

# Strategies for Elementary Dyslexic Students' English Language Learning: Crowdsourcing and Reviewing Research Literature<sup>1</sup>

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## Abstract

Despite increasingly large amounts of information about dyslexia in Mexico, there is still no adequate protocol to identify signs of it in elementary students, nor language teaching methods/strategies that can be used to advance their language learning in the classroom (Ruiz-López, Moysén, Trejo-Oviedo, 2010). Research has established that dyslexia is a genetic condition, not a disease nor a disability (West, 2009; Wolf, 2014). Thus, this literature review sets out to explore pedagogical strategies obtained from crowdsourcing (i.e., a kind of social media) on the English learning process of dyslexic students and aims to offer some practical suggestions as to how these findings can help dyslexic students' foreign language learning. They can also provide an opportunity for research about pedagogical practices for designing more effective teaching methods, intended to improve the second language learning achievement of dyslexic students in Mexico.

## Resumen

A pesar de que existe bastante información acerca de dislexia en México, no existe aún un protocolo adecuado para identificarla ni tampoco métodos de enseñanza de lenguas definidos que pudieran ser usados con alumnos disléxicos en escuelas primarias (Ruiz-López, Moysén, Trejo-Oviedo, 2010). La presente revisión literaria se basa en estudios que señalan que la dislexia es una condición genética, no una enfermedad ni una discapacidad (West, 2009; Wolf, 2014). Busca explorar las estrategias pedagógicas obtenidas a través de medios sociales de colaboración abierta en el proceso de aprendizaje de una lengua extranjera en alumnos disléxicos y tiene como objetivo brindar sugerencias prácticas de cómo estos resultados pueden ayudar al aprendizaje de una segunda lengua en alumnos disléxicos. Asimismo, dichos hallazgos ofrecen una oportunidad para investigar acerca de prácticas pedagógicas diseñadas para informar métodos de enseñanza más efectivos que podrían asegurar dicho aprendizaje.

## Introduction

Despite the high extent of research on dyslexia (see, for example, Barden, 2011; Baschera, 2011; Gustavsson, 2013; Shaywitz, 2005; West, 2009; Wolf, 2014, among others), there is still no adequate protocol to identify signs of dyslexia, or teaching and learning strategies to promote English language learning of dyslexic students in elementary schools (Ruiz-López, Moysén, & Trejo-Oviedo 2010). The lack of these strategies in elementary schools in Mexico, along with parents' reluctance to openly acknowledge their children's dyslexia, limit the opportunities to advance the language learning processes of dyslexic students. These limitations firstly reveal the need to raise awareness among language teachers and parents of the existence of dyslexia in educational contexts. Secondly, pedagogical strategies should be identified to promote language achievement in dyslexic students.

In response to the above, this literature review explores some teaching accommodations that can foster the English learning process of elementary dyslexic students. The intention of this review, instilled by the authors' reflective practice as educators, attempts to help teachers accommodate their teaching practices in the language classroom to the dyslexic students' linguistic and learning needs. An accommodation is considered a strategy which changes the academic environment without altering the amount of information that students must learn (Wadlington, Jacob, & Bailey, 1996). This strategy implies that by accommodating and fine-tuning teaching practices, dyslexic students can have the same language achievement as other students who do not have this condition. These accommodations were obtained from crowdsourcing as well as recent studies conducted in different countries.

## Background

In general terms, dyslexia is an inherited condition that makes it difficult to spell, read and write letters and numbers, despite capabilities in other areas of knowledge. The majority of experts state that students with this condition have trouble in finding the right words while speaking or keeping up with a conversation

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(Sunderland, 2015). Dyslexia has been a topic which has not been exempt from controversy concerning whether it is a disability or a condition. On the one hand, Baschera (2011) claims that dyslexia is a 'learning disability' related to problems with reading and writing as well as with the distinction between sounds.

