

Knowledge, attitudes and interaction on dyslexia among selected Filipino public school teachers

Maria Ophel Cariño¹, and *Rhea R. Bailey²

¹University of the Philippines Los Baños, Philippines

²University of the Philippines Los Baños, Philippines

*Corresponding author: rrbailey@up.edu.ph

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Abstract

Dyslexia as a learning disability can remain unnoticed and untreated for many students who have this condition. This is a manifestation of how dyslexia is relatively unknown and unaddressed among teachers. Thus, intervention remains inadequate. This research aimed to determine the relationship between knowledge and attitudes towards intervention practices on dyslexia among public grade school teachers in Los Baños, Philippines. Data was gathered through surveys, interviews and observations. A complete enumeration of thirty-two mathematics and language grade school teachers showed limited or absence of knowledge about dyslexia, they manifested more positive than negative attitudes, and intervention was observed to be implemented by the teacher-respondents. Further, intervention practices were found to have no significant relationship with knowledge but had a positive relationship with attitudes. This study challenges educational institutions, government agencies, researchers, families, and parents to increase knowledge and foster more positive attitudes towards tolerance and acceptance for more successful intervention practices and programs for students with dyslexia. The study has implications on early intervention and capacitating public school teachers of dyslexic students.

Keywords: Attitudes, intervention practices, knowledge of dyslexia learning disability, public school teachers

Introduction

A child with dyslexia finds himself struggling to understand the context of a sentence, spell the same word correctly in repetition, read words that contain mirror-imaged letters, and associate meaning to these words. The International Dyslexia Association (2002 in IDA, 2019) defines the condition as a “specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.” Also, the International Dyslexia Association (2016 in IDA, 2019), asserted that about 15 to ten 20% of the global population has the condition. This translates to about 1 billion people around the world. Further explained by The Yale Center for Dyslexia and Creativity (n.d.) that it has “no connection to their overall intelligence...while people with dyslexia are slow readers, they often, paradoxically, are very fast and creative thinkers with strong reasoning abilities.” Thus, Dyslexia is a global issue that calls the attention of the family, education and government systems to working cohesively and effectively.

In the Philippines, the Republic Act 9155 (RA 9155) or Governance of Basic Education Act of 2001 promotes the rights of all Filipinos for basic education. This is also known as the EFA: Education for All (Planipolis, n.d.). This states that schools need to have competent teachers to ensure quality education (Republic of the Philippines Department of Education, 2015). Quality education for all, of course, includes those with learning disabilities, including, dyslexia. Most public school teachers in the Philippines have limited knowledge about dyslexia and its’ implications to learning and development. Hence, this research investigates the relationship between knowledge and attitudes, towards intervention practices on dyslexia among public grade school teachers. The findings of this study will determine if a teacher’s knowledge and attitudes influence the application of intervention practices for students with the condition.

Conceptual framework

The International Dyslexia Association (n.d.) stated that the severity of the condition and timeliness of intervention are crucial factors in how pupils are affected in the classroom. Thus, teachers need to be experts of diverse intervention strategies in managing children who have special learning disabilities particularly those who are dyslexic (Troeva, 2015). Early intervention is highly important as this can have implications on further academic achievement, and is connected to the stress and anxiety levels of the student (International Dyslexia Association, n.d.). Students who have the condition are confronted with tasks in reading, writing, and speaking that may be, perceived or in reality, too difficult for them. It can further be said that primary school teachers are at the forefront of identifying and providing intervention approaches for students with this condition. However, optimizing educational outcomes for students with dyslexia remains a multi-faceted challenge for teachers.

Makgato and colleagues (2022) stated that though teachers are aware of and have knowledge about dyslexia, they did not receive any information about it during their pre-service training. Thus, they only had a general understanding of problem-solving mechanisms and limited coping strategies with dyslexic students in the classroom. Also, in a qualitative study by Daley (2020) in the United States, participants revealed that they had knowledge about dyslexia but had difficulty identifying whether the students had the condition. Further, these teachers relayed that they were inadequately trained to provide science-based interventions as their knowledge only came from a two-hour state-mandated training without any hands-on session. This made the participants feel unqualified to address the concerns of students with dyslexia. In addition, Acheampong and colleagues (2019) found that public school teachers in Ghana had average knowledge and manifested misconceptions about the condition such as word reversal, visual deficit, and intelligent quotient. Their findings also cited that the “main barriers to teaching children with dyslexia included inadequate resources, lack of training on dyslexia, large class sizes making it difficult to recognize a dyslexic, as well as time to develop dyslexia friendly instructions” (p. 86-87). Similarly, a study by Thwalaa and colleagues (2020) in South Africa enumerated that the difficulties were insufficient time, unwelcoming attitudes, lack of support, and insufficient training in addressing the concerns of these students.

