

LEARNING PROBLEMS OF CHILDREN: A HINDRANCE TO SUSTAINABLE DEVELOPMENT GOAL OF DIGNITY AND PROSPERITY

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Abstract

This study set out to identify and examine learning problems of children related to the three R's in Basic Education, namely, reading, writing and arithmetic, and their prevalence. These problems are Dyslexia, Dysgraphia and Dyscalculia. The paper also examines the United Nations (UN) Sustainable Development Goals (SDGs) with the aim of finding out its provisions that could help to remedy or reduce the effects of learning problems of children. The paper presupposes that the remedy, reduction or effective management of learning problems would lead to achievement of sustainable development, prosperity and dignity of citizens which are essential elements on which the SDGs are based. The definitions, causes and recommended treatments for Dyslexia, Dysgraphia and Dyscalculia are given. Recommendations of interest are mostly in the area of how these children can be helped by teachers who themselves need to have good knowledge of these learning problems.

Introduction

The idea of sustainable development has of recent been popularized by the United Nations' (UN) declaration of the Sustainable Development Goals (SDGs). At the end of the period for achieving the eight (8) widely-publicized Millennium Development Goals (MDGs), the focus of the world shifted to the SDGs, which were to replace the MDGs from January 2016. It would be remembered that the MDGs were enacted by the United Nations in the year 2000 and to last till 2015. The seventieth (70th) UN General Assembly adopted the SDGs as an expansive and ambitious set of development goals that aim to “end poverty in all its forms” by 2030. The SDGs are a set of seventeen (17) goals comprising 169 targets and indicators for reducing poverty and improving environmental sustainability (United Nations, 2015). According to the UN Secretary-General, Ban Ki-moon, the SDGs are based on six essential elements namely dignity, people, prosperity, our planet, justice and partnership.

The seventeen SDGs are:

- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns
- Goal 13. Take urgent action to combat climate change and its impacts
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

The fourth goal above is directly related to education, that is, to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. One of the targets of this particular goal is to “build and upgrade education facilities that are child, disability, and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all”. It must be pointed out that children with learning problems who are not helped to minimize their effects will have serious difficulties prospering and having self-esteem or dignity.

Purpose of the Paper

This paper seeks to answer the following questions.

1. What are learning problems?
2. What are the major learning problems of children in our society?
3. What is their prevalence?
4. How can they be remedied or reduced?
5. How will the implementation of the SDGs help in reducing the prevalence and effects of learning problems of children?

What are learning problems?

The term “learning problems” is rather generic and covers a whole range, group or class of conditions which tend to hinder learning with ease. Some terms used frequently in this area of research include learning disorders, learning disabilities, learning difficulties and learning challenges (Isangedighi, 2004).

The terms, learning challenges and difficulties are almost as general as learning problems. Learning disorders and disabilities are more specific and often used interchangeably. Learning disabilities can be seen as manifestations of learning disorders.

The main focus of this paper is the learning problems, directly related to the so-called 3Rs in basic education – Reading, wRiting and aRithmetic. These are Dyslexia (developmental reading disorder), Dysgraphia (developmental writing disorders) and Dyscalculia (developmental arithmetic disorders). Other related learning problems include Attention Deficit Disorder (ADD), Attention Deficit Hyperactive Disorders (ADHD), Math anxiety and Genetic Disorders such as Fragile X Syndrome, Gerstmann’s Syndrome and Turner’s Syndrome.

The Prevalence of Dyslexia, Dysgraphia and Dyscalculia

Learning problems occur in people of all backgrounds and intellectual levels. Oginni and Olugbuyi (2014) in a study in Ekiti state found that majority of secondary school students have moderate levels of dyslexia when it comes to learning of non-science subjects. Osisanya *et al.* (2013) observed that dyslexia was prevalent among pupils with deficits in learning English language and Mathematics and not peculiar to gender. In Nigeria, studies on dyslexia, dysgraphia and dyscalculia are rather in their infancy (Ikediashi, 2012).

