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Professionalising Skills in Teaching Writing to Children with Dysgraphia in Nigeria

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Abstract

Dysgraphia is a condition that causes trouble with writing expression. Dysgraphia is a brain-based issue it's not as a result of a child being lazy. For many children with dysgraphia just holding a pencil and organizing letters on a line is difficult. Their handwriting tends to be messy, and many children struggle with spelling and putting thought on paper. Therefore, this paper explains the concept of dysgraphia, and the types, causes, and characteristics of dysgraphia. It discusses handwriting, its benefits, and pre-writing skills. The paper deals with factors affecting bad handwriting (dysgraphia) which include; errors in writing by hand, family-related factors, and factors related to Children. Furthermore, the paper discussed teaching strategies that can help children develop their writing skills and professional skills that will help teach writing to children with dysgraphia in Nigeria. Lastly, types of educational intervention that can be used to eliminate dysgraphia were extremely discussed. A conclusion was drawn and the paper recommended that; Teachers should be patient and give additional time to children with dysgraphia to complete their writing exercises. They should also determine which skill works best for the child with dysgraphia in the classroom.

Keywords: Professionalising Skills, Teaching, Writing, Dysgraphia.

Introduction

Dysgraphia is a learning disability that affects a person's ability to write. The term learning disability is the name for a group of disorders that affect a person's ability to listen, read, write, speak or do mathematics. Dysgraphia is a deficiency in the ability to write, primarily in terms of hand writing. Crouch and Jakubecy (2007) postulated that, children with Dysgraphia tend not to advance as quickly as other children in school and their handwritten works suffer because of its illegibility. They found that incorrect paper position could lead to cramped fingers, which can directly lead to poor handwriting. Also found that some students focus on their hand rather than on the formation of letters, a Dysgraphia student forgets what he or she meant to express. Dysgraphia can cause low classroom productivity, incomplete homework assignments, and difficulty in focusing attention. Handwriting difficulties can therefore weaken educational progress and interfere with learning of children with learning disabilities (Bamidele, 2017).

Waliter et al. (2015) opined that Dysgraphia interferes with the student's ability to write a composition. Students may forget what they planned to write because they are trying to remember how to form the letters. They may write more slowly and their handwriting may be so illegible that the reader cannot decipher the message. Thus, handwriting affects the thinking ability, knowledge, and ideas of students with Dysgraphia. Bamidele (2017) said that dysgraphia disturbed and interfered with educational progress of students. Poor handwriting can also affect students negatively in terms of completing daily academic assignment and the ability to take note during lessons and frequency of writing. Poor handwriting can lead teachers to misunderstand what is written and prompt them to give low marks to students in examinations. However, Rostami et al. (2014) added that, the interventions for

reducing writing problems can be divided into two general categories: Medical- pharmaceutical intervention and Social- educational psychology intervention

Concept of Dysgraphia

Dysgraphia encompasses difficulties in expressing thoughts in written form, characterized by handwriting problems and neurological underpinnings. It may co-occur with other learning disabilities, leading to illegible handwriting, spatial inconsistencies, and unfinished words. Understanding dysgraphia's multifaceted nature aids in tailoring interventions to individual needs. Richards (1999) defines dysgraphia as a problem with expressing thoughts in a written form. Kumar et al. (2018) describes dysgraphia as handwriting problems, specifically, a partial inability to remember how to make certain alphabet or arithmetic symbols. Torreno (2010) viewed Dysgraphia as a neurological disorder, it is commonly known as a handwriting disability. It can occur with other learning disabilities, such as dyslexia, dyscalculia, attention deficit disorder, or occur by itself. Effects of this condition include illegible handwriting, inconsistent spaces between letters and words, writing inconsistent with lines and margins, and unfinished or missing letters or words. Students with dysgraphia usually hold pens or pencils very close to paper, or hold their thumb over two fingers and write from their wrist. These students can exhibit strange wrist, body, or paper positions, and talk to themselves while writing or concentrate on the hand that is writing.