Thus, teacher awareness about dyslexia needs to be improved as more knowledge can possibly give way to more positive attitudes towards students who have the condition. As published by Tosun and colleagues (2021), teachers who took a course on dyslexia during their college training had more positive perceptions about it. Consequently, positive attitudes can give more positive dispositions towards providing favorable intervention strategies during class. Kadir and colleagues (2023) highlighted that as dyslexia has effects on the student’s emotional and mental well-being. They usually have low self-esteem and self-confidence as aggravating characteristics of their condition. Thus, positive attitudes from their teachers is vital. They emphasized that successful inclusion is very much dependent on teacher attitudes. They furthered that educational programs for these types of students can be strengthened by recognizing the pace by which the student learns, making use of multi-sensory strategies, having more opportunities for reading rehearsals and giving immediate feedback.

The House of Congress in the Philippines (2023), reported that there are 1.6 million Filipino children with disabilities and only 232, 975 are mainstreamed in regular classes in the school year of 2016-2017. The study of Chiu and colleagues (2023) included a 2018 World Health Organization report that several factors limit access to services such as: physical spaces that are restrictive, absence of assistive devices, stigma attached to those with handicaps, and non-inclusive practices. The study highlighted that there is an existing information gap and corresponding response for support all over the country. Thus, Filipino children with disabilities continue to experience inadequate services that is aggravated by a dearth of research data, negative attitudes, and discriminatory practices by the public in general.

Therefore, this research delved into getting a glimpse of the Philippine scenario. How do primary public school teachers deal with students with dyslexia in their classroom given their knowledge and attitudes towards the condition, and what are the intervention practices that are afforded by them in relation to these two variables.

Research objectives

Generally, the study aims to investigate the relationship between knowledge and attitudes towards intervention practices on dyslexia among public grade school teachers. Specifically, the study objectives are as follows:

1. Determine the level of knowledge on dyslexia of public grade school teachers.
2. Describe the attitudes towards dyslexia of public grade school teachers.
3. Describe the intervention practices on dyslexia of public grade school teachers.

Methodology

Research design

The data for this study was collected using an adapted survey questionnaire which comprised four parts: (a) socio-demographics, (b) knowledge of dyslexia, (c) attitudes towards dyslexia and (d) intervention practices.

The research instrument's structure was modelled from the "Comparative Analysis of the Knowledge, Attitude and Practice of 1st to 3rd Grade Teachers of Private and Public Schools towards Free Play" by Feliciano and Dy (2021). Certain adjustments such as the removal of unnecessary socio-demographic characteristics from the original and adapting dyslexia checklists were made. The research instrument was found statistically valid. The socio-demographic section of the questionnaire included sex, age, civil status, highest educational attainment, degree course finished, subjects taught, number of pupils (per class), grade level/s handled, years in teaching, frequency of seminar participation and type of seminar attended. Section two of the questionnaire entitled "Knowledge on Dyslexia" was adapted from the "Dyslexia-Friendly Teacher's Toolkit" by Parey and colleagues (2013). This section was presented in a checklist style and had three choices namely yes, no, and I don't know. Thirteen characteristics were enumerated including seven which were reversed to test whether the teacher had established knowledge about dyslexia. The third section entitled "Attitudes towards Dyslexia", was adapted from "Are they just lazy? Student Teachers' Attitudes about Dyslexia" by Gwernan-Jones and Burden (2010). It was presented in a 5-point Likert scale to measure the level of agreement of teachers towards the given statements. Some of the 16 statements enumerated were negatively keyed. Section four entitled, "Intervention Practices", was adapted from "Dyslexia Friendly Quality Mark for Individual Schools" by the British Dyslexia Association (2015). This was presented in a checklist-style and respondents were given three choices namely often, seldom and not at all to assess how often teachers practice the 19 statements enumerated as intervention practices.

A researcher-made interview sheet was employed for the qualitative part of the study. The tool was comprised of five open-ended questions that further aided in the analysis of the participant's knowledge, attitudes, and intervention practices towards dyslexia. A researcher-made observation sheet was also used to check whether the declared answers of the research participants in the questionnaire were aligned with the intervention practices that they implemented. The researcher enlisted two options for their answers, namely "observed" and "not observed".

