Comparison Between Normal and Hearing-Impaired Children's Academic Achievement

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Abstract **- Education has long been seen as the most promising path to a more prosperous future. The engagement of citizens and social classes in learning to live in a sustainable manner is the basis of sustainable education growth. In educational policies and discourses, academic achievement is often mentioned and discussed. Many efforts have been made to resolve the issue of low academic achievement, and several reasons that explain academic achievement have been found. When opposed to academic success, educational attainment encompasses several dynamic factors that are associated with the method of advancing across all stages of schooling. The inclusion of disabled children in regular schools has been the subject of substantial educational study. It provides resources for collaboration and social contact for all students, as well as academic and social advantages. Hearing damage, whether mild, moderate, or extreme, often has a major negative influence on academic success. And a single ear deficiency has a major effect on academic success. The aim of this research was to learn more about the academic performance of hearing impaired and regular students.**

Index Terms **- Hearing -Impaired Children, Academic Achievement, Education etc.**

I.INTRODUCTION

Education is the method of transforming a person into a responsible, purposeful, imaginative, artistic, and useful individual. It seeks to maximize an individual's inherent potentials so that he may be beneficial to himself and the community in which he finds himself. Disability is described as a change in the form or function of the human body, as well as behavior limits and involvement restrictions. People with disabilities are recognized as a disadvantaged community of people all over the world. People with hearing disability are classified as deaf or hard of hearing (D/HH) depending on the degree of their hearing loss, which may be irreversible or fluctuating and vary from moderate to severe deafness.

According to the Centers for Disease Control and Prevention (CDC), approximately 15% of children aged 6 to 19 have hearing damage in one or both ears of at least 16 decibels. Around.1% of the population suffers from extreme hearing loss. "In most Zimbabwean educational schools, students with hearing impairment (HI) face difficulties. The bulk of schools that enrol them do not provide for their special needs.'' Any of their difficulties are not identified before it is too late, and as a result, these students' hearing losses pose a barrier to their learning. Hearing loss may have two impacts on educational performance: first, OM and hearing loss can last from infancy through adulthood; and second, hearing loss during crucial stages of cognitive growth in early childhood can trigger problems with auditory processing abilities. In the above situation, a child's hearing can improve, but auditory processing issues continue to obstruct learning, especially in noisy classrooms.

Hearing aids, earphones, public address systems, or personal FM transmitter/receiver units will enable certain hearing-impaired students to participate through amplification by hearing aids, earphones, public address systems, or personal FM transmitter/receiver units. It is often better to review a class's expectations with the student to see if there are any opportunities to modify the materials so that the student can partake in what might be an enjoyable learning opportunity for those involved. Several studies also shown that students with auditory impairments (SHIs) have lower overall academic achievement than hearing students.

II. REVIEW OF LITERATURE

Rahil Mahyuddin et al (2011)The effect of learning styles on high school students' academic performance in Iran was examined. In eight public schools in Tehran, the Kolb Learning Style Inventory (1999) was administered. Each student's average test scores in five subjects, including English, science, math, history, and geography, were measured and used as an indicator of academic achievement. A total of 285 Grade 10 students were chosen at random as participants in this research. The findings of the tests of variance indicate that the four learning types lead to a statistically substantial differential in academic performance among Iranian students [F (3, 285) = 9.52, p.05]; in fact, the mean scores for the converging and assimilating groups are substantially higher than the diverging and accepting groups.

Santhi S Prakash (2012)Teachers' attitudes toward the inclusion of children with hearing disability in schools were measured and compared in this analysis in the Indian state of Andhra Pradesh. The inclusion of disabled children in regular schools has been the subject of substantial educational study. It provides resources for collaboration and social contact for all students, as well as academic and social advantages. The assessment of teachers' behaviors toward integration continues to be a reliable way to gauge the program's progress. Despite the fact that this has been extensively investigated in several nations, the data remains inconsistent. If the adoption of inclusive education is to progress, the study concludes that intervention to promote more optimistic attitudes among teachers is needed. That also has ramifications about how rules and regulations are drafted regarding adolescents with hearing impairments.

Dr. P. U. Ekeh and O. T. Oladayo (2013)This is an ex post facto research designed to determine the extent to which regular (normal) pupils and special needs pupils (visual and hearing impaired) in inclusive and non-inclusive classrooms differ in their academic achievement. Data of the study were obtained from the 2010/2011 promotion examination scores records of students, as maintained in the schools under study. Mean (x), Standard deviation (SD) and t-test were used to answer the research questions and test the null hypotheses respectively. Results got after data analysis indicated that significant difference existed in the academic achievement of regular and special needs students in inclusive classroom setting, in favor of the regular pupils; significant difference existed in the academic achievement of special needs pupils in inclusive and non-inclusive classrooms, in favor of those raised in inclusive classrooms; regular pupils raised in inclusive and non-inclusive classrooms differed significantly in their academic achievement, in favor of those in inclusive classrooms.