Types of Dysgraphia

Waliter et al. (2015) identify five (5) types of Dysgraphia as Follows:

1. **Dyslexic Dysgraphia:** With Dyslexic Dysgraphia a person's spontaneously written work is illegible, copied work is pretty good, and spelling is bad. Finger tapping speed (a method for identifying fine motor problems) is normal. A Dyslexic Dysgraphic does not necessarily have Dyslexia. Dyslexia and Dysgraphia appear to be unrelated but often can occur together.
2. **Motor Dysgraphia:** Motor Dysgraphia is due to deficient fine motor skills, poor dexterity, poor muscle tone, and/or unspecified motor clumsiness. Generally, written work is poor to illegible, even if copied by sight from another document. Letter formation may be acceptable in very short samples of writing, but this requires extreme effort, an unreasonable amount of time to accomplish and cannot be sustained for a significant length of time. Writing is often slanted due to holding a pen or pencil incorrectly. Spelling skills are not impaired. Finger tapping speed results are below normal.
3. **Spatial Dysgraphia:** Spatial Dysgraphia is due to a defect in the understanding of space. This person has illegible spontaneously written work, illegible copied work, but normal spelling and normal finger tapping speed. Students with Spatial Dysgraphia often have trouble keeping their writing on the lines and difficulty with spacing between words.
4. **Phonological Dysgraphia:** Phonological Dysgraphia is characterized by writing and spelling disturbances in which the spelling of unfamiliar words, non-words, and phonetically irregular words is impaired. Individuals with Phonological Dysgraphia are also unable to hold phonemes in memory and blend them in their appropriate sequence to produce the target words.
5. **Lexical Dysgraphia:** Lexical Dysgraphia is evidence when a person can spell but relies on standard sound-to-letter patterns with misspelling of irregular words. This is more common in languages such as English and French which are less phonetic than a language such as Spanish. This type of Dysgraphia is very rare in children. Some children may have more than one type of Dysgraphia. Symptoms, in actuality, may vary in presentation from what is listed here.

Causes of Dysgraphia

James (2018) viewed causes of dysgraphia as if dysgraphia appears in childhood, it's usually the result of a problem with orthographic coding. This is an aspect of working memory that allows us to permanently remember written words, and the way hands or fingers must move to write those words. Dysgraphia children have harder time planning and executing the writing of sentences, words, and even individual letters. It's not that they don't know how to read, spell, or identify letters and words. Instead, the brain has problems processing words and writing. In particular, injury to the brain's left parietal lobe may lead to dysgraphia. There is a right and left parietal lobe in the upper part of brain. Each is associated with a range of skills, such as reading and writing, as well as sensory processing.

International Dyslexia Association (2000) opines that, children with Dysgraphia lack not only the fine motor coordination to produce legible handwriting, but some may have a physical tremor that interferes with writing. In most cases, 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). 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 pattern of letter forms.

Characteristics of Dysgraphia

Kumar et al. (2018) revealed that children with dysgraphia were have characterized by those having difficulty converting sounds of language into written form or knowing which alternate spelling to use for each sound. A child with dysgraphia may write their letters in reverse, have trouble recalling how letters are formed, or when to use lower or upper case letters. A child with dysgraphia may struggle to form written sentences with correct grammar and punctuation, with common problems including omitting words, words ordered incorrectly, incorrect verb and pronoun usage and word ending errors. People with dysgraphia may speak more easily and fluently than they write.

The Benefit of Writing by Hand

There are many benefits of hand writing which include;

- i. Handwriting activates the brain
- ii. Handwriting reinforces literacy development
- iii. Handwriting Improves Writing
- iv. Handwriting helps us remember and comprehend
- v. Handwriting boosts creativity

Pre-writing Skills for Children.

Children usually start to draw **straight and circular lines** in the preschool years. The child might combine these lines and shapes to draw people and objects. The child might also start to form letters and numbers. **Plenty of opportunities to draw** will help children keep developing the skills they need for handwriting:

- Keep giving the child chunky crayons and chalk so they develop the finger and thumb grip needed to hold a pencil.
- Encourage the children to trace simple top-to-bottom and left-to-right lines on a page, trying to stay on the lines to the end. Make up a story to add interest to the activity.
- Practice drawing anticlockwise circles that start at the top of the page. This is the pattern we use to form letters.
- As the child gets more control over crayons or pencils, encourage them to draw simple stick figure people. If you put child's pictures on the fridge or wall, they'll feel proud of their work.
- Encourage the child to trace over the letters of their name. At first, you might need to put your hand over the child's hand to help them.
- Help the child learn the alphabet sequence. Try clapping your hands in a steady rhythm while you say the letters together. Doing this with music or singing the alphabet song together can also help.
- Encourage the child to write and draw with other materials. For example, the child could draw lines in sand or mud, trace over letters on signs with their finger and so on.

