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Application of Artificial Intelligence on Managing Communication Disorder in A Developing Society

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Abstract
This study examined the application of artificial intelligence on managing communication disorder in a developing society. This study adopted Diffusion of Innovation as the theoretical framework. After review of related literature, survey research design used to conduct investigation on the problem of this study. The population size was 706,588 drawn from the residents of Ohaukwu LGA, Ezza South LGA and Ohaozara LGA of Ebonyi State while its sample size of 385 was gotten via Australian Calculator formula. A multi-stage sampling technique was applied to select respondents who were administered with questionnaire as instrument of data collection. The findings show that: majority of the respondents did not know what Artificial Intelligence is all about, most of them indicated that their level of experience about AI and its usage in managing communication disorder in the state was low,majority of the respondents indicated that there was low extent of application of AI in communication disorder in the state and most of the respondents indicated that AI can be applied in managing communication disorder in the area of hearing and dictating errors and making corrections. This study recommended that awareness creation about Artificial Intelligence and Communication Disorder should be made by informing, educating and enlightening Ebonyi people on them through social media, mass media and interpersonal communication channels like Facebook, radio, television and one-one physical communication. Also, the government should partner with AI experts on how to apply AI in managing communication disorder in a developing society like Ebonyi State.
Keywords: *Application, Artificial Intelligence, Communication Disorder, Developing Society.*

1.1 Introduction

Artificial intelligence (AI) is one of the recent developments in the communication and other aspects of human endeavours in the contemporary world. In a developing society like Nigeria, AI is an emerging field with rapid growing awareness through studies so as have proper understanding of its nature and application where needed. Artificial intelligence refers to the building and utilization of human intelligence in machines programmed to think and learn like humans. This encompasses various technologies, including machine learning, natural language processing, computer vision, and robotics (Russell & Norvig, 2016). One distinct characteristic of artificial intelligence is the attribute of

humanized intelligence in machines. It is an advanced stage of computer technology and a displacement of machine attributes with human computerized intelligence.

Artificial Intelligence is developed to become a branch of computer science that develops programs to stimulate human intelligence in machines. It is an extension of digitization that brought AI into the realm of possibility (Ogbuoshi, 2021). The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Artificial Intelligence (AI) refers to the field of science aimed at providing machines with the capacity of performing functions such as logic, reason in creativity, emotional knowledge, and self-awareness. It is the capability of making rational thoughts and applying such thoughts to proffer solutions to mental or physical problems. It comprises two concepts: intelligence and artificiality. Intelligence is the ability to learn facts and skills for efficient and effective execution of tasks. On the other hand, artificiality refers to synthetic replication of original concept or process (Encatta, 2009).

Artificial intelligence has affected all facets of society especially in this era of technological advancement. The effort of AI experts is to create a replication of human intelligence by assigning human voices, actions and reasoning abilities to machines. It is an aspect of robotics in which machines are designed to perform human actions. It is also called machine intelligence because; intelligence is demonstrated by machines in contrast to natural intelligence displayed by humans and other animals (UK-RAS White Papers, 2017). While the nature of intelligence remains elusive, AI capabilities currently have far-reaching applications in such areas as information and communication processing, computer gaming, national security, electronic commerce, and diagnostic (Danesi, 2009).

In this study, the area of concern is on the application of AI in managing communication disorder. Communication disorder is a form of disorder that affects somebody's ability to communicate. It ranges from simple sound substitution to inability to understand. Communication disorder is one of the most prevalent symptoms in young children with developmental delays (Adegbiji, Olajide, Olubi, Ali & Adeniyi, 2019). These disorders can affect one's ability to speak, listen, understand, or use language appropriately. At their core, communication disorders interfere with an individual's day-to-day interactions, academic performance, and social engagement. Children with these disorders might experience difficulties in acquiring language skills at a typical developmental rate, whereas adults might develop these challenges as a result of injury, illness, or certain conditions. The severity and specific nature of these disorders can vary widely; for instance, while one individual might have a slight stutter, another might struggle to form complete sentences or understand complex conversations.

