

PLIGHTS AND STRUGGLES OF YOUNG LEARNERS WITH DYSGRAPHIA: A CALL FOR HYBRID EDUCATION

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Abstract

Dysgraphia is a learning disability that affects the victim's inability to learn and develop writing skills. It manifests as illegibility and clustered writing. Considering that enough scholarly attention has not been given to this disability, most of its victims do not receive desired support and, hence, face several challenges, which include poor academic performance. The aim of this study is to reveal the challenges faced by learners with dysgraphia in order to discover how they can be assisted with technology. Data were collected from the writings of seven purposively selected secondary school students, who show signs of dysgraphia. Their writings were qualitatively analysed through the lens of Baggette et al. (2023) Dysgraphia and Dyslexia Behavioural Indicator Checklist. Findings reveal that the learners struggle with writing on the lines, spacing words and letters appropriately, and forming letters very well. The study concludes that electronic devices can assist learners with dysgraphia to complete their class written tasks and recommends their introduction into the education system as supports for learners with severe cases of dysgraphia.

Keywords: language learning, dysgraphia, assistive technology, innovation in language teaching and learning.

Introduction

Dysgraphia is a language use disorder that manifests as writing disability. The individuals affected by the disorder find it difficult to form legible letters, spell correctly and space words when they write. They are also too slow or extremely fast in writing (Baggette et al., 2023) and find it challenging to punctuate and compose their essays. The formation of their letters show signs of poor fine motor combination, which, according to Nicolson and Fawcett (2011), make the handwriting below what would have been written by people of their age, level of education, and experience.

The problem of dysgraphia is beyond the case of illegible handwriting because it is not every individual with bad handwriting that has the disorder. Dysgraphia is not only a learning disability but also a neurobiological condition that causes the victims to struggle with expressing their thoughts in writing because they could not develop the skills. Gary et al. (2023) explain that this neurobiological disorder causes a deficiency in the brain, which makes it (the brain) to malfunction. The malfunctioning of the brain in this case hinders the development of fine motor skills that is needed for the development and improvement of the writing skills.

Learners with dysgraphia face several challenges with their academics, employment, and any other endeavour that requires the use of handwritten communication mode to deliver information, ideas, opinions, and messages. This problem is made most difficult because they attend schools designed for 'normal' children since their disabilities are only witnessed as 'bad' handwriting. Dysgraphia learners are intelligent and do not experience mental or psychological problem (Chung et al., 2020). Their neurobiological differences are only witnessed when they write

with pen, pencil, or any other object that requires fine motor skills. This makes them remain undetected, undiagnosed and further exposed to more academic challenges.

Scholars, such as Vouglanis and Driga (2023) and Ahmed (2018), project the use of assistive technology in schools to aid such learners with their academic activities. As the name suggests, assistive technology are those devices that are designed to help people with certain disabilities to complete the tasks they find challenging. In the case of learners with dysgraphia, assistive technology may include electronic devices with speech-to-text, word prediction, and thought-organising software. They can also be devices for note taking and interactive learning. Unfortunately, these devices are hardly found in use in Nigerian schools and as well as schools in other developing countries.

This study assumes that the major reason assistive technology is not fully incorporated in the Nigerian school system is because the existence of dysgraphia and its impact on young learners have not been given enough attention. As a result, its aim is to reveal the plights and struggles of young learners with dysgraphia in order to show how assistive technology can help them through with their educational endeavours. With that, the study hopes to encourage the introduction of hybrid education system in Nigeria, whereby provision will be made for the use of assistive technology for learners with disability in every school.

Use of Assistive Technology to Support Learners with Dysgraphia

The use of assistive technology to support learners with dysgraphia has attracted the attention of several scholars. Among these scholars are Vouglanis and Driga (2023), who examine the use of information and communication technology (ICT) in schools to support learners with dysgraphia and other learning challenges. They identify the use of word processors, online chess and puzzles, interactive whiteboards, digital games, and digital pens as assistive technology for teaching such students. However, they believe that words processors and digital pens are the best assistive technology for them. Scholars, such as Sasidharan and Kotian (2025), oppose the use of these devices in classrooms because they believe that they discourage young learners, including those suffering from dysgraphia, from developing good handwriting skills. Nevertheless, Crouch and Jakubecy (2007) maintain that handwriting drilling does not always help learners with dysgraphia.