Barden (2011), on the other hand, contends that dyslexia is a condition which can be ameliorated by more and stronger neural connections. From our experience as language teachers, we agree that dyslexia is a condition because we have perceived that language learning improves when certain accommodations are applied in the classroom by teachers. If dyslexia were a disability, we would not be able to appreciate this kind of progress. Stanovich (1986) states that "individuals who have advantageous early educational experiences are able to utilize new educational experiences more efficiently." These advantageous early educational experiences are considered accommodations that can range from the use of computers in class, tape recorders, screen readers and speech recognition devices, to name a few in relation to technology. Throughout our experience, we have witnessed that providing students with what they specifically need helps them succeed in language learning.

Some experts state that dyslexics have potential in learning which is hidden in shyness and negative self-concepts (Green, 2014; Rousseau, 2016). These feelings and self-concepts are initiated when these students perceive themselves as unable to read, creating a negative impact on their anxiety levels and general self-esteem. Consequently, they tend to lose their motivation to learn foreign languages (Csizér, Kormos, & Sarkadis, 2010). Recent studies suggest that there are secondary emotional consequences of dyslexia resulting from the perception of teachers, parents and the individuals themselves as underachievers in their education. This perception of failure and frustration can last throughout their lives unless there is an appropriate intervention to help them overcome the so-called 'deficiencies' (Ingesson, 2007). This situation is exacerbated when teachers do not know how to identify the condition. It is common that language teachers believe that the problems students are experiencing occur in relation to the process of learning the language per se, not to dyslexia. In other occasions, teachers may have some understanding about dyslexia, but they find the process of grading dyslexics very difficult as they are not sure how to address the issue.

Experts in the matter suggest approaches such as the Experiential Communicative Approach which is based on learning by doing and more specifically in this case, by speaking. In addition, multisensory pedagogies can be beneficial for dyslexic students since they use natural strategies for language acquisition in real communication which allows them to use and thus learn the language (Arries, 1999). Structured, sequential and explicit teaching using kinesthetic elements is essential for dyslexics. Dyslexic students tend to be resistant to conventional teaching methods, but if there is appropriate specific intervention, dyslexic students can become great achievers (Barden, 2011). The effectiveness of these teaching approaches resides in the extent to which they help dyslexic learners overcome affective factors (West, 2009). Thus, a better understanding of what dyslexia is should include what adjustments teachers can apply in the classroom to give dyslexic learners a better opportunity to succeed.

### **Consulted References**

The main material chosen for this literature review focuses on experiences of people related to dyslexia whether as parents, teachers, experts and dyslexics through crowdsourcing on the one side. On the other, it is centered on recent research related to strategies to help dyslexics in their process of English learning. In selecting literature to review, the authors attempted to include research that was relatively current, within the range of dates between 1986 and 2015, with most studies chosen from 2008 to 2015.

#### *Crowdsourcing and Strategies*

Crowdsourcing is a type of online participative activity in which an individual, an institution, a non-profit organization, or a company provides its insight to a group of individuals of varying knowledge, heterogeneity and number. In this activity, the crowd participates bringing their work, money, knowledge and/or experience entailing mutual benefit (Estellés-Arolas & González-Ladrón-de-Guevara, 2012).

For our compilation purposes, we contacted several associations via Facebook related to dyslexia in various parts of the world and posted questions related to strategies and accommodations for dyslexics in a traditional classroom. We asked people in those groups, including experts, teachers, parents and dyslexics of all ages to give us their opinions. We were able to successfully collect useful information from different dyslexics' associations:

Dyslexic Advantage—<https://www.facebook.com/DyslexicAdvantage>

Dyslexia Support Australia—<https://www.facebook.com/groups/DyslexiaSupportAustralia>

The British Dyslexia Association—<https://www.facebook.com/bdadyslexia>

The International Dyslexia Association—<https://www.facebook.com/DyslexiaIDA>

The Yale Center for Dyslexia and Creativity Forum—<http://www.dyslexia.yale.edu>

Thomas West, a worldwide known author and leading advocator for dyslexics for over 25 years—<https://www.facebook.com/thomasgwest>

From the above associations, we gathered ideas of teaching activities and accommodations and selected the ones that could be implemented in the language classroom without disrupting any previous plans or methods already followed by elementary schools. As an example, one of these collected strategies asked students to find and color certain objects using colored paper instead of printing the activity on white paper which is what teachers normally do. There are some useful, easily implemented strategies in any traditional classroom:

- a. Handing exams to dyslexic students first and collecting them last. This allows extra time for them to work on their exams.
- b. Giving more specific and personalized instructions, which means that the teacher makes sure the dyslexic student understands them completely by giving one-on-one instructions.
- c. Arranging seating assignments strategically: dyslexic students benefit by sitting closer to the board and to the teacher and avoiding noisy areas in the classroom.
- d. Using highlighters to emphasize important information on students' texts to give dyslexics a visual benefit with the use of contrasting colors and easy identification of main information.
- e. Using different colors preferred by dyslexics to write in their workbooks (green, orange, blue, purple and even red), which are normally printed in black and white.
- f. Writing with different colors on the whiteboard.
- g. Introducing what we called "magic eyes", which are yellow shades to be used at any time during class. It is important to mention that although the strategy related to the use of tinted glasses is not aimed at helping dyslexics, there seems to be a correlation with other conditions. Different comments from crowdsourcing supported that they are used mainly for reading tasks, which results in dyslexics' reading improvement in speed, positive attitude and fewer mistakes.
- h. Using the "Dyslexie" font for practice exercises. This is a special font that can easily be downloaded free from the Internet.
- i. Using modeling clay to form letters and words to learn spelling.
- j. Watching videos of spelling for audiovisual skills information.
- k. Considering using The Hong Kong Behaviour Checklist for Primary Students (Chan, Ho, Chung, Tsang, & Lee, 2012) to identify dyslexia in students without external interventions such as psychologists or parents, avoiding the controversy existing in what is still considered a sensitive area by many.

Taking into consideration these crowdsourced ideas for implementation of strategies and accommodations in any traditional classroom, the main information was divided as follows and supported by other research and document reviews.

1. Dyslexia identification
2. Temporal strategies and accommodations
3. Personal instruction
4. Spatial arrangements
5. Visual strategies and accommodations
6. Kinesthetic strategies and accommodations
7. Technological tools

### 1. Identifying dyslexia

Early identification can mitigate many of the future problems in children. In a video posted by The Yale Center for Dyslexia & Creativity, Dr. Sally Shaywitz, an expert in the matters of dyslexia, reviewed some of the early signs of dyslexia in young children and the importance of early identification, during a Hearing of a United States House Committee on "The Science of Dyslexia" on September 18<sup>th</sup>, 2014 (Shaywitz, n.d.).

The link for this information was obtained through crowdsourcing through the Facebook group of The Yale Center. In this video, she asserts that early identification, as early as 6 years old, is the most important action to be taken. Teachers, parents, school authorities, as well as pediatricians need to be aware of difficulties in rhyming and recognizing sounds and letters, especially in instances of students with evidence of high levels of intelligence who read below their grade level. She adds to this that awareness of these symptoms of dyslexia should be mandatory of teachers' training. Also, it is necessary to have the school's support since waiting for natural progress to overcome difficulties related to dyslexia can do significant damage to dyslexic children. Waiting will only mean failure.

This scenario would be the ideal path for dyslexics. Teachers, parents, the school and pediatricians working together for early identification. But what happens if parents or pediatricians are not aware of their child's problem? What happens if you are a teacher that knows you are alone in this ordeal but have the best interest in the student's progress? Early identification and knowing what to do to help students succeed is the intention of this work. Many tests can identify dyslexia at different points in people's lives. Many of those need the direct participation of dyslexics, parents and psychologists. However, due to the stigma that surrounds dyslexia, teachers sometimes need to rely on a test that can give them important evidence of dyslexia without interfering with the commonly accepted psychological assessments. The Hong Kong Behaviour Checklist for Primary Students (Chan, et al., 2012) is a brief dyslexia screening measure that assesses global dyslexic condition. The validity of this revised checklist is supported by its substantial and significant correlations with external measures of literacy and cognitive skills. This test successfully identifies schoolchildren's dyslexia and teachers can easily follow it in schools. In this test, reading-related attributes are broken down into 12 discrete parts. Children with significantly elevated scores on at least 10 of the 12 areas in writing, reading, dictation, concentration, language, memory, mathematics, sequential ability, spatial orientation and general performance are generally considered dyslexic and can then be referred for further assessment or intervention. While this process is taking place, teachers can start with strategies and accommodations that will only benefit their dyslexic students.