In developing societies like Nigeria, research shows that a communication disorder is any condition that impairs a person's ability to produce, understand, or comprehend spoken, written, or nonverbal language, including speech, language, and hearing. Common forms include hearing impairment, speech and language delays, stuttering, and disorders affecting the social use of language. A significant factor in Nigeria is the high prevalence of hearing impairment, often linked to causes like infection and inadequate obstetrics management, with hearing issues frequently leading to delayed speech and language skills. Communication disorder is one of the most common childhood disabilities worldwide with limited relevant researches in low-income countries, such as Nigeria (Nwanza, 2013).

Based on the above scenario, this study

was carried out to investigate the application of Artificial Intelligence on managing communication disorder in a developing society. Nigeria as a developing society in the world record assessment record has been described as one of the developing countries of societies with many communication issues.

1.2 Statement of Problem

In a study by Adegbiji, Olajide, Olubi, O. Ali & Adeniyi (2019), it was revealed that there is high prevalence of communication disorder which involves difficulty in the physical production of speech sounds, difficulty in understanding or using language, including issues with expressing oneself and comprehending others. Studies in Nigeria show that there is high prevalence of speech and language disorders in African countries like Nigeria than in high socio-economic countries. With the introduction of Artificial Intelligence in communication, there ought to be studies carried out with a view of addressing the increasing prevalence of communication disorder especially among children as Etumnu & Azubuike (2024) note that Artificial intelligence has affected all facets of human endeavour, including communication especially in this era of technological advancement.

Thus, the problem of this society rests on the prevalence of communication disorders in the society without research evidences on the application of Artificial Intelligence to arrest such. It is therefore as a result of this ugly gap of uneasy prevalence of communication disorder in developing society like Nigeria and precisely, a state like Ebonyi state that this study was carried to ascertain the application of AI in managing communication disorder.

1.3 Research Objectives

The general objective of this study is to ascertain the application of AI in managing communication disorder in a developing society. Specifically, this study has the following objectives:

1. To ascertain the level of understanding of Artificial Intelligence by the Ebonyi people.
2. To find out major forms of communication disorder in the application of AI in managing communication disorder in Ebonyi State.
3. To find out ways in which AI can be applied in managing communication disorder in Ebonyi State.
4. To determine the extent of application of AI in managing communication disorder in Ebonyi State.

1.4 Research Questions

Based on the research objectives, the following research questions were formulated:

1. What is the level of understanding of Artificial Intelligence by the Ebonyi people?
2. What are the major forms of communication disorder in the application of AI in managing communication disorder in Ebonyi State?
3. What are the ways in which AI can be applied in managing communication disorder in Ebonyi State?
4. What is the extent of the application of AI in managing communication disorder in Ebonyi State?

1.5 Significance of Study

This Study has two significant benefits to the users. These are practical and theoretical benefits. On the practical benefits, the people of Ebonyi State would be intimated with the existence and application of Ai. This study will be useful in handling communication problems among two or more relevant bodies. It will also serve as a working document in the implement issues of communication disorder in a developing society like Ebonyi State.

On the other hand, this study will serve as a source of reference, a secondary source of

information and library (either online or hardcopy) material useful in related areas of this study. Thus, scholars, researchers and policy makers can find it very useful in solving problems its kind so as to move the society forward.

2.1 Literature Review

Under the review of related literature, related concepts such as Artificial Intelligence, communication disorder and managing communication disorder through AI where reviewed. The review is presented under the follows subheadings:

2.2 Concept of Artificial Intelligence

Artificial intelligence is otherwise known as machine intelligence is a variant of computer technology that replicates human intelligence in machine-coded forms Ognuoshi, 2021). The Fourth Industrial Revolution is the era of Artificial Intelligence (AI) which is an interface between machine and human intelligence. Modern smartphones are equipped with a high degree of intelligence that is capable of preempting human responses and executing sophisticated tasks. John McCarthy is credited with the articulation of Artificial Intelligence in 1955. AI holds that certain aspects of learning and other domains of intelligence are simulated by machine through programming and hardware approach. Artificial intelligence describes the work processes of machines that would require intelligence if performed by humans. Its forms include (a) weak artificial intelligence in which a computer stimulates intelligence by investigating cognitive processes and (b) strong artificial intelligence which permits advanced intellectual, self-learning processes of computers through the use of adequate software/programming and automatic networking with other machines.

