



LANGUAGE SKILLS, ECHOIC RESPONSES AND ACADEMIC ACHIEVEMENT AMONG CHILDREN WITH AUTISM SPECTRUM DISORDER IN SPECIAL NEEDS SCHOOLS IN RIVERS STATE, NIGERIA

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ABSTRACT

This study investigated the relationship between language skills, echoic responses and academic achievement among children with autism spectrum disorder in special needs schools. The study adopted a correlational survey design. Two research questions and two corresponding hypotheses were raised and formulated to guide the study. The population for this study consists of all 80 male and female pupils diagnosed with ASD in seven special needs schools in Rivers State. The research instrument used in this study is a modified four-point Likert type scale questionnaire titled “Language Skills, Echoic Responses and Academic Achievement Questionnaire” (LSERAAQ). Cronbach Alpha statistics was used to estimate the reliability of the instrument and the reliability coefficients of 0.81 for language skills, 0.78 for echoic responses and 0.92 for academic achievement were obtained. Data was collected and analysed using simple regression, mean and standard deviation and independent t-test at 0.05 alpha level of significance. From the data analyzed, it was found that language skills significantly relates to academic achievement while echoic responses, have no significant relationship with academic achievement among children with ASD in special needs schools. Based on these findings the following recommendations were made: Teachers, caregivers, and parents of children with autism spectrum disorder (ASD) should encourage language skills by cutting down on the potential for echoic repetition through the use of visual cues in asking choice questions instead of open-ended questions such as the “Wh” questions as this will help them learn how to answer questions without much repetition.

KEYWORDS: *Autism Spectrum Disorder, Language skills, Echoic responses, Academic achievement.*

INTRODUCTION

Academic achievement is commonly measured with examinations that assess important procedural knowledge such as skills, and declarative knowledge such as facts which student have learnt (Engel and Bennett as cited in Kpolovie et al. (2014)). It is used interchangeably with academic performance and indispensable in every formal educational institution. It also pertains to scholarly human activities conducted in a formal educational environment. Academic achievement has been the subject of much scrutiny in past years and the inclusion of students with disabilities in schools has complicated matters as these students may not always participate or be included in the traditional measures of achievement (Thurlow et al., 2005).

Autism Spectrum Disorder (ASD) has for decades been identified as a lifelong neurodevelopmental disorder with profound implications for intellectual ability and psychological functioning, general ability, and life outcomes in many children and families around the world (Howlin et al., 2014). In Nigeria, ASD affects about 200,000 to 380,000 families and is regarded as one of the top three disorders affecting children in the country (U.S. Diplomatic Mission Nigeria, 2015). The word “autism” has its origin in the Greek word “autos” meaning “self”, which is why children with ASD are often described as being self-absorbed and socially withdrawn, with a limited ability to successfully communicate and interact with others. ASD begins in early childhood and lasts throughout a person’s life, although symptoms may improve over time in most individuals. While some children on the autism spectrum show signs of future problems within the first few months of life, others may not show symptoms until 24 months or later. Most children on the autism spectrum seem to develop typically until around 18 to 24 months of age and then stop gaining new skills or lose the skills they once had (Centers for Disease Control, 2014).



According to Keyton (2011), communication is the activity of conveying information through the exchange of ideas, feelings, intentions, expectations, perceptions or commands by speech, writing, gestures and other means between two or more participants. Communication is an essential part of everyday life and encompasses the exchange of messages, thoughts, feelings, and information from one person to another. For an exchange to occur, someone has to express an idea (expressive communication) and at least one person has to receive and understand it (receptive communication). While these processes are interrelated and function together to create a communication exchange, each requires its own set of sub-skills and needs to be considered separately. Communication skills are made up of three (3) different components namely; Social communication, verbal communication and non-verbal communication. However, the focus of this study is on verbal communication which comprises language skills, echoic responses alongside academic achievement among children with ASD.

Language is one of the biggest barriers confronted by children on the spectrum with approximately one third of individuals remaining nonverbal throughout their lives (Seymour, 2017). According to Lal and Sanghvi (2015), the major difficulties faced by children are in encoding meaning relevant to conversations, meaningful interpretation of verbal messages, semantic confusion specific to temporal sequencing, and poor sensing of semantic relationships. In social interactions, language serves as a representation of one's thoughts, feelings, perceptions, ideas and beliefs, allowing one to be able to convey these to others. Successful communication involves the effective and appropriate collaborative processing of receptive (i.e. listening and reading) and expressive (i.e. speaking and writing) language, with the different language domains such as phonology (i.e. the speech sound patterns in a language), morphology (i.e. the smallest meaningful units of a language), syntax (i.e. grammar or the way words are combined to form sentences in a language), semantics (i.e. word meanings), and pragmatics (i.e. language use in social context and production of discourse) (Chi, 2019). Common language patterns in those with autism include repetitive or rigid language, narrow interests and exceptional abilities, uneven language development, and poor nonverbal conversation skills (Shannon in Seymour, 2017). These communication patterns align with findings revealing that the main source of language impairment in people with autism spectrum disorder (ASD) is not related to semantics but to pragmatics which is the use of language appropriate to a situation (Seymour, 2017).