Factors Affecting Bad Handwriting

Handwriting errors stem from improper technique, familial influences, and physical or psychological impediments. Addressing these factors through ergonomic adjustments, psychological support, and proper instruction can mitigate handwriting difficulties.

Rostami et al. (2014) explained factors affecting bad handwriting as follows:

1. Errors in writing by hand:

- i) Excessive deviation to left
- ii) Excessive deviation to right
- iii) Writing with pressing hard the pencil
- iv) Excessive faded writing
- v) Excessive italic writing
- vi) Excessive spacing

2. Family related factors: Calligraphy is a skill that must be learned. If a child lives in an artist and talented family, he will not suffer from bad handwriting.

3. Factors related to Children: For appropriately writing, the child should physically and mentally be healthy.

- i. Dysfunction of the hand and fingers due to orthopedic injuries:

- A healthy child should be able to grip the pen with three thumb, pointing, and middle fingers. If for any reason, there is a dysfunction of finger, there will be bad handwriting.
- The right median nerve damage can cause disability of the thumb and will disrupt the writing.
- Sores on fingers
- Limitation of motion in the joints of the wrist, fingers, elbow, and arm
- Lesions in the elbow, forearm, and arm
- Burns, fractures, and bruises
- Fingers dysfunction due to neurological disorders
- ii. Psychological factors and its impact on writing: Neurological conditions can cause muscle cramps in children. In other words, if a child's hand muscles contracts after writing a few lines he will not be able to write anymore. In this case, symptoms such as Paratony (contraction of a muscle and then lack of its relaxation) and anxiety-related reactions may be seen in writing. Also, restlessness, hyperactivity, and short attention and concentration span are factors that affect the handwriting of students.
- iii. Left Hand: The bad handwriting of these children is due to not seeing the words.
- iv. Poor seeing condition: Due to poor seeing condition, children get close to the paper. The various forms of bad handwriting. The bad handwriting of children has different forms including:
 - a. Large and small handwriting
 - b. Improper spacing between letters and words
 - c. Messy writing
 - d. Tilted writing of letters and words
 - e. Getting out of the line

Teaching Strategies that help Children's develop their writing skills

Patience, positive reinforcement, and adaptive teaching methods are paramount in assisting children with dysgraphia. Utilizing technology, accommodating writing preferences, and breaking tasks into manageable steps facilitate skill development and academic success.

Knoblauch (2008). Explain strategies of helping children with dysgraphia in the classroom.

- Be patient and positive when practicing handwriting.
- Encourage proper grip, posture, and paper positioning.
- Allow the use of a word processor.
- Use oral exams and allow students to dictate assignments to a scribe.
- Avoid criticisms for sloppiness or illegibility.
- Provide additional time for writing tasks.
- Use writing paper with raised lines.
- Allow students to use a line width that is most comfortable for them.
- Reduce the amount of copying needed to complete an assignment.
- Encourage the use of visual organizers to assist in outlining and brainstorming for extended writing assignments.
- Encourage the student to use hand exercises when he/she becomes fatigued.
- Have students complete writing activities in small steps.

However, Touch-type Read & Spell (2019), outlined nine (9) strategies for coping with dysgraphia; (i) stretch out your hands (ii) learn to touch-type (iii) use cursive vs. print (iv) request accommodations (v) try different paper and pens (vi) make audio recordings (vii) recite word spelling out loud (viii) brainstorm ideas before writing and (ix) use outlines and multiple drafts.

Educational Intervention for Children with Dysgraphia

Early intervention, adaptive tools, and individualized support are critical in mitigating dysgraphia's impact on learning. Incorporating multisensory approaches, motor skill development, and assistive technologies enhance writing proficiency and overall academic performance. Children with Dysgraphia can greatly benefit from early intervention and the introduction of coping strategies including of; use paper with raised lines (for young learners), use paper with large spaces between the lines, try graph paper for mathematics, practice moving one's arm back and forth across a page without a pencil, play with clay and other modeling materials, practice forming letters, practice mazes and connecting the dots, practice making letters with numbered arrows that show the direction of the strokes, don't focus on neatness for assessment, experiment with a wide range of writing utensils; allow the student to choose, change expectations for the amount of writing that is required, identify the point at which the student begins to struggle in a writing assignment, experiment with printing and cursive, practice air writing, provide models of proper organization based on completing one small step at a time, teach students to pull down

strokes when writing instead of pushing up, teach proper posture (no slouching or sitting on knees, keep feet on the ground), practice locking the arm/wrist in a good position, work on proper paper position; hold the paper with the other hand, take writing breaks, such as rubbing hands together for a few seconds, make sure student uses planning and organization strategies such as mapping, try using speech recognition tools, create checklists for proofreading, provide notes for the student so that content isn't lost, assess knowledge in ways other than writing, teach and encourage the use of abbreviations, teach keyboarding skills with correct fingering, don't isolate students by having them stay longer to finish, allow voice recordings. (Touch-type Read & Spell, 2019).

