
CHAPTER TWO

INFORMATION NEEDS OF TEACHERS ON STUDENTS WITH DYSGRAPHIA

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Abstract

The paper discussed the information needs of teachers on students with dysgraphia disorder. Students with dysgraphia disorder are most times being overlooked by their teachers; hence this paper gives insight on the meaning, causes, symptoms and effects of dysgraphia. It also discusses the roles of the libraries with its services to the teachers and students with dysgraphia. The paper therefore recommends among others that Libraries should endeavor to provide assistive technology software to both teachers and students on dysgraphia such as games, illustrated books etc also dysgraphia children, their families and teachers should be provided with information and education about dysgraphia disorder and its impact, and the advantages and disadvantages of potential treatment strategies.

Introduction

Dysgraphia disorder is one of the types of learning disabilities that deal with mental disorder among children. This puts strains on the child's ability in writing. Dysgraphia is a difficulty in writing, resulting in written work which may be illegible and inaccurately spells. Students with dysgraphia are affected by an impairment or immaturity of the organization of movement, often appearing clunky (Musa, 2010). Ugbo (2017:186) similarly describes dysgraphia as a "disorder of written expression characterized by unexplainable poor handwriting, in which those students affected find it difficult to form letters, figures or write within a defined space. These set of students are known with illegible handwriting, punctuation errors, poor paragraph organization, multiple spelling errors and letter case insensitivity". Some students have low performance in schools not due to lack of motivation, low abilities or hard work, but learning disabilities. Parents, guidance and teachers expect students to perform excellently in their academics, but when students' performance is low in school they grumble that the students are not hardworking, not concentrating, not ready to learn or lack the ability to learn. But the problem is beyond the issue of concentration, hard work or lack of ability. Students with this kind of problem may be suffering with learning difficulties. Thus, students with learning difficulties such as dysgraphia cannot improve learning ability particularly written expression on their own like normal students. Therefore, they need help to learn on how to pay attention, try harder or improve motivation because of their special needs (Musa 2010). Consequent upon this, writing as stressed by Knoblauch (2008) is one of the hard task for some students; students having poor handwriting and problem in expressing themselves through writing may be experiencing learning disability called Dysgraphia. Akande, Olowoniran and Abolarin (2010) revealed that learning difficulties in writing involve the physical act of writing or the mental activity of comprehending and synthesizing information. The authors further that writing difficulty refers to physical difficulty forming words and letters, struggle to organize thought on paper. The problems being associated with this difficulty involves handwriting,

spelling, organizing ideas, etc. This paper has therefore offer information to the on students with dysgraphia disorder.

What is Dysgraphia?

Dysgraphia is a Greek word. The base word graph refers both to the hand's function in writing and to the letters formed by the hand. The prefix "dys" indicates that there is impairment. Graph refers to producing letter forms by hand. The suffix "ia" refers to having a condition. Thus, dysgraphia is the condition of impaired letter writing by hand, that is, disabled handwriting and sometimes spelling" (The International Dyslexia Association, 2008). According to the National Center for Learning Disabilities (National Center for Learning Disabilities) in Giordano and Maiorana (2015) dysgraphia is "a learning disability that affects writing, which requires a complex set of motor and information processing skills. Dysgraphia makes the act of writing difficult. It can lead to problems with spelling, poor handwriting and putting thoughts on paper." Dysgraphia is a specific learning disability that affects writing abilities. It can manifest itself as difficulties with spelling, handwriting and expressing thoughts on paper (National Center for Learning Disabled, 2009). The International Dyslexia Association (2009) defined dysgraphia as "a specific learning disability that affects how easily children acquire written language and how well they use written language to express their thoughts". However, a student with dyslexia can also have dysgraphia, but a student that has dysgraphia does not always have dyslexia. Students with dyslexia or oral and written language learning disabilities usually have spelling problems but they may or may not have dysgraphia. Students with difficulties in handwriting may also have difficulties with spelling. Occasionally, children with spelling problems do not have handwriting or reading problems. "It is important to remember that not all reading and writing problems are the results of dyslexia, oral and written language learning disabilities, and/or dysgraphia" (Berninger & Wolf, 2009,).

