



CHAPTER 17

EDUCATING CHILDREN WITH DYSGRAPHIA IN NIGERIAN SCHOOLS: THE MISSING GAPS AND ROLE OF PROFESSIONALS

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Introduction

Education is a multi-dimensional concept subject to contextual definition and usage. Here, it is conceived as a broad school-based training process which aims at acquisition and utilization of knowledge, attitudes, and skills for self and national development. It is adjudged as the most effective and reliable process for driving national aspirations and philosophy from print to implementation and meaningful development of a country. This is why the Nigerian government adopted it as an instrument par excellent for personal and National development. International policies and conventions just as the Discrimination against Persons with Disabilities (Prohibition Act), 2018, sees education inclusive of those with disabilities (dysgraphia) as fundamental human rights. From the forgoing, individual and national development is tied to access to quality education for all citizens irrespective of ability or disability. This is very true about special needs education as National policy on Education (NPE) expects its clients to equally contribute their quota to the socio-economic and political development of Nigeria.

Dysgraphia as a special needs condition, etymologically, is derived from two Greek words, dys meaning impaired and graphia writing with hand. Taken directly from its origin, this means, impaired ability to write with hand. In related literature, other terms such handwriting disorder, written expression disorder, handwriting dysfunction, etc are used to refer to the disability (Haning, 2021). The term dysgraphia is preferred and used here for technical reasons. This is partly due to connection of the disorder with many disciplines (Hamdioui, & Vaivre-Douret, 2020). Nicolson & Fawcett, (2011), defined dysgraphia as a disorder of fine motor coordination, proprioception, and visual perception characterized by slow writing and awkward hand writing variables such as letter formation, pen/pencil grip, alignment among others.

It can be defined and explained using a discrepancy model, where a child's hand written samples are below the age, educational level and intelligence to the extent that it is illegible. This model believes that hand writing should be in consonance with the above variables. In a general perspective, it is a sub-type of the other side of exceptionality called learning disabilities with high prevalence. Its



prevalence is estimated to be more than 30% in children across ages, 5% in adults, 30-47% of comorbidity with reading and 90-98% with developmental disorders as well as psychiatric conditions (Peter & Dilip, 2015). This disability manifests in varied ways depending on the age of presentation, level of neurodevelopment and demand of academic expectations.

Within this category, dysgraphia is given less attention and consideration in terms of research, identification/ assessment, intervention and remediation.

There is no consensus in the literature yet as to what is mostly accepted as the definition of dysgraphia as many controversies exist regarding the precise definition (Nicolson & Fawcett, 2011). Primarily, it stemmed from neurological dysfunction, poor fine motor development and coordination and genetic factors. However, these can be subject findings of a particular research as the etiology may vary from one child to the other.

Dysgraphia can exist in isolation but in most cases it comorbid with other neurological disorders such as attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), and dyslexia. Research shows that 90-98% of children with these disorders have extreme difficulties with handwriting (Dohla & Heim, 2016). It affects school performance or learning outcome, personality of dysgraphics, and productivity of staff. Like other disabilities it has cross-cutting edge implications on society. Re-echoing the above, Crouch and Jakubecy, (2007), found that dysgraphia has a negative impact on the success of a child in school. They maintained that many children with the disability are not able to keep up with written assignments, cannot put coherent thoughts together on paper or write legibly. This disability needs to be recognized and remediated before it creates long and lasting negative consequences on the child.

Children with dysgraphia are those who have been professionally, in clinical best practices been identified, assessed and diagnosed as having the condition. Handwriting process and product of these is often characterized by mixture of upper- and lower-case letters, inconsistency letter formation and general illegibility, misuse of line and margin, excessive erasure, poor spatial arrangement, poor sitting posture, paper position and pencil grip (Richards, 1999, Crouch and Jakubecy 2007, Hamdioui, & Vaivre-Douret, 2020). These may vary as a student can manifest some of the variables but not necessarily all of them. APA (2013), reports that 10-30% of children within school age have dysgraphia. This confirms Obani (2006), when it revealed that every Nigerian classroom has 30-40% of children with handwriting difficulties. It was also reported that 80-90% of instructional activities exclude them from active participation.