One of the most common features of language in autistic children is echolalia, the apparently meaningless repetition of words that they have heard from somewhere else. The two main types of echolalia are known as immediate and delayed. While immediate echolalia refers to repeating back a word, phrase, or sentence that someone has just said, delayed echolalia is quoting utterances heard sometime in the past. The creativity that children will often use by adding different voice animations to go with these repetitions is additional proof that echolalia is a way of communicating and not a meaningless babble (Sterponi & Shankey, 2014). Studies have revealed that individuals with autism use echolalia as a means of relationship building (Stiegler, 2015). However, not all researchers view this phenomenon in the same manner. While Sterponi and Shankey (2014) and Wetherby and Prizant in Seymour (2017) propose that children with ASD are using echolalia to serve a variety of communicative functions, such as requesting, protesting, affirming, and declaring, Foux *et al.* in Seymour (2017) describe it as "an inappropriate language strategy". This disparity between the language aptitudes of those with autism and those without autism only continues as they age. While most preschool age children are mastering syntax, forming narratives and advancing their conversation skills, children with autism spectrum disorder (ASD) are often struggling with short phrases, poor listening and attention skills, and appearing frustrated and withdrawn from conversation (Ducharme, 2016; Hult & Howard, 2006).

Many children with autism spectrum disorder (ASD) are not enrolled in schools, are denied access to health care in appropriate institutions, and are kept hidden and isolated from social gatherings due to sensory, emotional, and information overload, which often trigger withdrawal. These reactions have been misconstrued as contagious and has resulted in children being isolated from their neurotypical peers in classrooms with little or no attention. Also, children on the spectrum are usually targets of bullying and physical or sexual abuse than their neurotypical peers because they often lack the communication skills needed to report abuse, and even when they do, their reports are often judged to be untrue. Poor language skills contribute significantly to the ever increasing academic needs of children with ASD and its alarming consequences owing to poor level of awareness about ASD, marginalization and discrimination, negative cultural beliefs and attitude implies that there is a critical need for accurate identification and diagnosis, increased awareness and creation of environments that support communication across a range of learning experiences in order to facilitate effective communication skills, successful integration into the society, development and maintenance of meaningful relationships for children on the spectrum. It is against this backdrop that the researchers sought to determine how imitation and visual support relate to academic achievement among children on the spectrum.



The aim of this study was to investigate the relationship between language skills, echoic responses and academic achievement among children with ASD in special needs schools. In specific terms, the study achieved the following objectives:

1. Determined the extent to which language skills relates to academic achievement among children with ASD in special needs schools.
2. Ascertained the extent to which echoic responses relates to academic achievement among children with ASD in special needs schools.

Two research questions were posed to guide the study.

1. To what extent does language skills relate to academic achievement among children with ASD in special needs schools?
2. To what extent does echoic responses relate to academic achievement among children with ASD in special needs schools?

These two hypotheses were tested at 0.05 level of significance.

1. There is no significant relationship between language skills and academic achievement among children with ASD in special needs schools.
2. There is no significant relationship between echoic responses and academic achievement among children with ASD in special needs schools.

METHODOLOGY

This study adopted a correlational survey design to investigate the relationship between language skills, echoic responses and academic achievement among children with autism spectrum disorder in special needs schools. The population for this study consists of all 80 male and female pupils diagnosed with ASD in seven special needs schools in Rivers State, Nigeria. The study adopted the census sampling technique. To have a well-characterized sample of children with ASD, participants were deemed eligible for the current study if they had received a diagnosis on the autism spectrum and met the criteria as stated in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), a manual for assessment and diagnosis of mental disorders. Also, only children who were between the ages of 5 and 12 years were included in the study. The research instrument used in this study was a four-point Likert type scale questionnaire titled "Language Skills, Echoic Responses and Academic Achievement Questionnaire" (LSERAAQ). The instrument is divided into three sections. Section A contains demographic information while section B contains two themes namely imitation containing seven items and visual support containing seven items. The third section contains an adapted instrument of Blank, Rose and Berlin (1978) known as Blanks Levels of Language which was modified to fit the current research setting (Nigeria), this led to the reduction in the number of items, which were originally 40 items to 20 items implying that the researchers removed five items from each level of language as contained in the instrument. The instrument also contains a picture scene to guide pupil's response to the adapted instrument. The instrument was constructed in the pattern of a four-point Likert scale of Always (A), Often (O), Sometimes (S), and Never (N) which was scored as 4, 3, 2 and 1. Cronbach Alpha statistic was used to estimate the reliability of the instrument and the following reliability coefficients of 0.81 for language skills, 0.78 for echoic responses and 0.92 for academic achievement were obtained. Data was collected and analysed using simple regression, mean and standard deviation and independent t-test at 0.05 alpha level of significance.