Underlying Factors for Dysgraphia Students

Students with dysgraphia often have problems with sequencing. research indicate that what usually appears to be a perceptual problem (reversing letters and numbers, writing words backwards, writing letters out of order and very sloppy handwriting) seems to be related to sequential and rational information processing. These students often have difficulty writing letters and words in sequence. The students could experience extreme problem with the "mechanics" of writing (spelling, punctuation, etc.). The students will also have a tendency to mix letters and numbers in formulas. In many cases, dysgraphia students have difficulty even when they do their work slowly. They often lose their thoughts that they are trying to write about. These students experience difficulty with writing and handwriting. This is because the students "also have difficulty organizing and sequencing detailed information (West Virginia University 2010). Thus, Students with dysgraphia may also have ADHD - inattentive, hyperactive, or combined inattentive and hyperactive subtypes (International Dyslexia Association, 2008). Additionally, Audibox (2009) explained that students with dysgraphia disorder can be characterized with illegible writing, letter inconsistencies, mixture of upper and low case letters or cursive letters, irregular letter sizes and shapes, unfinished letters and struggle to use writing as a communicative device. Therefore, these category of students may be unsure about what they hear, what they see and thus have difficulty in learning to spell, magi words and to write correct words.

Types of Dysgraphia

Deuel, Sheffield and Dianal (2000) listed 5 types of dysgraphia although some children may have more than one types of dysgraphia.

1. **Dyslexic Dysgraphia:** With Dyslexic Dysgraphia a person's spontaneously written work is illegible
2. **Motor Dysgraphia:** both spontaneously written and copied text may be illegible, oral spelling is normal, and drawing is usually problematic. Finger-tapping speed is abnormal.
3. **Spatial Dysgraphia:** people display illegible writing, whether spontaneously produced or copied. Oral spelling is normal. Finger-tapping speed is normal, but drawing is very problematic.

Furthermore, Feifer (2001) buttress that dysgraphia can be categorized into four subtypes. The first subtype is phonological dysgraphia, i.e "writing and spelling disturbances in which the spelling of unfamiliar words, non-words, and phonetically irregular words are impaired" (p. 1). These students tend to have trouble spelling by sounds and rely on the visual aspect of letters; therefore, because spelling is an auditory task, they will have trouble with spelling tests. The second subtype is surface dysgraphia where students have trouble with orthographic representations of words, which makes the student rely too heavily on sound patterns; the opposite of phonological dysgraphia. Mixed dysgraphia is the third subtype of dysgraphia. This type refers to students having trouble with mixing up letter formations and having trouble with spelling tasks, a combination of the first two types. Recalling letter formations is hard for these students to do because there are so many instructions or rules that they get confused and; therefore, have inconsistent spellings of words. Finally, semantic/syntactic dysgraphia is a grammatical problem in which students have difficulty with how words can be joined to make complete and comprehensive phrases.

Symptoms of Dysgraphia

According to Akande, Olowoniran and Abolarin (2010) stated the symptoms of a written language difficulty revolving around the act of writing to include the following:

- Problems with neatness and consistency of writing, accurately copying letters and words, spelling consistency etc.
- Some of the students who have poor spellings have difficulty with auditory memory and cannot hold the sounds or syllables in their minds. These students need instruction that will help them recognize sounds of words and build phonological skills.
- Also, those students with writing difficulties are unable to read a spelling word. Some do not know how to apply phonics and structural analysis to spell a word.
- Some of them are poor in visualizing the appearance of the word.
- Some also have poor motor facility that they cannot write the word.
- Some with unusual body or hand position when writing
- They omit letters and words from sentence
- They experience physical pain/hand cramping when writing

Causes of Dysgraphia

Roland (2018) stressed that when dysgraphia appears in child, it's usually the cause of orthographic coding problem. This is an aspect of working memory that allows them to permanently remember the written words, and the way their hands or fingers must move to write those words. With dysgraphia, children or adult have a harder time planning and executing the writing of letters, words and sentence.