## 2. Strategies and accommodations related to time

According to crowdsourcing suggestions in reference to Dyslexic Advantage (Dyslexia Accommodations, 2018), giving dyslexic students extra time and reading instructions aloud can help them better understand basic subjects or even exam instructions since the content of those exams can become overwhelming for dyslexics. When assessments are given first to dyslexics in the classroom and collected last, the minutes add up for their benefit. Furthermore, dyslexics benefit from sitting in the front row during class and examinations as more specific and personal instructions are given. Bright Solutions for Dyslexia (2014) agrees that extra time greatly improves the test scores of dyslexic students and it does not have an impact on the scores of students who are not dyslexic, which translates into one of the easiest accommodations that can be implemented in any traditional classroom. One of the most frequent recommendations for teachers found in our documents review and crowdsourcing is giving dyslexics more time to complete their tasks for homework and class assignments as well. For example, The British Council (n. d.) recommends allowing dyslexics "thinking time" rather than expecting quick responses. Adding to this idea, the International Dyslexia Association (2015) recommends removing time as an obstacle for tasks, to make frequent pauses for processing and rethinking, giving short attainable tasks, having flexible deadlines for tasks and for homework which should be reduced considering that dyslexics are already working very hard at school. Another Facebook Group recommended a video (*Dyslexia and Comedy*) by Liz Miele (2015) which supports this last point. In this video, she shares her own personal experience with dyslexia. She mentions that dyslexics have, metaphorically, to travel longer to get to the same place as a non-dyslexic. When they finally get to the level of an average non-dyslexic student, they are tired and frustrated. She stresses that we as teachers need to understand their unique brain connections.

## 3. Personal instruction

Miele (2015) asserts that dyslexics do not benefit from "special classes", though this is normally considered an alternative for children with different problems at public schools in the United States. Her assertion is that there are children with many different problems in one classroom, just as in the traditional ones. Dyslexics need individual attention. That is why, in a normal classroom, teachers need to tailor education considering students' needs and give clear instructions to make sure dyslexics understand. Catering education is giving simple, visual and repetitive instructions, with numerous examples.

Motivation is also an essential part of teaching in general. Holešinská (2006) emphasizes that contrary to adults, young learners do not have a personal motivation for language learning. Consequently, it is

necessary for the teacher to nurture motivation in the classroom and encourage students not only to have a motivation based on passing an exam but also for more personal, individual reasons, such as becoming a better student and being able to communicate more easily. Dyslexics feel motivated when the classroom's physical appearance is friendly, when the atmosphere in the classroom is appealing, and when teachers are accessible and show enthusiasm for the language as well as towards them. Teachers, says this author, need to provide activities that involve children and praise and assess children according to their skills. In relation to what Holešinská proposes, Chatháin (2015) recommends that marking should be constructive, concentrating on few high frequency words and that spelling mistakes get comments from the teacher above, below or to the side of the body of the writing. Dyslexics tend to have low self-esteem, so when they feel comfortable in the classroom their confidence grows and they are willing to participate more.