According to Ahmed (2018), the use of assistive technology in classroom activities is beneficial because it boosts students' confidence, makes them comfortable and encourage their participation in class activities. These benefits make it more crucial to introduce assistive technology in every school as it will help those with learning challenges to participate in learning activities with little or no limitations. However, financial constraint is one of the major obstacles that is hindering the provision of these devices in every classroom.

Concerning the challenges posed by financial constraint, which prevents most schools in developing countries from equipping their classes with assistive technology, Adebisi et al. (2025) suggest that parents should be encouraged to provide the facilities for their wards. They maintain that if the learners with dysgraphia are encouraged to use them, even at home, they will be able to compliment the absence of such devices in their schools. Put differently, if parents can provide their children with dysgraphia with any assistive technology, they can use them at home to carry out academic activities, which they could not complete at school as a result of the absence

of the device. Nevertheless, this solution fail to capture how the students will complete certain class evaluation activities, such as tests and examination.

Nwikpo (2024) explains that having access to assistive technology may prove ineffective in an education system that does not have provision in its curriculum for its incorporation. King'endo and Njoki (2015) also state that many teachers are not trained to use such technologies in classroom teaching and learning. But Husni et al. (2022) reveal that there are supportive technologies, such as mobile apps, which can be used without undergoing any prior formal training. As Akpan et al. (2025) explain, artificial intelligence has also been incorporated into recent assistive technology in order to enable self-learning and ease of use.

Theoretical Framework

This study adopts Baggette et al. (2023) Dysgraphia and Dyslexia Behavioural Indicator Checklist (DDBIC) as its theoretical lens for examining the writings of selected dysgraphia learners in order to identify and describe their challenges. Baggette et al. developed a checklist that could be used to identify dysgraphia or dyslexia in learners and also explain that the measures can be used during and after writing activities. The behavioural indicators of dysgraphia during writing include the learner's pencil grip, writing speed, pressure and any other observable behaviours. Nevertheless, this study is concerned with examining the writing of dysgraphia learners after they have completed their writing activities. It also focuses specifically on dysgraphia and not on dyslexia. Hence, behavioural indicators during writing as well as the indicators related to dyslexia are not further discussed in this study.

Baggette et al. (2023) postulate that there are five behavioural indicators in the handwritten scripts that can be used to identify learners with dysgraphia. The first of these indicators is atypical writing in relation to the vertical axis. This indicator refers to the abnormal and inconsistent positioning of letters below or above the horizontal line. The second indicator is atypical use of margins or space planning. This is found in cases, where there is an abnormal and inconsistent spacing in relation to the left or right margins. Inversion, the third indicator, refers to graphemes that are formed to look like the mirror of the target letters. The fourth indicator, transposition, refers to the incorrect arrangement of letters in words. This can lead to wrong spelling and the formation of long words. The fifth indicator is the inconsistent sizing of letters, whereby the child writes the same grapheme in different size. These indicators are used to categorise and describe the writing inconsistencies and abnormalities in the writings of selected learners with dysgraphia.

Methodology

The data for this study are collected from seven written tasks of seven learners with dysgraphia, who are in junior and senior secondary schools in Anambra State. The written tasks comprises three examination scripts and four written tasks completed in another research conducted by the researchers. The scripts were scanned to enable easier analysis. Baggette et al. (2023) Dysgraphia and Dyslexia Behavioural Indicator Checklist provided the theoretical framework for qualitatively analysing the scripts to identify the reasons the learners' writings are illegible and difficult to read. The five propounded behavioural indicators of dysgraphia in handwritten texts were used as the theoretical lens to identify, categorise, describe, and discuss the challenges faced by the learners.

Data Presentation and Analysis

The analysis of the selected handwritten texts shows that the affected learners have different behavioural indicators presented on Baggette et al. (2023) checklist. These texts are presented and described on figures 1 to 7. The seven affected learners are coded as Learner A – G to ensure their anonymity.