RESULTS

The results of the data analysis are presented in the tables: Data analysis was done in relation to the research questions and hypotheses.

Research Question 1: To what extent does language skills relate to academic achievement among children with ASD in special needs schools?

Hypothesis One: There is no significant relationship between language skills and academic achievement among children with ASD in special needs schools.

**Table 1: Simple regression analysis of language skills with academic achievement among children with autism spectrum disorder (ASD) in special needs schools.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.651	5.295		2.011	.048
Language skills	1.880	.310	.566	6.062	.000

P < .05 Level of Significance, N=80; Dependent Variable: Academic Achievement; Predictors: (Constant), language skills

The result in table 1, shows that the beta value for language skills is .566, which reveals that about 56.6% of language skills relates with academic achievement among children with autism spectrum disorder in special needs schools. Its significance can be seen from the associated t-value of 6.062 which is statistically significant at 0.05 alpha level. This implies that language skills have significant relationship with academic achievement among children with autism spectrum disorder in special needs schools, therefore the null hypothesis is rejected.

Research Question 2: To what extent does echoic responses relate to academic achievement among children with ASD in special needs schools?

Hypothesis Two: There is no significant relationship between echoic responses and academic achievement among children with ASD in special needs schools.

Table 2: Simple regression analysis echoic responses with academic achievement among children with autism spectrum disorder (ASD) in special needs schools.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	33.056	6.883		4.802	.000
Echoic response	.515	.421	.137	1.225	.224

P < .05 Level of Significance, N=80; Dependent Variable: Academic Achievement; Predictors: (Constant), echoic responses

From the result in table 2, the beta value for echoic responses is revealed to be .137, which means that about 13.7% of echoic responses relates with academic achievement among children with autism spectrum disorder in special needs schools. Its significance can be seen from the associated t-value of 1.225 which is statistically not significant at 0.05 alpha level. This implies that echoic responses have no significant relationship with academic achievement among children with autism spectrum disorder in special needs schools, therefore the null hypothesis is retained.

DISCUSSION OF FINDINGS

Findings from the data analysis obtained from respondents for answering research question one and testing hypothesis one, indicated that there is significant positive relationship between language skills and academic achievement among children with ASD in special needs schools. This means that language skills has influence in ensuring academic achievement among school children. The findings of this study affirms that children with ASD can achieve academic success when efforts are being made to ensure that children improve in their ability to use language skillfully, which may be difficult but not impossible. This finding is in line with Niederer (2013) who carried out a study to investigate the improvement of language acquisition of autistic children through implementing non-verbal communication in teaching methods. The findings of the study revealed that non-verbal communication helps children with autism learn new words more accurately and therefore can be incorporated by teachers in their teaching methods. Also in line with finding is a study carried out by Vanegas (2019) aimed at investigating academic skills in children with ASD with monolingual or bilingual experience. The results from the findings revealed that children with ASDs with monolingual experience had higher scores



on word reading skills when compared to children with ASDs with bilingual experience. However, a different pattern was found for numerical operations, with children with ASDs with bilingual experience outperforming children with ASDs with monolingual experience. No differences were found between groups on spelling skills. Hence, bilingual experience does not negatively affect the development of academic skills in children with ASDs.

Result from the analysis of responses of respondents in regards to research question two and hypothesis two, shows that there is no significant relationship between echoic responses and academic achievement among children with ASD in special needs schools. This means that the independent variable (echoic responses) has no significant relationship with academic achievement. The present findings suggest that while echoic responses, which are a major source of difficulty for children on the spectrum, were observed among children used during the study, no significant relationship with academic achievement was found. The result of this finding differ from a study carried out by Sterponi and Shankey (2014) on rethinking echolalia with emphasis on repetition as interactional resource in the communication of a child with autism. The result from this finding revealed the presence of echolalia in children with ASD. Another finding that differ from the present finding was carried out by Grossi et al. (2013) on the differential nature of induced and incidental echolalia in autism. Results from this finding showed that echolalia occurred in both experimental situations.

RECOMMENDATIONS

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

1. Teachers, caregivers, and parents should encourage language skills by cutting down on the potential for echoic repetition through the use of visual cues in asking choice questions instead of open-ended questions such as the “Wh” questions as this would help them learn how to answer questions without much repetition.
2. Counsellors, teachers and caregivers should encourage language skills by profiling the relative strengths and weaknesses in communication for children on the spectrum and creating individualized educational plan that emphasizes speech and language skills, life skills, cognitive skills and academic success. This could be a helpful guide in enhancing children’s academic strengths and fortifying areas of weakness.

CONCLUSION

Language skills and echoic responses are important tools used in communication exchanges to express feelings, thoughts and needs, hence its relevance in achieving success academically. From the findings made in this study, language skills have significant relationship with academic achievement while echoic responses, age and gender have no influence on academic achievement among children with ASD in special needs schools.

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