Artificial intelligence is the theory and development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns. In the study by Anyanwu & Iheonye (2024), it was discovered that Artificial Intelligence is a new technology that was made possible through the fourth industrial revolution which took place in the mid-2010s. It is characterized by the integration of digital, biological and physical innovations and the convergence of technologies such as artificial intelligence, gene editing, robotics and 3D printing. Some of Artificial intelligence applications are: advanced web search engines, recommendation systems, understanding human speech, generative or creative tools and competing at the highest level in strategic games. Artificial intelligence has very high capacities and capabilities and has been strengthened and upgraded compared to the past (Zavaraki, 2024).

John McCarthy first used the term "artificial intelligence" in 1956, and since then, it has developed into a disciplined area of research and engineering. The era is also marked by the automation of manufacturing processes and the use of advanced technologies such as augmented reality, machine automation and advanced analytics (Russell, 2019). It is often used to describe machines that mimic human cognitive functions such as learning, understanding, reasoning or problem-solving (Russell & Norvig, 2016). In contrast to the natural intelligence displayed by humans, AI serves as a machine intelligence or intelligence demonstrated by machines. There are eight well-known definitions of AI that can be used based on the context, design, and application of AI. AI has standard or non-standard voice recognition systems used in artificial intelligence, for instance, can be classified as computational intelligence or the study of the design of intelligent agents.

In recent years, AI has been offering civilization novel ideas and revolutionary possibilities. The accuracy of rational agents

for common speech-recognition software has increased. Remarkably, no human programming is required to allow Machine Learning (ML) algorithms to carry out their responsibilities after the first training of the input algorithms (Etumnu & Azubuike, 2024). Because of the availability of large datasets, the increased availability of vast computational power, and the decreased costs associated with accessing and storing large amounts of data, recent developments in Deep Learning and algorithm development have further enhanced standard speech recognition systems (Ark, 2018).

Though Artificial Intelligence is a new development, its awareness and acceptance are progressing rapidly through the computer and machines empowerment to solve problems and simulates human intelligence. As a technology, it has the tendency of performing task that originally needed human ability and intellectual capacity to function. As a system application, it has the potentials of developing AI algorithms of learning from available data, making predictions based on the data collection through analysis processes (Anyanwu & Iheonye, 2024). Anyanwu (2021) reveals that there are many dimensions in which AI has been viewed and studied. One of such is that Artificial Intelligence as a discipline adopts both machine learning and deep learning algorithms through the use of Artificial Neural Networks (ANN) that helps to facilitate learning from huge amounts of data. Artificial Intelligence applications have a wider spectrum of usage ranging from speech recognition, computer vision, supply chain, customer service, anomaly detection as well as weather forecast. Anyanwu (2021) expressed that artificial intelligence applications is the ability of computer system which has undergone training to execute functions similar to how human brain will execute or in some cases better.

2.3 Communication Disorder

Communication is a universal concept that affects all living things especially human beings. It is defined as the process used to exchange information with others which includes the ability to receive, comprehend, produce and express messages. The National Institute of Deafness and Other Communication Disorder (2009) reveal that communication involves interchange of thoughts, opinions, or information by speech, writing, or signs from a sender to a receiver via some media towards a mutually accepted goal or direction. In secular society, communication also occurs through a variety of channels, modalities, including non-linguistic and verbal processes.

Communication disorder (hearing, swallowing, speech and language) is a form of disorder that affects somebody's ability to communicate which ranges from simple sound substitution to inability to understand (Udeme, Olisaemeka & Edozie, 2015). Communication disorder is one of the most prevalent symptoms in young children with developmental delays. It is usually identified around 2–3 years of age. In high socio economic countries, the prevalence of both speech–language disorders range from 0.5% to 7% (decrease with age) and hearing loss range from 0.05% to 0.23%. This portrays lower than that found in low socio economic countries (Konadath, Chatni, Lakshmi & Saini, (2017)).