In Nigeria, with a relatively successful attempt at implementation of inclusive education, every classroom/school has children with dysgraphia. This implies that, government and the school should adequately prepare for quality education of children with dysgraphia by providing necessary intervention. Unfortunately, the education needs of these children are not met, re-enforcing their disabling condition and predisposing them to learning with tears of frustration and



exclusion from effective participation in instructional activities especially those that require handwriting skill.

Hoorn, Maathuis, and Hadders-Algra (2013), report that 30-60% of school day activities are predominantly written tasks which require children to develop fine motor skills necessary for good handwriting. While most children may find this easy, those with handwriting disability find it very difficult to perform any task that involves writing. Research and experience have shown that beyond the classroom, about 70% of daily schedules also require handwriting skill. It is needed to carry out tasks like filling forms, taking telephone messages, writing Memo, minuting documents, minutes of meetings, writing notes to friends and checking on others. The samples of some result of 2023 general elections further re-echo the value of handwriting for national development as some of these result sheets are not legible. This implies that some of these results are not readable by many Nigerians. On the basis of this, Channels TV suggests that Independent National Electoral Commission (INEC) should use Hand Writing Legibility Test (HWLT) to screen adhoc staff before they can be engaged for electoral duties. This explains how essential or important the skill is to self and society to carry out either formal or informal responsibilities.

Education of children with dysgraphia in Nigeria like other exceptionalities have suffered neglect in many areas because of poor funding, attitudes of government, lack of attention on research, and poor implementation of both national and international policies. Provision of quality education for children with special needs generally and dysgraphics in particular can best be described as afterthought of policy makers. This is seen in the exclusion of handwriting as a subject in the school curriculum. In the 60s and 70s when it was included in the school curriculum teachers and didactical materials were provided to consciously teach it. It was then understood that it is also a language skill that should be taught and learned. Presently in Nigeria's school system, except in a few private ones the subject-matter is not mentioned in relation to instruction, yet there are children who have deficiencies in the skill.

The failure of government in the above instance contributes to lack of awareness on the value of handwriting and high prevalence of dysgraphia. The implication of lack of this essential skill is that it affects children's learning process and achievement in life. From the above and as reported by Orim (2018), absence of handwriting in the present school system among other factors accounts for lack of developed handwriting skill in children. Also, Graham, Harris and Fink, (2000), has shown that handwriting is causally related to dysgraphia, and that explicit and supplementary instruction on hand writing are important elements in an elementary programme to prevent handwriting difficulties. Provision of quality education for these clients should be inclusive to the extent that it opens or unlock general curriculum through universal design for learning and accommodations as a model approach to meeting instructional needs of the children as well as improved teachers' productivity in the classroom.



Despite the influence of technology on communication, writing with hand remains a must do, hence it is the king of communication highly prized and valued. This is corroborated by Mann, Hinrichs and Quigley (2015), Crouch and Jakubecy (2007), when they noted that although digital technology is entering today's classroom and learning environments, hand writing remains primarily the king of writing and must be giving its rightful place in the school system. This will guarantee quality handwriting instruction and early identification of children with dysgraphia.

This chapter is therefore, framed to succinctly focus and discuss dysgraphia as a special need condition, education of children with this disability, missing gaps, and role of professionals in education of these clients. It concludes with implications and specific suggestions on the way forward in the education of children with dysgraphia.

1. Dysgraphia as special need condition

Dysgraphia, like the umbrella disability, learning disabilities is seemingly difficult to define due to the controversial nature of the disability. This stemmed from variables that constitute the handwriting and children's written samples. For instance, spacing, size of letters, shape, and pencil grip have no universally accepted format and grasp. Georges (1992) posits that standardized handwriting cannot be said to exist until there is an agreed upon repertoire of formal signs, symbols, features etc. that can be used to reproduce clearly the thought and feelings of people within a language system. However, legibility and other variables are used to determine the quality of the sample. Despite this, scholars attempt to define the disability as yielding results.