It's not that they don't know how to read, spell, or identify letters and words. Instead, their brain has problems in processing words and writing. Furthermore, when dysgraphia develops in adults, the cause is usually a stroke or other brain injury. In particular, injury to the brain's left parietal lobe may lead to dysgraphia disorder. They have right and left parietal lobe in the upper part of their brain. Each is associated with a range of skills, such as reading and writing, as well as sensory processing, including pain, heat and cold. The International Dyslexia Association (IDA) (2000) cited in their information provided that a few people with dysgraphia lack only the fine motor coordination to produce legible handwriting, but some may have a physical tremor that interferes with writing. In most cases, however, several brain systems interact to produce dysgraphia. Some experts believe that dysgraphia involves a dysfunction in the interaction between the two main brain systems that allows a person to translate mental into written language (phoneme-to-grapheme translation, i.e., sound to symbol, and lexicon-to grapheme translation, i.e., mental to written word). Other studies have shown that split attention, memory load, and familiarity of graphic material affect writing ability. Typically, a person with illegible handwriting has a combination of fine motor difficulty, inability to re-visualize letters, and inability to remember the motor patterns of letterforms.

Effects of Dysgraphia

It is estimated (Rosenblum, 2003) that nearly one-third of students fail to acquire efficient handwriting skills. The effects of poor handwriting easily go beyond the handwriting process and may impact the social aspect of life. According to the National Center for Learning Disabilities (National Center for Learning Disabilities) the most common social challenges that may be faced by dysgraphia students are:

- (1) The child is easily frustrated by writing assignments—to the point of temper tantrums.
- (2) Children with dysgraphia may have language processing issues which can make it difficult to express ideas and speak about specific topics. Language processing difficulties can make it difficult for children to understand humor or language nuances such as sarcasm.
- (3) The child lacks confidence and frequently says, "I'm not good at school". Children with dysgraphia may sense they're different from other kids and worry they're not smart which can lead to low self-esteem.
- (4) Having social issues on top of writing challenges can take a toll on the child.

In addition, Students with dysgraphia always have trouble in concentrating on other things that are not relevant while writing. This can make it difficult to write notes during class activities because so much attention is being paid in getting each word down on paper. Dysgraphia disorder students may also be accused of being sloppy or lazy because they have poor handwriting. In order word, this can affect their self-esteem and lead to anxiety, lack of confidence and negative attitudes toward school (Roland James 2018).

What Teachers can do to assist Students with Dysgraphia?

It is important for teacher to know whether students have difficulties in:

- Handwriting only
- Spelling only
- Word reading and spelling
- Handwriting, word reading and spelling

However, according to Roland (2018) having students with dysgraphia disorder in the classroom these are some of the strategies that may assist teachers in helping such students include:

- a designated note taker in the classroom
- use of a computer for notes and other assignments
- oral exams and assignments, instead of written ones
- extra time on tests and assignments
- lesson or lecture notes provided by the teacher as printouts, recordings, or in digital form
- pencils or other writing implements with special grips to make writing easier
- use of wide-ruled or graph paper

Role of Library to Students with Dysgraphia

According to Das (2017) buttress that library can perform its duty by providing some assistive devices to the dysgraphia disorder students, such as;

1. Provide assistive technology software like Read &Write, games etc that can improve their writing skills.
2. Give assistance in locating information materials that can develop their writing activities by the trained library staffs.
3. Provide assistance with the use of library computers, catalogs, literature indexes, microform readers, slide or other library equipment that can be helpful to them.
4. Meet their reference questions in a kind manner.
5. Provide assistance with printing from library computers with emailing search results.
6. Library can also provide advice on print and electronic resources for specific subject areas.