Fig 1. Text from Learner A; Class = SS 1

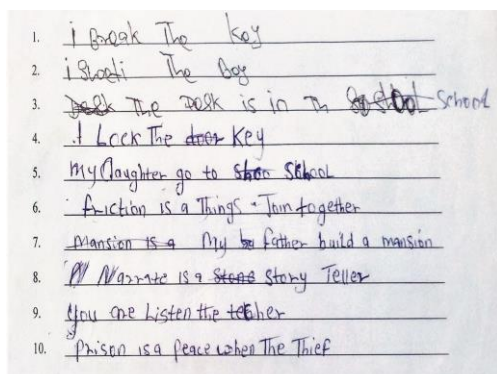


Fig 2. Text from Learner B; Class = SS 1

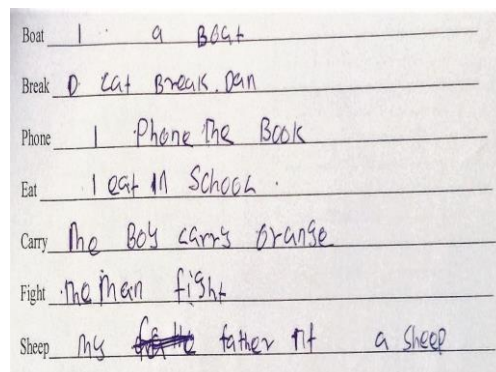


Fig 3. Text from Learner C; Class = SS 2

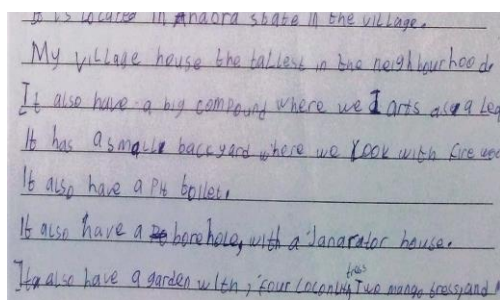


Fig 4. Text from Learner D; Class = SS 1

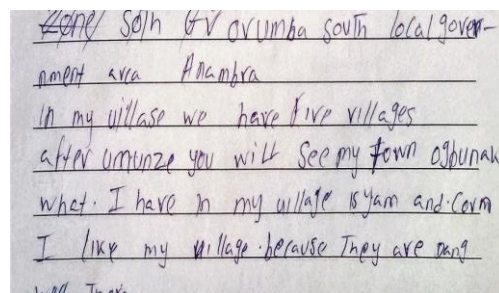


Fig 5. Text from Learner E; Class = SS 1

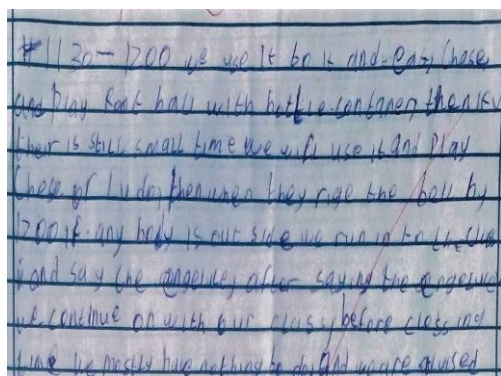


Fig 6. Text from Learner F; Class = JS 3

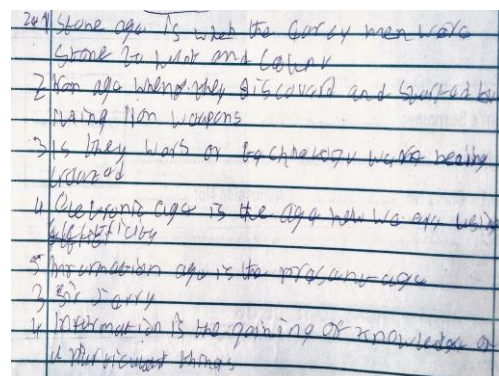
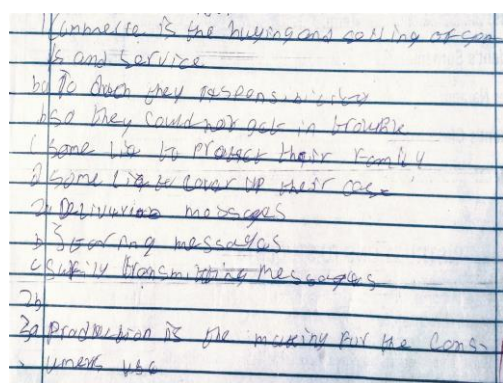