The literature and the statistical information on the magnitude of communication disorders among Nigeria children and other developing countries are scarce. This study was aimed to determine the prevalence, socio-demographic features, a etiology, types of communication disorders seen among under 18 – year old children attending our facility. Communication disorder is dominant among patients living in urban setting than rural setting (Sallam, 2011). Health care facilities with screening

program are easily accessible among urban dwellers. Educated parents are well informed with good jobs and financially capable of caring for their wards.

The causes of communication disorders can vary significantly. They may include developmental issues: Some children might not develop speech and language skills at the same rate as their peers. Brain injury: Accidents or trauma that injures the parts of the brain responsible for speech can lead to disorders. Genetic factors: Some disorders, like familial dysautonomia, have a genetic basis. Environmental: Lack of exposure to language or exposure to multiple languages can sometimes lead to delays. Neurological: Conditions such as stroke, brain tumors, or degenerative diseases can cause speech and language disorders. Factors that might increase the risk of developing a communication disorder include: Premature birth, Family history of communication disorders, Low birth weight, Brain injuries or infections and Exposure to drugs or alcohol during pregnancy. Complications can include social isolation, academic struggles, or mental health challenges due to inability to communicate effectively.

Research shows that high prevalence of communication disorder is common in children of educated and civil servant with early presentation. Mothers detect communication disorder in children more than father. Father are engaged by various activities in searching and caring for family needs while mothers have more close contact with the children. Communication disorder is associated with hearing impairment and swallowing disorder in our findings (Adegbiji, Olajide, Olubi, Ali & Adeniyi (2019). These may be a co-morbid problem. Prevalence of hearing impairment was higher among patients with language disorder and speech disorder this may be due to study of paediatric groups (Konadath Suma, Jayaram, Sandeep, 2013). The prevalence of speech and language disorders in African countries like Nigeria is significantly higher than in high socio-economic countries. Studies in Nigeria show a high prevalence of communication disorders among children.

2.4 Empirical Review

Almutairi (2024) carried out a study to identify the characteristics and outcomes of peer-reviewed literature on the application of Artificial Intelligence (AI) in assessing speech, language, and voice disorders (SLVDs) published in English from 2000 to 2024, we conducted a scoping review following the Arksey and O'Malley framework. Several databases were searched for peer-reviewed journal articles using the terms "artificial intelligence," "language," "speech," and "voice disorders" in their abstract or title. A total of 21 articles were included. Key findings are as follows: all papers were published within the past five years, each of the 21 reviewed articles found AI to be an efficient tool for assessing SLVDs, notably, geographical and research design gaps were identified and it was observed that AI has not been applied to evaluate some aspects of speech-language disorders (SLDs). Additionally, the review underscores advancements and limitations in utilizing AI for diagnosing SLVDs. It stresses the necessity for more extensive research, especially in underrepresented regions and disorders.

Adegbiji, Olajide, Olubi, Ali, & Adeniyi (2019) did a study on communication disorders among children in a developing country, Nigeria .The aim of this study was to determine the prevalence, socio-demographic features, an etiology, types of communication disorders among under 18 years children attending our facility. This was a prospective study conducted in ear, nose and throat department in a Nigerian university teaching hospital, from June 2014 to May 2019. Data

were obtained by using pretested interviewers assisted questionnaires from consented patients and analyzed using SPSS version 20.0. Results showed that prevalence of communication disorder was 16.1% and that there was high prevalence of communication disorder which was associated with high prevalence of hearing impairment. The major causes were infection with inadequate obstetrics management. This result suggested for further research.

Elhennawy (2024) carried out a study on the impact of Artificial Intelligence (AI) in the assessment and treatment of communication disorders. The present study investigates how artificial intelligence (AI) and machine learning (ML) can significantly affect the assessment and treatment challenges concerning communication disabilities. It highlights the importance of early and precise diagnosis of communication disabilities, which are frequently impeded by clinical and genetic variability. It illustrates how AI and ML are reshaping healthcare, and as such providing examples of their effectiveness in diagnosis, assessment, as well as treatment plans revealing case history and therapeutic plans like the effective treatment programs.

