what age are the activities and to add a glossary to help with the terminology of some words. These aspects benefit from improvements such as refining the instructional sequence, reinforcing alignment with learning objectives, or strengthening the clarity and depth of content.

Following the tabulation of results, the results were presented in three important values: the mean, the SD and the I-CVI. The mean of all 6 criteria, the SD of each one and the I-CVI as well. The following results are shown in the table:

Table 5

Results of the Mean, Standard Deviation, and Item-level Content Validity Index

Criteria	Mean	SD	I-CVI
Accessibility	4.8	0.45	1.00
Interactivity	4.4	0.55	1.00
Clarity of instructions	4.4	0.55	1.00
Educational content	3.8	0.84	0.60
Instructional design	4.2	0.84	0.80
Presentation/visual appearance	4.6	0.55	1.00
	Total: 26,2	Total: 0.34	Total: 0.9

Note. The mean for each criterion was calculated by adding the scores given by the five experts and dividing the total by the number of experts, using the arithmetic mean formula. For example, in the case of "Accessibility," the total score was 24, which divided by 5 resulted in a mean of 4.8. The standard deviation was calculated by subtracting each individual score from the mean, squaring the differences,

averaging them, and then taking the square root. This value measures the variability in the experts' responses for each criterion. The I-CVI was determined by identifying how many experts rated a given criterion as relevant. Each expert represents 20% of the total (with 5 experts). If all five experts agree on the item's relevance, the I-CVI is 1.0, indicating full agreement.

The mean scores reflect a generally positive evaluation of the module. Accessibility received the highest score (4.8), followed by Presentation (4.6), indicating that the module is user-friendly and visually appealing. Interactivity and Clarity of instructions also scored well (4.4), suggesting the material encourages active participation and is easy to understand. In contrast, Instructional Content had the lowest score (3.8), highlighting a need to improve its conceptual depth or pedagogical alignment. Instructional Design achieved a score of 4.2, considered acceptable but with room for improvement. The standard deviation (SD) values demonstrate strong consistency among expert ratings. Criteria like Accessibility, Interactivity, Clarity, and Presentation showed low dispersion (ranging from 0.45 to 0.55), reflecting high agreement. However, Instructional Content and Instructional Design showed greater variability (SD = 0.84), indicating differences in expert opinion, though still within acceptable limits. The Item-Level Content Validity Index (I-CVI) indicated full agreement (1.00) among experts for most criteria. However, Instructional Content received a lower I-CVI (0.60), and Instructional Design scored 0.80, suggesting that these areas may require revision to reach full consensus on their relevance.

With all information tabulated, the proposal has these values shown into a table:

Table 6

Analysis of the general results

Term	Stands for	Applied meaning in this Study	Ideal value	Observed results
Mean Score	Average score	Reflects the overall quality and strength of the educational instrument, based on expert ratings.	High (30)	26,2 pt of 30 pt
SD	Standard	Indicates the level of consistency	Low	General

	Deviation	or agreement among the expert evaluators for each criterion.	(1.0)	SD: 0.34
CVI	Content Validity Index	Proportion of agreement among experts regarding item relevance.	High (1.0)	General I-CVI: 0.9

The general results obtained reflect a positive evaluation of the proposal by the experts. The Mean Score was 26.2 points about 30 points, indicating a high perception of quality in the items evaluated. The general standard deviation (SD) was 0.34, which shows a good level of consistency and agreement among the judges, since it is below the acceptable threshold of 1.0. The Content Validity Index (CVI) was 0.90 about 1, showing an important agreement among the experts on the relevance of those items. The high validity of the item guarantees that it is clear for the respondent, free of redundancy, uses suitable terminology, effectively on its purpose, and is appropriate to assess before carrying out a pilot application (Rokeman & Kob 2024). In conclusion, although the evaluated proposal demonstrates a strong structure in terms of accessibility, clarity, and interactivity, it is recommended to strengthen the pedagogical component, particularly by deepening the relevance and substance of the educational content.

11. RESEARCH IMPACTS

The research conducted has an impact on the educational field and the inclusive area. The proposal can provide teacher preparation on key concepts, examples, strategies and practical activities that allow for a deeper understanding and more appropriate pedagogical intervention. This type of training fosters teachers' knowledge in teaching dyslexic students so they can provide inclusive education by promoting an approach that is sensitive to individual differences and focused on equity, facilitating the adaptation of teaching to the needs of learners with learning barriers. It also increases teacher awareness and empathy, which contributes to a more supportive and supportive classroom climate for all. As a result, students with disabilities can benefit from more appropriate support, which improves their performance, self-esteem and motivation to learn.

12. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- According to the theoretical framework, the most practical strategies to support dyslexic students in learning English include: multisensory learning to engage multiple senses, task analysis to simplify reading tasks, and sandpaper letters, finger tracing, and letter building to improve letter recognition and motor skills, crosswords and color classification help reinforce vocabulary and grammar, while repetition, tracing, and syllable segmentation support memory, spelling, and reading fluency. These strategies together create an inclusive and supportive environment for dyslexic learners.
- The results indicated a positive expert evaluation of the proposal. The Mean Score of 26.2 out of 30 reflects a strong perception of quality across all items. The low standard deviation (0.34) demonstrates consistent agreement among experts, suggesting reliable and stable evaluations. The high Content Validity Index (CVI) of 0.90 confirms that the items are relevant, clear, and appropriate for their intended terms of content validity, clarity, and expert consensus achieving the instructional purpose.

Recommendations

- It is recommended that teachers receive training in concepts about skills such as professional ethics, in this study on dyslexia, to ensure that teachers can provide a better teaching process in the classroom environment and promote an inclusive and integrated education between teachers and students in this way.
- It is important to apply the module in a real context to determine how the interactive module can impact teachers and dyslexic students. It can also help validate its utility and effectiveness through the strategies and activities within the module in the classroom

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