It is a dysfunction in communicating the language of the mind with the hand due to poor hand coordination as a result of difficulties in fine motor skills which involve all small muscles within the hand region. This involves more especially those that control precise movements of the hands, wrists, and fingers. It manifests consistently across different modes of writing such as copying from board or text, dictation, and freestyle (Orim, 2021, Sien, Lee, Lee, Min & Ooi, 2022).

National Center for Learning Disabilities (2014), see dysgraphia as a disability that affects the development of complex motor and information processing skills required for written language. NCLD recognizes that hand writing involves more than formation of letters on a paper, it encompasses the development of visual spatial skills, motor skills and language processing skills. Visual spatial skills are needed to differentiate letters, understanding of spacing between letters and words while fine motor skills are required for proper pen or pencil grip and language processing skills to determine what and how your ideas or thoughts are expressed and written down meaningfully. According to Lomurno et al (2023) dysgraphia is one of the neurodevelopmental disorders which affect handwriting process and product. The process here refers handwriting variables



such as the 3ps and product is the written samples which can be determined by Global or holistic and Analytic Evaluation scale.

In DSM-5, American Psychiatric Association (2013), simply put it as a failure to learn or respond to evidence-based instruction after six months. This shares the same understanding with the response to instruction (RTI) model. It sees the disability as difficulties in written expression that is characterized by multiple grammatical or punctuation errors within sentences, poor organization of paragraphs and lack of clarity of ideas. This affects writing skill substantially and quantifiably below the person's age, and education. It interferes significantly with academic, occupational performance, and daily living activities. In Chung, Patel, and Nizami (2020), dysgraphia is a specific learning disorder in writing which describes individuals who despite exposure to adequate instruction, demonstrate writing ability discordant with their cognitive level and age.

The authors advocate the use of model approaches to understanding this special need condition. It is argued that the model approach will enhance the understanding and sharpen the perspectives of dysgraphia. These models among others are, Variables model, Discrepancy model, Response to instruction model and Rubric model. Despite the influence of technology, there are activities that still require pen and paper not Microsoft word and keyboard. The implication of this is that dysgraphia should be given adequate professional and didactical attention it desires. Conscious efforts by stakeholders like government, parents, teachers, schools, NGOs and children should realize the relevance of handwriting and the effect of handwriting disability on the overall development of children, productivity of a nation, personality of individuals.

Dysgraphia exist in types, International Dyslexia Association- IDA (2000), Kay (2007), classified dysgraphia into five types namely, 1) Dyslexia dysgraphia, 2) Motor dysgraphia, 3) Spatial dysgraphia, 4) Phonological dysgraphia, and 5) Lexical dysgraphia. It is important to clarify that no child can have all the subtypes despite the possibility of overlapping in presentation of symptoms and characteristics. In special needs education practices, symptoms and characteristics are cardinal alert to those concerned about the risk factors. They are seemingly confusing but have thin line differences. Symptoms are early warning indicators or red flags which suggest that a child is at risk of having the disability. This will give opportunity to suspect and raise professional concern for in-depth attention, while characteristics are clinically confirmed attributes, and pattern of behavior exhibited by children as result of dysgraphia. The former includes but not limited to task avoidance, very slow writing speed, copying word one by one from board/text, sweating on the fingers with writing, finger cramped and the latter are namely, poor pencil grip, poor sense of alignment and use of margin, awkward position of wrist, arm, posture and paper when writing, poor social interaction skills, low self-esteem, easily frustrated with writing task among many others. Clinical presentation of these is used as evidence of dysgraphia (Orim, 2021, Tannock, 2013).