The author furthered explained that libraries have to stress on the need for equality to access for the disabled students in general and dysgraphia students in particular. The librarian must liaise with the management of the school working for the person with a disability for necessary information.

- The librarian has a special responsibility to address to service for a person with special needs
- Information Communication Technology should be available and make used for the dysgraphia users.
- Popular guide line accessible to disabled users most especially dysgraphia users.
- The list of the relevant website for reference should be available for the special needs
- Endeavor to promote the integration of student with special needs (dysgraphia in particular) in normal school
- Endeavor to equip the special school for special needs with vocational training facilities.

Library Service

Libraries are an organization which renders services to all users without discrimination among their users including those with disabilities. As more as students with special needs attend school, it is obligatory upon library and the school management to provide the same level of services rendering to normal student to students with disabilities. A Library as information centre that cater for all kinds of users especially users with special needs, provide opportunities of research, learning, study, recreation etc. Ogunniyi, Akerele, Aforlabi and Jato (2009), said functions of a library to all and sundry regardless of being able or disabled are information dissemination, expansion of learning, independent

learning, recreation, values and attitude development and making information available to those who are less privileged. In other words, a library, whether national, academic, school, public or private, should be able to cater for the information needs of students with disabilities especially students with dysgraphia difficulties. This will enable them to have equal right to education and information just like their able similitude. In addition, information resources have to be available for dysgraphia students like captioned video, films CD-ROMs, DVD-ROMs and Game software that can develop their writing skills. Others are electronic board, projector, slide etc to help them in their writing activities and their academic pursuit.

Conclusion

Writing is a skill that is central to learning and activities of daily living; it begins to develop in early childhood but continues through the school age. Though common in children, dysgraphia and disorders of written expression are often overlooked by the school and family as a character flaw rather than a genuine disorder. It is very needful for teachers to understand that dysgraphia is a neurological condition that can lead to significant difficulties throughout one's life. Some of the students have difficulties in writing development and this can negatively have impact on a student's experience in classroom.

Recommendations

Students with dysgraphia are one of the biggest challenges faced by the teachers in the class hence the following recommendations would help in enhancing their academic advancement and social enhancement:

- Libraries should endeavor to provide assistive technology software to both teachers and students on dysgraphia such as games, illustrated books with fun characters and multi-sensory activities to help the students overcome difficulties with their listening comprehension.
- Dysgraphia children, their families and teachers should be provided with information and education about dysgraphia disorder and its impact, and the advantages and disadvantages of potential treatment strategies.
- Teachers need to be trained and increased education to support students with dysgraphia in classroom for their academic progress.
- Dysgraphia students need guidance and understanding from their teachers and their parents to reach their full potential and to succeed. Teachers can invite mental health professionals to educate the parents of dysgraphia about their condition and how it affects a family, develop new skills, attitudes, and ways of relating to each other.
- It is also recommended that teachers should make an effort to first identify the unique needs of these students, evaluate their educational strengths and select appropriate instructional practices that would be of benefit to them. Students with dysgraphia learn best with a carefully structured academic lesson, thus, set learning and behavioural expectations, support students' participation in the classroom, divide work into smaller units, provide additional oral directions, use audio-visual materials, monitor the level of noise in the classroom and ask probing questions among others.
- Staff training should be given to all members of the staff about dysgraphia, identifying the students with dysgraphia and emphasize that it should be recognized as a disability and sort difficulties that they experience.
- Teachers should always respect the student's confidentiality; build good relationship with parents and keeping them regularly informed about the progress of the student.

- Finally, government and schools should endeavor to provide funds for the purchase of information resources needed by dysgraphia students and their teachers for better results.