Descriptive statistics was applied to the variables of observation. Spearman Correlation Analysis was to determine the relationship among variables - 13 items for knowledge, 15 for attitudes, and 19 for intervention practices. Likert scale responses were reverse-coded and thematic analysis was applied for the qualitative part of the research. Participants with the highest and lowest scores were further observed in class.

The study did not include factors outside of the classroom that can influence pupil behavior such as intervention practices by developmental pediatricians and/or developmental therapists, parents, and other subject teachers. The analysis also did not include intervention practices done by the teacher-respondents outside the classroom. Observations during class hours among teachers who obtained extreme scores in the knowledge section of the questionnaire were conducted.

Respondents of the study

The participants were a complete enumeration of 32 grade school teachers composed of four teaching language, nine teaching mathematics, and 19 teaching both subjects. The sampled school is regarded to be the largest public school in the municipality of Los Baños, Laguna in the south of Luzon in the Philippines. The school accommodates students in the low-income bracket (approximately less than PhP10,000 or USD175 household income per month) with most of them being children of tricycle (a three-wheeled vehicle used for public commute) drivers.

Teachers accommodate large populations of students, with a teacher-student ratio of 1:30 or 1:40. It is assumed that there is a high probability of pupils with symptoms of dyslexia. There is no determined baseline of cases. This is expected in most areas in the Philippines as many children with signs of exceptionality remain to be officially undiagnosed.

Findings and discussions

Knowledge of dyslexia of public grade school teachers

Table 1 shows the frequency distribution of correct answers in the knowledge section. Items with asterisks are negatively-keyed or are statements that are articulated in reverse to what they actually mean. For example, clear handwriting was included in the list of characteristics, but in fact, children with dyslexia have poor handwriting.

This shows that a dyslexic child may write legibly and has difficulty in reading, but unable to decipher the arrangement of letters, resulting in jumbled letters in writing. This is to identify the depth of knowledge among public grade school teachers. Table 1 shows the frequency and percentage of the teacher-participants who answered the questions correctly.

Table 1

Frequency Distribution of Correct Answers for Knowledge Scores on Dyslexia

Code (Signs of Dyslexia)	Knowledge variables	f	%
K3	Reversal in letters	26	81.25
K1	Difficulty in reading	24	75.00
K10	The spelling of complex words without difficulty*	23	71.88
K2	Clear handwriting*	21	65.63
K6	Excelling in other fields but experiencing difficulty with major academic subjects	19	59.38
K4	Ability to comprehend what they read*	18	56.25
K5	Ability to communicate orally	14	43.75
K7	Difficulty in solving math word problems	14	43.75
K9	Able to organize their things/personal belongings properly*	14	43.75
K8	Retentive memory	13	40.63
K11	Understanding directions or instructions properly*	13	40.63
K12	Reading aloud with comprehension*	13	40.63
K13	Short-attention span; hyperactivity	10	31.25

Note. N=32. Items with asterisks are negatively-keyed.

Short-attention span or hyperactivity (K13) was recognized to be a sign of dyslexia by few teacher-respondents at 31.25%. Teachers may have viewed short-attention span or hyperactivity (K13) as a sign of Attention Deficit Hyperactivity Disorder (ADHD) and considered it as a separate learning difficulty. ADHD is one of the most common emotional, cognitive, and behavioral disorders in children, characterized by a short-attention span and hyperactivity (Shia Kan Lodhi et al., 2016).

The reversal of letters (K3) had the highest score at 81.25% in the teacher's description of dyslexia. The findings are also consistent with Shetty and Rai (2014) where 80% of teachers agreed that reversal of letters as a sign of dyslexia. Difficulty in reading (K1) is considered a sign of dyslexia by 75.00% of the teachers. Students with dyslexia either cannot read well or cannot read at all. In other cases, they read letters and words from opposite direction, right to left.

Table 2

Frequent Words and Phrases Used by Teachers to Describe Dyslexia

Words/Phrases	f	%
Jumbled/reversal/interchanging letters	20	62.50
Difficulty in reading	13	40.63
Right-to-left (writing and reading)	6	18.75
Disease, disability, disorder	3	9.40
Poor learning ability	3	9.40
Problems in vision	2	6.25

Table 2 shows words and phrases used by the teachers to describe dyslexia. Participants (62.5%) most frequently associate the condition as reading in a jumbled, reversed way or by interchanging letters. This was followed by a difficulty in reading (40%) and reading from right to left (18%) instead of the normal left to right. Kassuba and Kastner (2015) states that the human brain has an area called the wordbox, also known as the visual word form area, that specializes in knowing what written words look like. The wordbox is developed when a person first learns how to read. The order of letters is important as it defines each word – for example, pat and tap mean two different things. Thus, it is important in the English language to always read from left to right.