2. Education of children with dysgraphia in Nigeria

Education remains the most relevant asset across ages a nation can bequeath to its citizenry including those with dysgraphia. It is an organized and purposeful process directed at achieving national aims, philosophy and transmitting knowledge, skills, attitudes and valued character of individuals. Simply put, it is a process of transmitting national values and cultural heritage from one generation to another. Education of children with dysgraphia would mean the same thing however, with provision of specialized learning facilities, personnel and adapted curriculum in line with global trends and best practices to accommodate their education needs.

In Nigeria the road map to education has been encapsulated in the various editions of the National Policy on education with changes where necessary to accommodate global trends in education. In section 10 of 2013 edition, National policy on special education, 2015 and the National policy on inclusive education in Nigeria, 2016 captures the country's aims of special needs education and how it should be operated. This includes among others, "to ensure that all persons with special needs develop at a pace commensurate to their abilities and to contribute to the nation's socio- economic and technological development," (FRN, 2015, 2016, 2016).

From the above, it means that children with dysgraphia have an equal right to access quality education. While the author does not intent to advocate for different education system for these children, it is pertinent to state categorically that, among all categories of disabilities, dysgraphia is the most neglected and least in term of receiving attention. The present fate of children with this disability in schools especially public schools where persons with disability can afford can best be described as hopeless. This is evidence in the gross absence of qualified teachers to teach handwriting, absence of handwriting from the school curriculum and instruction, lack of teachers with knowledge on the disability, and misconception that it is not a disability.

This has undermined the vision and mission of National policy on inclusive education in Nigeria which is to maximize human potentials of persons with special needs and nurture their intelligence, notwithstanding social, economic, political, religious, language and other circumstances, to ensure inclusion of persons with special needs, provide equal opportunity, equity and access in a barrier free environment and have a society with an inclusive education system with unhindered access to quality education and active participation of all learners in the same safe school environment. This is far from the present Nigeria society and education system.

In the spirit of letters of the referenced documents and the exclusion of children with dysgraphia from equal participation in school/classroom activities, handwriting as school subject should be reintroduced and properly taught in all schools at lower and middle basic levels. Coker, and Ritchey (2015), Reutzell, Mohr, and Jones (2017), opined that handwriting instruction is an essential part of a school curriculum for meaningful development of and society. They argued that



handwriting instruction is necessary because it is a language skill that should be taught like others. This is against the widely held misconception that handwriting is an innate ability of every child. Core components of this instruction should include but are not restricted to, handwriting readiness skills, letter formation, ergonomics of handwriting, modes of writing, writing tools, and handwriting disability. In addition to the above, basic accommodations for children with dysgraphia should be part of their education. Effectiveness of this will depend on how committed the government, schools and resourceful teachers are in the discharge of their instructional responsibilities. This is advocated for because of its increasing importance in school and the role it plays in the productivity of a Nation.

3. Missing gaps in education of children with dysgraphia in Nigeria

Missing gaps in this discourse are those fundamental or core issues and variables that would have properly enhanced the teaching and learning efforts of teachers and children with dysgraphia that stakeholders have neglected. They could also be referred to as missing links and challenges to the provision of quality education to the children. This presupposes that education of these clients has prefixes essential to the flow of instruction to the whole process of education necessary for self and national transformation. These among others are discussed below:

No identification and assessment as basis for instruction/intervention: Special needs education is primarily a therapy and response-based discipline. For the purpose of quality service delivery, clients go through a professional identification and assessment process. This process helps to establish the presence or otherwise of a disability in addition to providing base-line data for intervention. While the author appreciates existing assessment tools, it is pertinent to mention that they are alien. The need for home grown assessment tools becomes imperative. Orim, Ewa and Silas (2021), report that absence of local standardized and informal methodology and tools partly contributes to poor quality of education and support services and neglect of the disability. Absence of this foundational process poses a serious challenge to the provision of quality education to children with disabilities.