In USA, 15 – 20% of the population are reported to have a language-based learning disability. Of the students with specific learning disabilities receiving special education services, 70-80% have deficits in reading. Dyslexia is the common cause of reading, writing and spelling difficulties. Dyslexia affects males and females nearly equally as well as people from different ethnic and socio-economic backgrounds (IDA, 2012). Since definitions and diagnoses of dyscalculia are in their infancy and sometimes contradictory, according to the British Dyslexia Association (BDA, 2015), it is difficult to ascertain a prevalence, but research suggests it is around 5%. However, the association further notes that “mathematical learning difficulties” are not in their infancy and are very prevalent. Prevalence in the UK is at least 25%.

What is Dyslexia?

BBC (1992) English Dictionary simply defines dyslexia as difficulty with reading caused by a slight disorder of the brain. In the words of the International Dyslexia Association (IDA, 2012),

“Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often

unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge”.

According to Isangedighi (2004), Dyslexia are difficulties with reading and comprehending written language expression, dysgraphia are difficulties in writing ways that make sense while dyscalculia are difficulties in understanding calculations or mathematical concepts.

Signs of Dyslexia given by International Dyslexia Association (2012), are –

- i. Delayed ability to speak
- ii. Poor self-expression
- iii. Failure to fully understand what others are saying
- iv. Difficulty organizing written and spoken language
- v. Difficulty learning new vocabulary, either through reading or hearing
- vi. Slowness in learning songs and rhymes
- vii. Poor spelling
- viii. Slow reading as well as giving up on longer reading task
- ix. Difficulty understanding questions and following instruction
- x. Difficulty recalling numbers in sequence
- xi. Trouble distinguishing left from right
- xii. Trouble learning foreign languages.

Isangedighi (2004) also lists the following as signs of learning disabilities at the primary school level; Having difficulty in –

- i. Understanding new vocabulary
- ii. Reading accurately
- iii. Using full sentences in communication
- iv. Remembering stories told or new information learned
- v. Having peer interaction
- vi. Oral and verbal language expression writing
- vii. Having grasp of what is read
- viii. Voice control
- ix. Being organized
- x. Keeping to or remembering deadlines

Causes and Remediation of Dyslexia

The International Dyslexia Association (IDA, 2012) notes that the exact causes of dyslexia are still not completely clear. However, anatomical and brain imagery studies show differences in the way the brain of a person with dyslexia develops and functions. Dyslexia is not due to either lack of intelligence or desire to learn. Within appropriate teaching methods, students with dyslexia can learn successfully. Ikediashi (2012) suggests that workshops on dyslexia children need to

be held among school teachers in Nigeria to help them understand these unique pupils the more and thus modify their learning needs appropriately.

What is Dysgraphia?

According to the International Dyslexia Association (IDA, 2012), dysgraphia means difficulty with handwriting. There are many different kinds of dysgraphia. Some individuals with dysgraphia have handwriting that is often illegible and shows irregular and inconsistent letter formations. Others write legibly, but very slowly and/or very small. Dysgraphia can interfere with a student's ability to express ideas as expressive writing requires a student to synchronize many mental functions at once. These include organization, memory, attention, motor skill and various aspects of language ability.

Dysgraphia can be broadly classified into three major types namely, dyslexic dysgraphia, motor dysgraphia and spatial dysgraphia.

In dyslexic dysgraphia, spontaneously written text is illegible, especially when the text is complex. Oral spelling is poor, but drawing and copying of written text are relatively normal. In motor dysgraphia, both spontaneously written and copied text may be illegible, oral spelling is normal. In the third category, spatial dysgraphia, people display illegible writing, whether spontaneously produced or copied. A measure of fine-motor, finger tapping speed is normal but drawing is very problematic.

Signs of Dysgraphia

The National Centre for Learning Dyslexia (2010) gives signs of dysgraphia as follows:

- i. A strong dislike of writing and/or drawing
- ii. Problems with grammar
- iii. Trouble writing down ideas
- iv. A quick loss of energy and interest while writing
- v. Trouble writing down thoughts in a logical sequence
- vi. Saying words loud while writing
- vii. Leaving words unfinished or omitting them when writing sentences.

Causes and Remediation of Dysgraphia

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. 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 letter forms (IDA, 2012).