Keifer (2015) pointed out that, Interventions such as explicit handwriting instruction and practice at an early age may help students to develop letter automaticity. Researchers have found that frequent explicit handwriting instruction may help young children learn to develop automatic letter production and retrieve letter forms quickly from memory and may increase the probability that they will become skilled writers. Taura (2016) explained that, in helping learners with handwriting disabilities, the following principles of instruction have been suggested by Kolo (1994) and Smith (2007). (i) It should be pleasant (ii) It must be explicit and (iii) It must be integrated with reading and writing. Additionally, in teaching dysgraphic pupils, the teacher should employ the following strategies: (i) Naming letter names as they practice writing them (ii) Appropriate use of paper (iii) Holding the pencil (iv) Using visual clues (v) Movement activities and (vi) Tracing techniques.

Other intervention for dysgraphia are; Encourage children with dysgraphia to talk as they write. This can give them essential auditory feedback about the words they are transcribing. Let the child choose the paper and writing implement that she will use, since the texture, shape, or other features of these materials can affect how easy it is for her to write coherently. Avoid assigning busywork that includes copying over writing word for word, which can be especially difficult for children with dyslexia. For students with an especially strong case of dyslexia, consider having another student take two sets of notes (either with carbon paper or by using a photocopier on one set of notes) so that the student will be able to concentrate on the information being taught, rather than on the act of writing it all down clearly. In addition, you might want to recommend hand exercises or physical therapy for a student whose hand or arm seems to be excessively sore. (Perles, 2009).

Professional skills for teaching writing to children with dysgraphia in Nigeria

Rostami et al. (2014) explained the techniques that can be useful in helping children to learn writing as follows;

1. On-board exercises: These exercises create the necessary skill before you start writing. Lines and geometric shapes of letters and numbers can be drawn with free movement of shoulder muscles, arms, hands, and fingers on the board.
2. Improving the writing with other devices: drawing or writing by finger on the ash tray or on the sand, flour, clay, and etc. can be used for improving the movement of fingers.
3. Position of body: To prepare for writing, children should sit in a comfortable chair. Their desk must have proper height. The child's feet should touch the ground. He must be able to place both his forearms on the table.
4. Position of paper: the paper should be parallel with the edge of the desk.
5. Pencil grip: Many children who have writing disorder do not know how to grip correctly the pencil. It should be placed between the thumb and middle finger; the index finger is placed on the pencil.
6. Patterns and templates: the geometric shapes of letters and numbers can be provided as cardboard or plastic models.
7. Drawing from the Model: copying from various forms by using thin or transparency papers.
8. Drawing between the lines: Force children to draw parallel lines with different shapes. These two parallel lines can be the plot of a letter. In this case, putting the arrow to show the direction and the spelling of letters will be helpful.
9. Dotted line: Draw a simple scheme. Then, draw the same scheme as dotted line alongside it. Ask the children to complete scheme by connecting the dots together.
10. Lined paper: initially, start with paper that has no line. Then, use a paper that has open and distant lines. It may help the child to write letters correctly.
11. Standard lines: for children who get out of the line in writing, the top and bottom of lines can be taped.
12. Letter from the simple to difficult: for teaching the letters, those letters which are easier should initially be learned.
13. Verbal instructions: providing guidance on writing exercises can help some of the children.
14. Words and sentences: After learning to write simple letters, children should try to write words and sentences.

Conclusion

Improving handwriting requires patience, practice, and tailored interventions. By understanding dysgraphia's complexities and implementing appropriate strategies, educators can empower children to overcome writing challenges and achieve academic success. Embracing individual differences and providing holistic support are essential in fostering a conducive learning environment for all children.

Recommendations

1. Teachers should be patient and give additional time to children with dysgraphia to complete their writing exercise while teaching them.
2. Teachers should be aware that dysgraphia exist in different kinds and some are more common than the other. Therefore, intervention should be Centre on the type of dysgraphia that was found to be much more common among the children.
3. Teachers should also determine which skill works best for the child with dysgraphia in the classroom.

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