Other teachers perceive dyslexia as a disease, a disorder, and/or having vision problems. These aligned with the study of Jusufi (2014) where respondents referred to dyslexia by using terms such as disorder, disability, special disability, psychological occurrence, and difficulties in understanding. Generally, participants had low scores for knowledge on dyslexia, accounting 16 out of 32 (50%) respondents getting a score of 0-6 points from the knowledge questionnaire.

Attitudes towards dyslexia of public grade school teachers

Both negative and positive attitudes were thematically extracted from the interview responses. Negative insights were manifested with suggestions by the participants that the child should seek help from a psychologist.

On the other hand, teachers who showed positive attitudes perceived dyslexic students as “normal”. They viewed this condition as state of delayed development compared to an expected set of functional skills. Further, the respondents did not view dyslexia as a hindrance for a child to succeed. Teacher-respondents were observed to have positive and negative attitudes towards the condition but generally had leanings toward a positive disposition. Most believed that these children can be taught to learn and must be treated like regular students. The findings were consistent with Lodhi and colleague’s study (2016) concluding that 58.70% of teachers were positive about children with learning difficulties being as successful as their peers.

In addition, some (53.62%) of these participants recommend that children who are struggling, or who have signs of dyslexia should seek help from professionals and be given proper attention. Others opined that dyslexia is common among school children but can be corrected through the assistance of teachers and parents. Teachers did not consider students with dyslexia as special education students but as normal as everyone else.

Intervention practices towards dyslexia of public grade school teachers

Most of the respondents seldom conduct school tutorials to students who have a hard time learning the subject. Some of them mentioned that the school offers remedial classes at school after and/or before classes for students with dyslexia, in one-on-one sessions and within its premises.

They were inclined to deliver lessons using direct instruction due to limited classroom time. Morrison and Stapleford (n.d.) explained that for a teacher to effectively teach a child with dyslexia, the teacher should be cognizant of specific needs, simplify and make instructions more explicit, and employ multi-sensory approaches. The teacher need to perceive the student with individual learning strengths and weaknesses to enable the student to perform with the fullest potential. It can be stated that the activities teachers employ should be tailor-fit to each student’s needs and capabilities.

Even with their limitations, teachers gave intervention practices to students who had signs of dyslexia. One language teacher allowed her third-grade pupils to visualize situations. Every pupil was encouraged to participate and given opportunities to read the poem of the day. In the meantime, a mathematics teacher devised board work on solving multiplication problems encouraging students to answer problems step-by-step with the drafts of solutions, enabling the whole class to see, check, and learn if the procedure was correct. These practices aid the child to better comprehend the words and story by association.

As observed, intervention practices are present but are partially appropriate and inadequate for the needs of students with dyslexia in this school with a large student population. This calls for training of teachers to ensure the appropriateness of intervention strategies.

Influence of knowledge on intervention practices on dyslexia of public grade school teachers

Teacher-respondents who gained the extreme scores (lowest–highest) were observed in class. The two teachers have their own set of intervention practices. However, the student population that each handles can be taken into consideration for the intervention practices employed.

The teacher-respondent with the lowest score handles sixth grade and demonstrated two classroom settings, the advanced and the slow groups. It was observed that the lessons were fast-paced, soliciting answers to questions through oral recitation. On the other hand, in the slow section, answers were supplied to prevent consuming too much class time, and helping the pupils understand concepts of the story by giving clues or directly giving the answers. It can be said that techniques such as reading, writing and listening were observed in both classroom settings. However, the strategies were not properly carried out in the slow section due to limited classroom time. Hence, the teacher tried to utilized the direct instruction strategy.

In comparison, the teacher with the highest score handles third grade, having only one section, and had a mix of advanced and slow students. In this setup, the teacher employed strategies that matched the capabilities of her diversely skilled students. For instance, during a language class, children were asked to recite a poem in front of the class, and draw a picture of their own families and work on their English textbooks. Further, peer teaching was used during mathematics class when students were encouraged to help their classmates.

The generated data showed that most teachers got low scores (below 7 points) in the knowledge section. However, it was observed that teachers employ intervention practices even if they have low or no knowledge about dyslexia. The level of teacher-knowledge does not intervene with them performing intervention practices, however crude or inadequate. Thawalaa et al. (2020) presented in their study that teachers are greatly challenged in the classroom with inadequate training for intervention. There is a need for these teachers to be educated on how to tailor-fit strategies to help dyslexic learners to achieve.