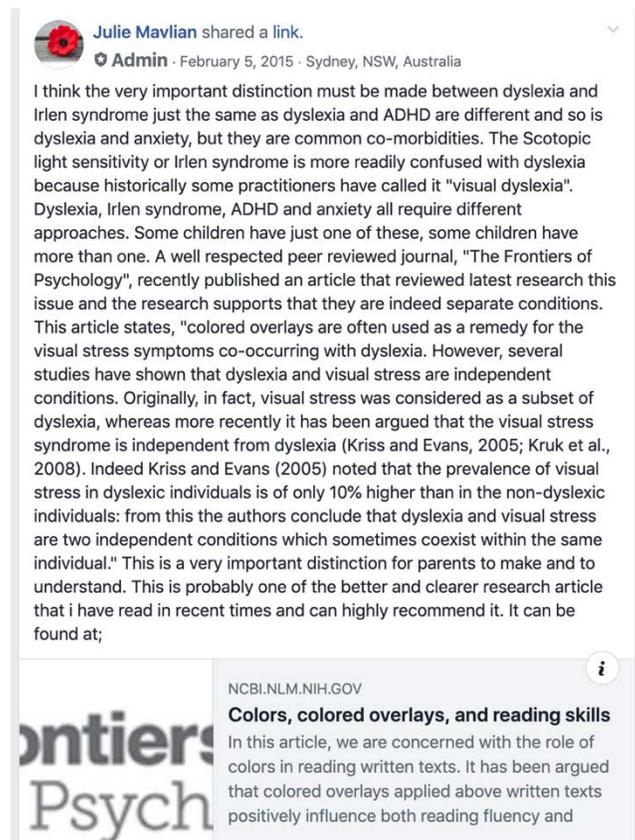
#### 4. Spatial arrangements

Spatial arrangement consider the environment in which dyslexics will feel more comfortable and less stressed. Shaywitz (1998) suggests seating dyslexic students in the front row, closest to the teacher to be able to check their work and to help them more easily. (Chatháin, 2015) proposes pairing dyslexic students with a skilled and encouraging peer who can help them through reading or spelling.

Dyslexic learning settings should include the display of clear, necessary information around the class, quick reminders of basic terms and key words supported by visual aids. Providing neat areas in the classroom can also keep dyslexics' anxiety levels low and ensures that their brain organizes ideas more clearly.

#### 5. Visual strategies and accommodations

Dyslexics frequently show creative abilities. They can visualize what is being learned. However, when it comes to processing information, they have several difficulties: reading math symbols, judging distance, understanding what they read, and spatial awareness, among others. Nevertheless, there are visual strategies and accommodations that can help them with this processing. Crowdsourcing in general suggests avoiding light text on a dark background, using colored paper instead of white, choosing matte paper to reduce glare, as well as the use of yellow tinted glasses. Through crowdsourcing, we asked if using tinted glasses could help dyslexics to read faster, as we had learned before from personal experiences: Julie Mav (2014) posting in Dyslexia Support Australia, explains that the use of tinted glasses has to do more with what is called Irlen Syndrome, which is also known as Scotopic Sensitivity Syndrome. She explains the connection between this syndrome and dyslexia in Figure 1.



Julie Mavlian shared a link.

Admin · February 5, 2015 · Sydney, NSW, Australia

I think the very important distinction must be made between dyslexia and Irlen syndrome just the same as dyslexia and ADHD are different and so is dyslexia and anxiety, but they are common co-morbidities. The Scotopic light sensitivity or Irlen syndrome is more readily confused with dyslexia because historically some practitioners have called it "visual dyslexia". Dyslexia, Irlen syndrome, ADHD and anxiety all require different approaches. Some children have just one of these, some children have more than one. A well respected peer reviewed journal, "The Frontiers of Psychology", recently published an article that reviewed latest research this issue and the research supports that they are indeed separate conditions. This article states, "colored overlays are often used as a remedy for the visual stress symptoms co-occurring with dyslexia. However, several studies have shown that dyslexia and visual stress are independent conditions. Originally, in fact, visual stress was considered as a subset of dyslexia, whereas more recently it has been argued that the visual stress syndrome is independent from dyslexia (Kriss and Evans, 2005; Kruk et al., 2008). Indeed Kriss and Evans (2005) noted that the prevalence of visual stress in dyslexic individuals is of only 10% higher than in the non-dyslexic individuals: from this the authors conclude that dyslexia and visual stress are two independent conditions which sometimes coexist within the same individual." This is a very important distinction for parents to make and to understand. This is probably one of the better and clearer research article that i have read in recent times and can highly recommend it. It can be found at;

NCBI.NLM.NIH.GOV

**Colors, colored overlays, and reading skills**

In this article, we are concerned with the role of colors in reading written texts. It has been argued that colored overlays applied above written texts positively influence both reading fluency and