Further, the study demonstrates how AI can quickly and accurately diagnose patients and analyze large data sets in an efficient manner. It also explores how AI tailor's treatment plans for different communication disorders, providing the ML and deep learning (DL) to develop personalized treatment plans. The development of health databases and the possibility for tailored treatment recommendations are two areas with which speech and language therapy successfully deal as a result of the integration of AI with human health care.

Theoretical Framework

Theory of Diffusion of Innovation is the theoretical framework of this study. It was created by Everett M. Rogers in 1962. As this theory explains, new innovations in information technology typically gain popularity and acceptance after a slow but steady trickle-down effect (LaMorte, 2019). This shows that people in a certain social system can come across and adopt a new idea, practice, or product; they spread it to other people in that system or to bigger groups outside of the original population. Accordingly, the processes of concept perception, adoption, and dissemination are usually long-term and require creativity because people in a social system don't always embrace new ideas at the same time. The time it takes to complete this process, called adopter classification, might vary greatly depending on the circumstances.

The relationship and connection between this study and Innovation of Diffusion Theory is outstanding. This theory is very appropriate for this investigation because the use of artificial intelligence for managing communication disorder in a developing society is innovative. As such, this study attempted to investigate how artificial intelligence can be used managing communication disorder in a developing society, using Ebonyi State as a case.

3.1 Research Methodology

The study used the survey research design to investigate the issue under discourse. Survey is a suitable option to probe about the traits, tastes, views, or beliefs of a particular group of people. This study would have studied the entire Ebonyi State, but for the purpose of using a manageable population size, its population of study was purposively chosen from three Local Government Areas of Ebonyi State namely; Ohaukwu, Ezza South and Ohaozara Local Government Areas. These three LGAs were chosen to represent the three geopolitical zones of the state popularly known as Senatorial zones. According to City Population online projected population report (2024), Ohaukwu

had 291,300, Ezza South had 195,388 and Ohaozara had 220,588 and these figures put together gave 706,588 as the working population of this study.

Sample Size Determination

The sample size of this study was determined by using a sample size online calculator developed by Australia's National Statistical Service (NSS). In using the Australian Calculator, the following data was imputed and the calculator automatically generated the sample size of the study.

The variables supplied include:

Confidence level = 95percent
Population = 706,588
Confidence interval = 0.05
The sample size was 385.

Based on the sample size of the study, the researcher ascertained the sample size of each of the three LGAs in Ebonyi State by calculating the proportional value of population size. This guided in determining the number of copies of questionnaire to be administered in each of the three (3) LGAs. The approximated calculation is shown below:

Ohaukwu LGA = 157
Ezza South LGA = 105
Ohaozara LGA = 123
Total of approximated figure **= 385**

Instrument of Data Collection

Questionnaire served as the instrument for data collection. The questionnaire was designed in a closed ended questions format. The questionnaire was structured and used to elicit or generate quantitative data from the respondents regarding their opinion and knowledge of the research subject matter. The questionnaire is designed in a simplified form.

The instrument of data collection was administered to the respondents by the researcher with the help of a research assistant. The research assistants helped to ensure that the questionnaire was administered to the respondents, filled and returned appropriately. This study used descriptive statistical method to analyze data collected from the respondents. In doing this, the researcher inputted data collected from the questionnaire into the computer using the Statistical Package for Social Sciences (SPSS) data editor of the 6th edition to ascertain the percentage and frequency values of responses in tables.

4.1 Presentation of Results

After administration of questionnaire, follow-up and collection of data from a total of 385 respondents were done, 10 of them declined while responses from 375 were returned and analyzed. The results were presented as follow:

Table 1: The level of understanding of Artificial Intelligence by the Ebonyi people

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High Extent	1	.3	.3	.3
	Average Extent	54	14.4	14.4	14.7
	Low Extent	301	80.3	80.3	94.9
	No idea	19	5.1	5.1	100.0
	Total	375	100.0	100.0	

Source: Field Survey, 2025

Response to the knowledge level of Artificial Intelligence was presented in table 1. 301(80.3%) indicated 'average extent', 54(14.4%) indicated 'low extent', 19(5.1%) indicated 'no idea' and 1(0.3%) indicated 'high extent'. The mean response ($\overline{X}$ = 2.77) is above the mean score ($\overline{X}$= 2.50) for acceptance. It showed that the result of the statement was accepted.