Influence of attitudes on intervention practices on dyslexia of public grade school teachers

The participants were given 15 items in the questionnaire to gauge their attitudes towards dyslexia. They were given a Likert Scale to which they were to answer (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, or (5) strongly agree. Table 3 shows attitude scores of participants towards dyslexia. This contains the mean, median, mode, maximum, minimum, and standard deviation scores.

Table 3

Attitudes Towards Dyslexia of Public School Teachers

Variable	Mean	Median	Mode	Maximum	Minimum	Std Dev
Attitude Scores	53.625	54	50	62	40	5.31

The numbers are interpreted as “high” in the index as shown in Table 4. Thus, reflecting that though teachers manifested both negative and positive attitudes, they were more open, more accepting, and have more tolerant disposition towards students who show signs of dyslexia.

Table 4

Index for Interpreting Attitudes Scores

Score	Interpretation
0-40	Low
41-79	High
80	Perfect

Meanwhile, Table 5 displays the scores on intervention practices observed by the teachers. The items in the questionnaire included the following statements: “I place students with difficulties in front so I can assist them easily”, “I adjust my lesson plan for my students especially when I see that they are struggling with the lessons”, “I utilize multi-sensory approach for all lessons during the whole teaching session (i.e. games, oral recitation, lectures, reports)”, “I encourage my students to record information/take notes in variety of ways (i.e. mind maps, diagrams, graphs, etc.)”, “I encourage collaborative work (i.e. sharing of notes, group work) among the fast, average and slow learners of my class”, and “I give extra time for my students to read, write and process information”, among others.

Table 5

Scores on Intervention Practices for Dyslexia

Variable	Mean	Median	Mode	Maximum	Minimum	Std Dev
Intervention Scores	52.719	53	52	57	44	3.21

The teacher scores are categorized within the “high” range for intervention as reflected on Table 6. Thus, manifesting that though the participants had low knowledge about dyslexia, their positive attitudes can still propel them towards giving helpful classroom intervention for the concerned students.

Table 6

Index for Interpreting Intervention Practices for Dyslexia

Score	Interpretation
0-35	Low
36-56	High
57	Perfect

Further, teacher-respondents commented that perseverance in teaching from among them and the students’ significant others (parents, extended family) is vital in order for dyslexic students to learn how to read and eventually succeed academically and in life in general.

Most respondents believed that dyslexia is manageable and can be corrected through their assistance and utilization of appropriate intervention practices. Also, some teachers suggested that parents should seek help from experts such as psychologists so that signs of dyslexia can be managed.

The results revealed that attitudes and intervention practices have a direct relationship. Teachers may have limited knowledge (negative relationship) about dyslexia, but this does not mean the absence of intervention practices. Attitudes of teachers directly influence intervention practices. These positive attitudes move teachers to render helpful activities in the classroom for students with the condition.

Conclusions and recommendations

The results showed that teachers have limited knowledge of dyslexia based on their low scores. Short attention span or hyperactivity was least recognized as a symptom of dyslexia while reversal in letters, and difficulty in reading are characteristics easily associated with dyslexia.

Results, however, showed teachers having more positive attitudes towards dyslexia. Teachers viewed children who had the condition as “normal” students. They opined that although these children may be late in the development of functional skills, dyslexia is not a hindrance to their success. Some teachers were positive about dyslexia being a treatable and manageable learning difficulty, while a few perceived it as a mind disorder, special disability, and a psychological problem. Thus, the participants exhibited both positive and negative attitudes but were disposed to have more of the former.

Responses showed that teachers often practice intervention for their students with dyslexia. However, intervention practices are not supported by adequate knowledge of dyslexia. Intervention practices with positive attitudinal indicators are already present, but not directly linked to its understanding. The teachers were seen to have the willingness to help students. They are inclined to give support despite limited knowledge.

Thus, this study proposes that support and discussion groups between and among parents and teachers be formed in schools. These can be venues to promote a more accepting and nurturing environment for this population of learners. It is also very important to note that the teachers’ attitudes direct their practice of intervention. Such disposition can be capitalized to produce the best educational outcomes for students with dyslexia. Further, it will be a strong boost to forward the cause of students with dyslexia if government resources be adequately provided for capacity-building through training on dyslexia for public school teachers. Thus, students on the grassroots can be given better opportunities for better academic success, and later on in life.

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