Fig 7. Text from Learner G; Class = SS 1



Cases of atypical writing in relation to vertical axis is found in figs 5, 6, and 7, where the learners positioned words and letters between and under the lines. Another major challenges identified is that of atypical use of margin or space planning. This is found in all the samples except for fig 2. Here, the learners' writing are too clustered that they make it difficult to identify separate words and, hence, read their texts.

Another major problem identified in the samples is inversion, which refers to wrong or mirrored formation of letters. In fig 1, this problem is found in the formation of 'w' (e.g. "sweti", line 2), and capital 'D' (e.g. "Daughter", line 5). In fig 2, the capital letter 'D' (e.g. "D" and "Dan", line 2) and the combination of capital letter 'T' and small 'h' to form the word 'the' (e.g. lines 3, 5, and 6) are not well form. The learners' formation of "Th" share the same form as his 'm', thereby creating confusion while reading. Furthermore, fig 6 shows the wrong formation of letters 'e' (e.g. "early", line 1), 'h' (e.g. "hunt", line 2), 'u', 'o' (e.g. "count", line 2), 'd' (e.g. "discovered", line 3), and 'f' (e.g. "information", line 9). In fig 7, there is wrong formation of 's' (e.g. "selling", line 1) and 'e' (e.g. "delivering", line 7). The poor formation of these letters make the learners' writing difficult to read and comprehend.

Discussion of Findings

The analysis of the selected writings of dysgraphia learners through the lens of Baggette et al. (2023) Dysgraphia and Dyslexia Behavioural Indicator Checklist reveal that the learners face three major challenges while writing. These are challenges with position words and letters on the line, spacing words and letters, and also forming letters appropriately. The writing patterns of these learners agree with the observation of Nicholson and Fawcett (2011) because they show that the learners' handwritings are below the expectations of people in their age group and level of education. Nevertheless, the other two behavioural indicators (inconsistent letter sizes and transposition) are not found in the selected texts.

The composition of the selected texts show that the learners are not unintelligent. This observation aligns with the explanation of Chung et al. (2020) concerning the mental and psychological states and stability of learners with dysgraphia. Unfortunately, their poor handwriting creates the impression that they are not academically brilliant and may further cause their scripts to be graded unfairly. Furthermore, considering the educational levels of these learners, it is obvious that Crouch and Jakubecy (2007) are right to hold that handwriting drills are not always effective ways of helping learners with dysgraphia. This means that Ahmed (2018)

and Vouglanis and Driga (2023) are also right to suggest the use of assistive technology as a way of aiding dysgraphia learners to perform optimally in their studies and other academic endeavours.

Conclusion

Dysgraphia is a neurobiological disorder that affects many learners, who may remain undetected and undiagnosed because they are perceived as individuals with poor handwriting or, worse, unintelligent. However, such learners are not mentally or psychologically inferior to other learners but find it difficult to put their thoughts into writing because their neurological makeup would not enable them to develop and sharpen their fine motor skills, which is needed for writing with pen and paper. As a result, they form words that could not be easily read or understood.

This study has shown that the problems of learners with dysgraphia persist even when they are at the level of education, where handwriting drills would have corrected poor handwriting skills. This observation shows that such individuals and their needs are neglected by school systems, especially in Nigeria and other developing countries. Considering that assistive technology has been proven effective and efficient in enabling such learners to carry out written tasks, it should be incorporated in and by every school in the country. That way, learners with dysgraphia will be able to excel in their academic pursuit.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Teachers should be patient with their students that exhibit symptoms of dysgraphia, especially in marking their tests, examinations and class activities.
2. Teachers can incorporate the use of assistive technology by giving learners assignments that can allow them to use any of the related devices to complete the tasks.
3. School owners should also consider introducing assistive technology into their schools.
4. The government should improve the Nigerian educational curriculum and guidelines to provide rooms for the incorporation of assistive technology in the school system.

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