*Figure 1. Crowdsourcing explanation of the possible relation between dyslexia and Irlen Syndrome given by the Facebook page Dyslexia Support Australia (Mavlian, 2015).*

On this topic, a posting in the Facebook group of the British Dyslexia Association led us to an article published by The British Council (n.d.) which recommended the use of different marker colors to write on the board as well as the use of children's preferred colors for their workbooks, homework and tests instead of the generally used lead pencil. They also suggested including the use of highlighters to study vocabulary and spelling to offer a clear order of all the necessary letters. Students get very excited when using a tool that is generally used by grown-ups, so it is a useful and fun strategy for them.

In regard to this topic of visual strategies and accommodations, The British Council article (n.d.) recommends dyslexia-friendly classrooms display clear visual aids. Some examples include the following:

- a. keywords of the subject or for the lesson
- b. important information like basic terms and key figures
- c. summaries of processes to be used in class using pictures to support the text
- d. mind maps summarizing the topic studied
- e. the use of color to draw attention to significant or difficult words
- f. labelled resources with pictures as well as words
- g. diagrams, graphs and charts, pictures, mind maps and extensive use of color

In *Teaching English-language Learners with Learning Difficulties*, Gersten, Baker and Unok (1998) recommend techniques that involve the frequent use of visuals. They mention that comprehensible instruction also requires that teachers carefully control their vocabulary by using graphic organizers, concrete objects and gestures when possible, to boost understanding. Visual strategies also include the teacher tactic called "thinking aloud": verbalizing the teacher's instructional task or examples. Demonstrating the activities that are taught gives dyslexics a model for completing assignments as well as step by step examples of completed assignments. It also motivates students to use them as well. An additional strategy suggested by the authors is related to the Winston Grammar Program, a grammar application program which covers the five most common usage errors to make writing more effective and fluent, developed by Erwin (1982). The program recommends "the use of color-coding, where parts of speech are taught one at a time using colored cards in a game-like manner". Using this strategy, dyslexics benefit from color-coding increasing their engagement in learning and making it more enjoyable.

The use of visuals can also benefit dyslexics. For example, Holešinská (2006) suggests using visual cues to help students learn new vocabulary. This can be done by building dyslexics' own "dictionary" using address books. She also advises writing the words in bold on index cards and marking the problematic part of the words with a different color. This can help with dyslexics' spelling because they make a "mental picture" of the mistake and the correct spelling.

## 6. Kinesthetic strategies and accommodations

A useful method that can help young students when learning a foreign language is the one that applies multi-sensory techniques which use all sensory channels letting students support their weakest channel with input from the strongest (Crombie, 2000). For example, in order to practice spelling, the student can listen to the word (auditory channel), look at the image representing that word (visual channel), read the spelling provided by the teacher (visual channel) and copy it using modeling clay (tactile channel). This method is practical for teaching pronunciation, spelling and reading among other abilities. Moreover, the multisensory method allows learners to memorize and recover information more easily than just by reading or listening. Schneider and Crombie (2003) beginning by hearing the input, then seeing it before saying it. This is followed by writing it and then performing it. Crombie (2000) also led a study taking a multisensory approach to the learning of a modern foreign language with good results. From this study, she concluded that dyslexics benefit from using similar strategies to the ones they use for learning their first language; these are also helpful for non-dyslexic students:

- a. understanding how the students learn (metacognitive approach)
  - b. using words that fit into similar rhyming groups (analogous reading)
  - c. having a peer/tutor modelling reading to help the student feel more confident (modeling)
  - d. listening and sorting specific sounds (training students' auditory discrimination)

- e. using tools to help remember facts or large amount of information as songs, images, phrases (memory training)
- f. using technology (videos, computers, audios) for extra practice (overlearning)
- g. using visually attractive material (motivating material)
- h. considering how a student could better learn – pair work, seating arrangements, light in the room (learning styles)

Moreover, Chatháin (2015) asserts that dyslexics respond well to learning through movement, hands-on activities, designing and creating as well as role playing and drama. These specific strategies can aid dyslexics because normally they learn as they do. They have to “feel” their learnings with their hands in order to make meaningful connections with their brains. Some other practical examples recommended by crowdsourcing and experts include tracing numbers or letters in sandpaper, with a finger into sand or on someone’s back. These will be explored in more detail in the following paragraphs.