Misconception and lack of awareness on the disability: In both special and regular schools, children with special needs conditions are enrolled without going through a professional identification-assessment process which is meant to provide base-line data to determine the content of intervention or remediation. For those with dysgraphia, the situation is worse because even among core professionals some seem to either lack awareness of the disability or misconceived it. Parents and regular teachers are not left out in the error of misconception. They believe that the disability will be remediated with age and as the child progresses in school. Obani (2006), reported that, parents and teachers alike do not see symptoms and characteristics of dysgraphia as a source of concern, they ignorantly described the children as lazy and unserious. This can further be traced to the misleading idea that handwriting is innate, children learn and master the skill without training.



Imbalances in designed programmes: A critical surf programmes content for training institutions (Universities, Colleges of Education and polytechnics) raise some concern. For instance, in most Universities in Nigeria where special education and related programmes are offered, their programme content is silent on this disability. Specifically, in the learning disabilities unit, designed courses are lopsided in favour of reading at the expense of dysgraphia and dyscalculia. The trend is becoming phenomenal as it is common even in other tertiary institutions with a mandate to train teachers for the diversity of present and future Nigerian classrooms. The implication of this is that, products of these programmes will lack competence to address issues related to dysgraphia. It also accounts for the dearth of qualified teachers in this area and indirectly contributes to the prevalence of the disability. This prompt concerned professionals to raise thought provoking questions such as, is dysgraphia not a disability? What is the fate of children with this condition in schools? What should be done to address the issues?

Teachers factor in the 2Qs: This refers to lack of teachers both in quantity and quality with requisite competence in diagnosis, assessment, design of intervention for dysgraphics and to teaching handwriting in school. As mentioned earlier, few private schools teach the skill however, these teachers are either graduates of English language, communication Art or other literary disciplines. Managing dysgraphia and teaching handwriting is not a schedule for every graduate as it requires specialized training on the disability profile, identification, assessment, methodology, and basic research skills as recommended by Lerner and Kline (2006). It is trending in schools especially private ones to hire those without professional skills, and lack even general principles of teaching.

Absence of handwriting instruction in the school curriculum: School curriculum represent values, aspirations and skills a society cherish and want to inculcate into children and transfer them from one generation to another. The absence of handwriting can be interpreted to mean, Nigeria does not cherish or value handwriting as language skill. As noted earlier, the present school system is elusive, despite the effort few private schools make to teach it. In such schools, adequate time is not allocated to it and teachers are not professionals in the area. Nigeria's early years of independence witnessed robust attention to handwriting and provision of didactic materials such as textbooks. The authors recalled that one of such texts and workbooks was "New way copy book", it was in series for all classes with dotted lines and children were taught how to write within the lines. The referenced workbook was used to teach many handwriting variables such as, letter formation, spatial features, alignment and the three modes of writing.

The role of professionals in bridging the gaps

Cardinal to addressing challenges in special needs education is collaborative approach, this requires professionals in different disciplines to work in tandem with special educators (Learning Disability specialist) to play their role effectively. These professions are; Occupational therapy, Psychology, Forensic science,



Graphology, Paleography, Pathography, Law and Physiotherapy. It is important for experts in these fields to work together as a team. Specialists in dysgraphia are required to lead this team where necessary to discharge their professional responsibilities as highlighted below;

- ❖ Professionals should develop and validate identification and assessment tools relevant and peculiar to Nigeria circumstances. Affirming this role (Orim, Ewa, and Silas (2021), posit that professionals are therefore, enjoined to develop inter- and intra-professional fusion to standardized both tools and assessment process in the context of this subject matter.
- ❖ Learning disability specialists should develop an effective model of collaboration with other therapy-based disciplines to galvanize social actions in the society for result-oriented advocacy and develop efficient instructional kits for quality education of children with dysgraphia.
- ❖ They should also train and use emerging technology tools as accommodations during instruction and assessment. Although technology to some extent is seen as a threat to the culture of writing by hand, it remains relevant as one of the approaches to managing dysgraphia. Therefore, digitalization of the process is instructive and rewarding especially if it follows the SETT model (Students' needs, Environment, Task, Tool).
- ❖ Key into international events like global handwriting day which comes up January 23rd annually. This will create awareness on hand writing and the implication of its disability. It could feature activities such as rally, mass screening, workshop, seminars etc
- ❖ Develop inclusive programmes for training teachers that will be equipped with competence to professionally manage dysgraphia and meet the needs children with this disability. Deliberate and intentional efforts at expanding training programmes/course content with focus on understanding handwriting as a language skill, management of dysgraphia, evaluation of handwriting, deployment of ICT, and the use of trending practices like accommodations in Nigerian schools.
- ❖ Formation of handwriting clubs in schools. Keller, (2001) advocates for this as an extension of the classroom with a more relaxed and informal atmosphere to learn through activities like play with wikkistix, build with small lego blocks, roll clay between fingers. Role of a professional Occupational therapist in developing activities that will stimulate fine motor skills necessary for good handwriting will be appreciated. This will equally stir up children/members in handwriting. Membership