Table 2: Major forms of communication disorder by the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Interpreting	204	54.4	54.4	54.4
	Writing	125	33.3	33.3	87.7
	Reading	31	8.3	8.3	96.0
	Translating	15	4.0	4.0	100.0
	Total	375	100.0	100.0	

Source: Field Survey, 2025

Table 2 above shows responses to the statement: major communication disorder by the respondents showed that 204 (54.4%) respondents indicated 'interpreting while 125 (33.3%) indicated writing. Those who indicated 'reading' were more 31 (8.3%) than those who indicated "translating" that were 15 (4.0%). Their responses where further subjected to the analysis on mean score which showed 2.84 ($\overline{X}$= 2.84). This was above the mean acceptance level 2.5 ($\overline{X}$ = 2.5). Since this was above the acceptance level, the statement was accepted. This meant that respondents accepted the statement.

Table 3: Ways in which AI can be applied in managing communication disorder

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assessing and Interpreting speeches	35	9.3	9.3	9.3
	Speaking and translating messages	66	17.6	17.6	26.9
	Hearing and dictating errors and making corrections	211	56.3	56.3	83.2
	All of the above	63	16.8	16.8	100.0
	Total	375	100.0	100.0	

Source: Field Survey, 2025

Entries in table 3 above show response to the statement: effect of AI application in managing communication disorder in Ebonyi state. Majority, 211 (56.3%) indicated 'hearing and dictating errors and making corrections' while 66 (17.6%) indicated 'Speaking and translating messages. Thirty-five (35) respondents representing (9.3%) said assessing and interpreting speeches. Their mean response ($\overline{X}$ = 2.83) were further subjected to a mean comparison with the mean acceptance level of 2.5 (= 2.5). It was subsequently accepted. This means that most of the respondent indicated that the ways in AI application in managing communication disorder in Ebonyi state was on hearing and dictating errors and making corrections of messages communicated.

Table 4: Extent of respondents knowledge on the application of AI in managing communication disorder in Ebonyi State

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High extent	35	9.3	9.3	9.3
	Moderate extent	66	17.6	17.6	26.9
	Low extent	211	56.3	56.3	83.2
	Not Sure	63	16.8	16.8	100.0
	Total	375	100.0	100.0	

Source: Field Survey, 2025

Entries in table 4 above show response to the statement: extent of AI application in managing communication disorder in Ebonyi State. Majority, 211 (56.3%) indicated 'low extent' while 66 (17.6%) indicated 'moderate extent. Thirty-five (35) respondents representing (9.3%) said every woman. Their mean response ($\bar{X} = 2.83$) were further subjected to a mean comparison with the mean acceptance level of 2.5 ($\bar{X} = 2.5$). It was subsequently accepted. This means that extent of AI application in managing communication disorder in Ebonyi State is at low extent.

5.1 Discussion of Results

Research question one was designed to ascertain the level of Ebonyi people's understand of Artificial Intelligence. The outcome of data analysis revealed that majority of the respondents-Ebonyi people did not know what Artificial Intelligence is all about. This means that AI is really a new idea, innovation and concept. In the study conducted by Anyanwu (2021), reverse is result whereby the author observes that greater percentage of his respondents strongly agreed to have an understanding about the new technology and its functions ability as AI is increasingly becoming part of our daily lives. Many individuals, parents and professionals in Nigeria can be said to have a limited understanding of how AI can be effectively utilized for communication disorders

Result of analysis of question two onmajor forms of communication disorder experienced by the respondents. Majority of themindicated 'interpreting followed by those that indicated writing. Those who indicated 'reading' and “translating” followed too. These showed that the respondents witnessed various forms of communication disorder about AI and its usage in managing communication disorder in the state. The import of this finding is that the issue of communication disorder needs proper explanation for the understanding of the respondents. However, in the study of Adegbiji, Olajide, Olubi, Ali, & Adeniyi (2019), communication disorder seemed to more children's affair which impact on a child's social and emotional skills, cognitive skills and the acquisition and mastery of academic skills in school. The disorders may be congenital, developmental or acquired in children. They may also arouse from hearing impairment, brain damage, organic and non-organic causes.