References

- Adebayo, O., Zubair, O. and Ogunsola, Y. (2018). Equitable School Library Services for students with Dyslexia in Nigeria. *Bilgi Dunyasi*, 19(1), 1-14.
- Ajiboye, J.O. and Tella, A. (2007). University Undergraduate Students Information Seeking Behaviour Implications of Quality in Higher Education in Africa. *The Turkish Online Journal of Educational Technology*, 66(1), 40-50.
- Akande, J.A., Olowoniran, A.O. and Abolarin, E.E. (2010). Dimensions of Learning Difficulties. In A. A. Ekoja & D.O. Clifford (Eds.), *Learning Difficulties and the Nigerian Child* (pp. 65-71). Lagos, The Nigerian Society for Educational Psychologist.
- Audibox, (2009). Symptoms and Causes of Dysgraphia. Retrieved on the 22nd December, 2020 from http://www.Audibox.com/dysgraphia_causes.htm
- Berninger, V. W. and Wolf, B. J. (2009). *Teaching Students with Dyslexia and Dysgraphia*. Baltimore, MD: Paul H. Brooks Publishing Co., Inc.
- Das, A. (2017). Information support for the development of disabled persons with special reference to the people of East Midnapore a district of West Bengal India. Retrieved on 25th Jan., 2021 from: <https://sg.inflibnet.ac.in/handle/10603/246157>.
- Deuel, R.K., Shiefield, B. and Diana H. K. (2000). Developmental Dysgraphia and Motor Skills Disorders. *Journal of Child Neurology*, 10(1), 6-8
- Feifer, S.G. (2001). Subtypes of Language-based dysgraphias. Handout from workshop "Learning of the Brain" Using Brain Research to leave no child behind; MA Public Information Resources
- Giordano, D. and Maiorana, F. (2015). A Mobile Web Game Approach for Improving Dysgraphia. Science and technology publications, Ltd in proceedings of the 7th international conference on computer supported education. Page 328 - 333
- Knoblauch, L. (2008). How to Assist a Student with Dysgraphia in the classroom: Super Duper. No. 147. Retrieved on 9th Dec., 2020 from www.superduperine.com
- Musa, A.K.J. (2010). Understanding Specific Learning Difficulties: Implications for Classroom Practices in Learning Difficulties and the Nigerian Child. Nigeria: Edited by The Nigerian Society for Educational Psychologist ltd pp 17
- Ogunniyi, S. O., Akerele, J. A., Afolabi, A. F. and Jatto, M. (2009). *Library Instruction Program for Tertiary Institutions*. Owo: Intanitina Him publishers . In Johnson, A. A. et al. (2017). *Library Service Delivery to Persons with Hearing Impairment in Nigeria*. Nigeria: Intanitina Gimp page 34 - 35
- Popoola, S.O. (2008). The use of information sources and services and its effect on Research output of social scientists in Nigerian Universities. Retrieved from Library philosophy and practice. <http://unilib.ui.edu/lol/popoola.htm> on 25th Jan., 2021
- Roland, J. (2018). What is Dysgraphia? Retrieved on 9th November, 2020 from www.healthline.com
- Roland, J. (2018). Dysgraphia: Symptoms, Causes, Treatment and Management. Retrieved on 28th Dec., 2020 from www.healthonline.com
- Rosenblum, S., Weiss, P. L., and Parush, S., 2003. Product and process evaluation of handwriting difficulties. *Educational Psychology Review*, vol. 15, no. 1, pp. 41-81
- Segal, J., Smith, M., Jaffe-Gill, E., and Cutter, D. (2009). ADD & ADHD in Children: Recognizing the signs and Symptoms. <http://helpguide.org/metal/adhd/addsignsymptoms.htm>.

- The International Dyslexia Association (IDA)(2000). Dysgraphia
- UkpanohMercy E.(2006). Information seeking Behavior and Information Needs of Law Students in University of Uyo. *Journal of Nigerian Library Association* 2(2), p. 27
- Ugbo, E. K.(2017). Understanding Special Needs Education Nigeria: Pee&Gee press. P. 186
- West Virginia University,(2010). Dysgraphia. Retrieved 27th March, 2021, from <http://www.as.wvu.edu/wscidis/dysgraphia.html>