Based on recommendation of IDA (2012), prevention, remediation and accommodation are all important elements in the treatment of dysgraphia. Many problems can be prevented by early training. Young children should learn to form letters correctly. Muscle training and over-learning good techniques help to remedy

dysgraphia. Individuals can benefit from a variety of modifications and accommodations such as the use of a word processor which by-passes the complex motor demands of handwriting, learning the keyboard by the alphabet method, touch typing, using different writing tools, among others.

What of Dyscalculia?

Dyscalculia is sometimes called mathematics learning disability or mathematics disorder. Dyscalculia is generally perceived as a specific learning difficulty for mathematics, or, more appropriately, arithmetic. The American Psychiatric Association (2013) defines it as a specific learning disorder that is characterized by impairments in learning basic arithmetic facts, processing numerical magnitude and performing accurate and fluent calculations. Usually, these difficulties must be quantifiably below what is expected for an individual's chronological age, and must not be caused by poor education or daily activities or by intellectual impairments. The British Dyslexia Association (BDA, 2015) notes that definitions and diagnoses of dyscalculia are in their infancy and sometimes contradictory.

The signs of dyscalculia look different at different ages and tend to become more apparent as children grow older. According to BDA (2015), the typical signs/symptoms of dyscalculia/mathematical learning difficulties are the person –

1. Has difficulty when counting backwards.
2. Has a poor sense of number and estimation.
3. Has difficulty in remembering 'basic' facts, despite many hours of practice/rote learning.
4. Has no strategies to compensate for lack of recall, other than to use counting.
5. Has difficulty in understanding place value and the role of zero in the Arabic/Hindu number system.
6. Has no sense of whether any answers that are obtained are right or nearly right.
7. Tends to be slower to perform calculations. (Therefore give less examples, rather than more time).
8. Forgets mathematical procedures, especially as they become more complex, for example 'long' division.
9. Addition is often the default operation. The other operations are usually very poorly executed (or avoided altogether).
10. Avoids tasks that are perceived as difficult and likely to result in a wrong answer.
11. Weak mental arithmetic skills.
12. High levels of mathematics anxiety.

Causes and Remediation of Dyscalculia

According to Morin (2014), researchers do not know exactly what causes dyscalculia. However, they have identified certain factors that indicate it's a brain-based condition and the possible causes are genes and heredity (Fletcher, 2007), brain

development (Ranpura, 2013), environment (Shalev, 2004) and brain injury. For children with dyscalculia, it is unclear how much their brain differences are shaped by genetics and how much by their experiences. There is no one specific test for dyscalculia. Several steps involving medical examination and tests by educational professionals need to be combined for proper diagnosis of the problem.

Sustainable Development Goals and Learning Problems

Looking at the SDGs, especially as they relate to education, there is little direct reference to learning problems. However, one of the targets of Goal 4 which refers to education is to build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all. In other words, the SDGs recommend that learning facilities should ensure that people with disabilities including learning disabilities should be taken into cognisance in planning and implementation of educational policies. The specifics of this provision can only be worked out by experts concerned. It can be deduced that if this provision is successfully implemented, their effects on society would be remedied or reduced.

Conclusion and Recommendations

The paper has identified and focused on dyslexia, dysgraphia and dyscalculia as learning problems which relate most directly to the basic education objectives of reading, writing and arithmetic. As far as Nigeria is concerned, there appears to be a little information on these learning problems so far. These problems do not seem to attract much interest of researchers in our locality.

The prevalence, definitions, signs, causes and remediation of the three learning problems have been examined based mainly on literature from USA and UK where various associations and professional bodies with special interest in learning problems have been in existence over the years. Even there, they claim that research into this area is still in its infancy.

What these authors would consider as recommendations arising from this paper are varied and numerous. They can be found mainly in the sections of causes and remediation of each learning problem discussed. Secondly, there is need for government to endeavour to implement the SDGs especially as they relate to education. Educational psychologists in the country should have more interest in this area of research and generate ideas that can help alleviate the negative effects of these learning problems. Workshops should also be organized to educate teachers especially at the primary and secondary levels on these learning problems.

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