As regards to Ai and communication order, AI tools could be used by parents and speech therapists to support children with speech impairments by providing better communication aids and strategies. A study by (Ezeaka & Ochuba, 2024) provides hope that AI can assist in the delivery of news after cross-checking such news issues. This means that it can be used for fact-checking that is process of verifying the factual accuracy of

questioned reporting and statements. AI-powered instruments can improve communication campaigns' efficacy

The findings in accordance with research question three that sought to ascertain the possible ways in which AI can be applied in managing communication disorder, the result obtained revealed that majority of the respondents indicated that AI can be applied in managing communication disorder in the area of hearing and dictating errors and making corrections. The implication of this result is that the most knowledge that the respondents had on using AI to manage communication disorder was on the aspect of hearing and dictating errors and making corrections. This means that the respondents viewed AI as a communication tool that can be used to improve hearing of information or messages as well as indicating and correcting error in communication. Against this finding, Elhennawy (2024) in his study provides a comprehensive exploration of the recent influence of AI on speech and language therapy and offers a number of tools that help patients achieve therapy objectives. It was found that AI tools can, indeed, help by offering useful data regarding practice performance and achieve better speech outcomes

On the result of question four on the extent of AI application in managing communication disorder in Ebonyi State, findings of this study showed that majority of the Ebonyi people indicated that there was low extent of application of AI in communication disorder in the state. The implication of this result is that very few residents of Ebonyi State knew what it means to apply or use Artificial Intelligence as a tool of managing communication disorder. However, since majority of the respondents did not have knowledge cum experience of communication disorder, it equally affected their understanding of applying it (AI) in managing communication disorder. In a related study, Anyanwu & Iheonye (2024) observe that AI is a system application that has the potentials of developing ways of learning from available data, making predictions based on data collected and providing useful information and communication that can applied to solve a problem.

5.2 Summary of Results

After data analysis and discussion, the summary of the results showed that:

1. Majority of Ebonyi people did not know what Artificial Intelligence is all about.
2. Many of Ebonyi people indicated that their level of experience about AI and its usage in managing communication disorder in the state was low.
3. Majority of the Ebonyi people indicated that there was low extent of application of AI in communication disorder in the state.
4. Majority of the respondents indicated that AI can be applied in managing communication disorder in the area of hearing and dictating errors and making corrections.

Conclusion

This study was found to be a virgin one to ascertain the application of AI in managing communication in a developing society, using Ebonyi state as a case. The inquiries and findings made revealed a high level of negative results whereby majority of the respondents held that there was no or low level of AI in managing communication disorder in Ebonyi state. This clearly reveals that AI is a new technology that has not been known or applied in the developing societies. It is still a story that has not been materialized. Thus, if AI is actually for the developing societies like Nigeria and Ebonyi State in particular, this study has exposed the knowledge and application weakness of AI due to its non-existence.

Therefore, this study on application of AI in managing issues like communication disorder should provoke relevant agencies connected to AI to design ways of extending the AI technology and experiences to the developing societies. Thus, there is low knowledge level of the technological tool or machine called AI which directly affects its proper understanding and usage or application in handling communication disorder.

Recommendations

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

1. Awareness creation about AI should be made on informing, educating and enlightening of Ebonyi people through social media, mass media and interpersonal communication channels like Facebook, radio, television and one-one physical communication.
2. Mass media and public awareness approaches should be carried out to educate the public on communication disorder
3. Government should partner with AI experts on how to apply AI in managing communication disorder in a developing society like Ebonyi State.
4. The mass media channels such EBBC and social media platforms like Facebook should be used by AI experts to demonstrate how to apply AI in managing communication disorder among individuals and groups in the State.

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