### Multisensory Approach

This approach in language teaching uses more than one sensory channel to input information and it is essential for dyslexics according to Nielsen (2002). Teachers need to employ visual, auditory and kinesthetic-tactile activities to provide dyslexics more active participation in the process language learning.

The Orthon Gillingham approach, a language-based, multisensory, structured, sequential, cumulative, cognitive, and flexible approach that has been used since 1930 is intended primarily for individuals who have difficulty with reading, spelling, and writing associated with dyslexia, suggests that simultaneous use of multiple senses including auditory, visual and kinesthetic (multisensory) is thought to enhance memory storage and retrieval. Moreover, the International Dyslexia Association (2014) states that dyslexics “have to have lots of practice in having their writing hands, eyes, ears and voices working together for conscious organization and retention of their learning”. As an example, students can watch videos where specific words are spelled. Students subsequently repeat the letters and words aloud. Next, students can “write” the words with modeling clay “snakes” to consolidate spelling using also their kinesthetic skills. Only then should dyslexics be exposed to a vocabulary test. These exercises are helpful to support dyslexics’ learning through experience. There are distinctive difficulties in dyslexic students related to the order of words in writing (Baschera, 2011) and this “hands on” exercise can help them feel the words with their hands, giving them more time to process them in their brains and make fewer mistakes when they have to actually write them on paper.

Multisensory approaches have also been considered beneficial for dyslexics because their use incorporates strategies that help them learn and retain information more easily than when they only use one of their senses. Holešinská (2006) also used this type of multisensory approach in her study by exploring several activities to help dyslexics with their spelling. One of those activities called “Trace, Copy and Recall” uses a chart with few spelling words. The columns are labeled either Trace/Copy/Recall. Folding over the Recall column, the student says the words to him/herself tracing it in the first column trying to include some rhythm to it. In the second column, using the same rhythm the student should copy the word from the first column. Finally, flipping the paper, the student tries to remember the correct spelling. The student can eventually feel confident enough to try to write more than one word. It seems like a difficult activity considering the number of vocabulary words students sometimes need to learn at school, but the student will remember them more clearly in the future.

Another variation Holešinská (2006) suggests for spelling using multisensory approaches is the use of writing “crazy stories” using the most difficult spelling words which can involve working in teams or even acting their story out. And finally, she also suggests the use of reminders for useful spelling or grammar rules which can include pictures or videos.

### Task-Based Learning Method

This type of method is also very useful for dyslexics because it offers the opportunity to complete tasks reflecting real life. Playing games and realistic role-playing take away form and structures and develop student’s abilities to complete tasks in the target language with a subsequent feedback and language focus. This method offers flexibility because it can be combined with writing and reading tasks as well leading to more motivating activities.

A study from Kiss and Lin (2016) called “Beliefs, Knowledge and Practices of Grammar Pedagogy: Teaching Dyslexic Learners”, explores the foundations of teachers' work in teaching grammar and considers their personal beliefs and knowledge in action. One of the teachers from their study showed a very common duality in teachers' beliefs when using common language teaching approaches and their actual in-context application. Although this teacher considered that dyslexics would benefit from repetition of grammar drills and explicit teaching, she thought that these drills would not be stimulating for her students. She then thought of an alternative for the presentation-practice-production (PPP) model of grammar teaching, considering the learners' predilection for “games and stories”. She introduced the topic using flash cards in the presentation stage. In the practice stage, she played drilling games but still involved correction in an enjoyable way. In the production stage, she introduced free-flow activities, less structured than those in the previous stage. This kind of accommodation is what can be successfully applied in any traditional school to the benefit of dyslexics.

### 7. Technological tools

Taking advantage of the fact that children enjoy watching TV and videos on the Internet, teachers can benefit dyslexics by using visual cues to grasp vocabulary and basic grammar through watching, listening and speaking. When students have a firm understanding of the spoken language and are mature enough to learn the written word, we can then start teaching students grammatical structures. The advantage of using technology is the speed of learning and the motivation related to using technology in class.