could make up both those with and without dysgraphia, and those at risk. The club activities will include among others, producing and exchanging model samples as a source of inspiration to develop and learn how to write.

- ❖ Develop and use evidence-based didactical methods, strategies and principles. This should majorly include, bypass strategy to teach handwriting readiness skills, stages of handwriting development, the 3ps (paper position, pencil grip and posture), spatial features etc. Richards (1999), suggested that technology-based accommodations, remedial treatment strategies and compensatory techniques are essential parts of the methodology and should be used.

Implications of the missing gaps in education of children with dysgraphia

Stakeholders such as government, teachers and clients in special needs education generally and dysgraphia in particular are alerted on the following:

- ❖ The quality of education and related services provided for clients in this discipline is proportionally related to the identification-assessment process.
- ❖ Quality intervention for clients is determined by one's knowledge of the disability-dysgraphia.
- ❖ Marketability/employability of products of special education generally and learning disabilities in particular depends among other variables the quality and balance in the designed programme (s).
- ❖ Competent professionals in the 2ps remain the vanguard for intervention and remediation just like quality handwriting instruction will prevent or reduce the prevalence of dysgraphia in the society as well as maximized learning potentials of dysgraphics.

Conclusion

The need or relevance of clear and neat handwriting in and out of school remain sacrosanct in contemporary society despite the influence of technology. This is applicable to the right to access quality education for self and national development. Presently, the attitudes of education managers in Nigeria leaves more to be worried about the unmet needs of children with dysgraphia. This has translated into obvious gaps between the ideal and reality in schools. These perceived gaps re-enforced disabling conditions of dysgraphics and exclude them from effective participation in all learning activities in the classroom.

Considering Nigeria's economic potentials, provisions of national policy on education, National policy on special needs education, National policy on inclusive education in Nigeria and influence of international policy on education of children with special needs, a re-think on their right to education has become necessary. This will require a strong political will of the government to re-introduce



handwriting instruction into school curriculum, secure commitment of schools and effective collaboration of professionals in discharging their roles identified earlier. This demands urgent attention because the prevalence of dysgraphia in schools and the society is worrisome. The effect of this on children's personality development, performance in schools, daily activities and productivity of a nation can be devastating.

Suggestions

Based on the discourse, following specific suggestions are made as way forward in pursuance of quality education for children with dysgraphia in Nigeria;

- ❖ The present school system should be repositioned to recognize and manage dysgraphia as a disability and take responsibility for providing quality and inclusive instruction to all children.
- ❖ Handwriting should be given priority in the curriculum with provision of teachers and support staff in 2qs for effective teaching and learning of the skill.
- ❖ Professionals should through collaborative effort address concern issues such as lack of common acceptable definition (s), methods of assessing sample, and standard norm for handwriting variables among others.
- ❖ International handwriting Day which is celebrated on January 23rd every year should be observed in Nigeria to create awareness on the relevance of handwriting and the effect of dysgraphia on children and national productivity.
- ❖ Schools should be encouraged to form handwriting clubs as means of developing children's interest in handwriting in a more relaxed manner outside the classroom.

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