On that same basis, The British Council (n. d.), in their work about making classrooms dyslexia friendly, says that schools are allowing more access to technology benefiting students through numerous possibilities including researching, preparing more visual presentations using graphs and diagrams, solving interactive grammar and listening exercises. They also suggest that dyslexics can use technology to record themselves or the class on tape or video. Computers can help them also by using word processing with useful support packages designed for dyslexics. There are also apps for voice recognition software and programs, which use visual thinking methodologies and provide a cross-curricular visual work area, where students can combine pictures, text, numbers and spoken words to improve their word recognition, reading for comprehension, writing and critical thinking skills.

An electronic device that is recommended by crowdsourcing for dyslexics was the *TouchTypeReadSpell™* (TTRS) gadget. This technological resource incorporates structured word lists based on the work of Orton and Gillingham (1948). It is used by various dyslexia associations with encouraging results in spelling by building students' literacy skills. It increases confidence in dyslexics as they practice keyboarding skills by hearing the words, seeing the words printed on the screen and receiving prompts as to what fingers to press in the on-screen keyboard.

Crowdsourcing also mentioned the use of a relatively new font called “Dyslexie”, which was called a “breakthrough” as it apparently improved the speed of reading in dyslexics. A study conducted by Marinus, et al. (2016) into the effectiveness of “Dyslexie” found that the progress shown in the participants was probably more related to the space between the letters than to the design of the font, per se. Whatever the case, technology can play an important part in benefitting dyslexics, either by using this font or enlarging the space between letters.

### **Conclusion and Future Implications**

Using crowdsourcing and recent studies, we gathered numerous recommendations that could guide researchers to a future formal study into the benefit of teaching accommodations in elementary dyslexic students' language performance, their attitudes towards the language learning process and their general language achievement.

Dyslexia is a condition that makes learning different and with certain accommodations that involve little or no extra work for teachers, dyslexics can benefit greatly. Although the educational system cannot be completely changed to benefit only dyslexics, a wide-ranging environment of complementing skills besides reading and writing could help students with this condition, ease the pressure that dyslexics face every day in order to preserve their self-esteem and give them a sense of accomplishment, which will show progress in their general performance. Taking those accommodations into account, dyslexics can achieve what every other student can within the same program.

A classroom that is dyslexic friendly should have a great variety of authentic listening and reading material that can motivate and provide purposeful communicative activities in combination with the best elements

of simultaneous methods in the benefit of all students but bear in mind a specific intention of helping learners with this condition.

There are still some pending questions: What can teachers do if they barely have time to manage the normal, daily group's activities? Will they have time to meet dyslexics' requirements? Based on the gathered information, experts suggest that one of the most important ways to help dyslexics is motivation. Besides this emotional boost, technology is now being considered as a great support for dyslexics.

Uncovering the veil of the dyslexia stigma, empowering teachers, parents, authorities and students with information about dyslexia, will open one of the endless possibilities for future research. Numerous and enjoyable ideas for students (and teachers) were gathered through crowdsourcing and literature which can later be applied in a study to aim at a general improvement in dyslexics' outcomes and at their own personal perceptions of being successful, independent learners.

In regard to dyslexia specifically in México, there is a broad area for future research, from more accurate diagnoses to special examination formats for dyslexic students of all ages. The *Consejos Técnicos*<sup>4</sup> are respectable tactics used in Mexico to improve our development as teachers. However, the material and strategies used have not yet addressed the topic of dyslexia, at least at the time this review was written. Workshops for teachers are needed to discuss their everyday lives and experiences, not only to follow an agenda that sometimes does not reflect our living reality in educational matters.

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<sup>4</sup> *Consejos Técnicos* are monthly school meetings organized by the Secretary of Public Education in Mexico in order to plan and make common decisions about education problems, needs and academic success in students of pre-elementary, elementary and junior high school. During these meetings, teachers and school headmasters discuss educational levels and study ways to encourage reading, writing and math skills while taking other actions to support students.

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