Mr John Mpofu and Mr Sylod Chimhenga (2013)In most Zimbabwean educational schools, students with hearing impairment (HI) face difficulties. The bulk of schools that enroll them do not provide for their special needs. Any of their difficulties are not identified before it is too late, and as a result, these students' hearing losses pose a barrier to their learning. This research paper seeks to illustrate the problems that students with hearing loss experience, as well as provide recommendations about how teachers might better solve these concerns. The report would use a detailed case study approach to gather input from students with HI and address the difficulties teachers face when educating students with hearing loss by focus group conversations. We will explore approaches and ideas for teachers at King George IX Memorial to create positive learning methods that will inspire these students. Data was gathered by focus group meetings and interviews with students with HI and instructors. When teaching deaf or hard of hearing pupils, instructors may use a variety of instructional aids. A instructor may use sign language, finger spelling, and voice reading to help students learn. In addition to overhead projectors, bulletin boards, computers, and televisions with captions on the wall, teaching equipment may include overhead projectors, bulletin boards, computers, and televisions with captions on the screen.

Peter James Kpolovie et al (2014)The magnitude of the relationship and prediction that students' involvement in learning and attitude toward school have on their academic performance was determined using a multiple prediction design. From the 14459 students who enrolled for the 2013 May/June Senior Secondary Certificate Examination (SSCE) in Bayelsa State, a stratified random sample of 518 was drawn using a table of random numbers. With SPSS, a multiple regression mathematical method was used to assess the tenability of each null hypothesis at 0.05 alpha. The predictor variables were shown to have a strong association and numerous estimation of students' academic success, accounting for 21.60 percent of the variance in students' academic results.

As a result, growing students' engagement in learning and their attitude toward school may help them increase their academic results.

Iva Hrastinski and Ronnie B. Wilbur (2016) There have been several research looking at the impact of students' American Sign Language (ASL) proficiency on their academic performance in ASL/English bilingual programs. The aim of this research was to see how ASL proficiency affected 85 deaf or hard-of-hearing signing students' reading comprehension abilities and academic achievement. On the Northwest Evaluation Association Measures of Academic Progress and the reading comprehension subtest of the Stanford Achievement Test, 10th edition, two subgroups of different levels of ASL proficiency were compared. Students who were fluent in ASL outperformed their less proficient peers on nationally standardized reading comprehension, English language use, and mathematics tests, according to the findings. Furthermore, a regression model of five predictors that included school, hearing aids, secondary conditions, ASL proficiency, and home language revealed that ASL proficiency was the sole variable that substantially predicted outcomes on all outcome measures. This study calls for a paradigm change in deaf education by concentrating on characteristics that good deaf signing readers have in common, especially ASL fluency.

H. Pelin Karasu (2017) From elementary school onwards, written language abilities play a critical role in the advancement of verbal, cognitive, and social skills. The aim of this research was to assess the written speech abilities of hearing-impaired students receiving auditory-oral instruction, as well as to look into the factors that influence success. The research involved 36 hearing-impaired fourth, sixth, seventh, and eighth grade students. Students got a mean overall score of 60.59 out of 100 for written speech, according to the study's findings. The period of preschool schooling explained 20% of the difference in written language, while chronological age explained 26%, age at first hearing aid fitting explained 43%, and chronological age explained 26%. The findings showed that, in addition to schooling, early diagnosis and action have an effect on the written speech success of school-age students with hearing loss.

Josephine Akellot and Paul Bangirana (2019) One hundred and eight parents of deaf children (Primary 1 to 7) were recruited from Mulago School for the Deaf in Kampala, Uganda, using purposive consecutive sampling. The Parental Engagement Questionnaire was used to assess parental involvement in school programs, while the third version of the Wide Range Assessment Test was used to assess academic achievement (reading, spelling and arithmetic). The relationship between parental engagement and academic performance was investigated using linear regression. A total of 155 children were admitted, with an average age of 11.09 years (SD = 2.89) with 56 (35.3%) of them were female. With a Beta coefficient of 0.07, a 7% rise in summed parental participation revealed no substantial relationship between parental engagement and deaf children's academic achievement ($p = 0.46$). In Kampala, parental participation was not related to academic achievement among deaf children. Other variables linked to academic success must be recognized in order to improve deaf children's school results.

Akiko Sugaya et al (2019) Reading and writing skills are vital for hearing-impaired children since they help them improve their language skills, but the prevalence of reading and writing disabilities, as well as their impact on language learning, are unknown. We investigated the language acquisition characteristics and socioeconomic influences of Japanese hearing-impaired children diagnosed with reading/writing disabilities in this report. Reading and writing are essential for language development in hearing-impaired children, particularly for academic achievement during the middle phase of elementary school, according to the findings. Screening for reading/writing problems is important for early diagnosis and to avoid vocabulary and academic delays in adolescents with hearing loss.

Su, et al (2020) The prevalence of otitis media (OM) and related hearing loss has remained persistently high among some groups of Australian Aboriginal children who are also reported to have poor academic outcomes. The general literature remains inconclusive about the association between OM-related hearing loss and academic performance in primary school. This study aimed to investigate this association in Aboriginal children living in the Northern Territory (NT) of Australia. Compared with children with normal hearing and after controlling for a range of covariates, children with mild hearing impairment (HI) scored lower in Writing and Spelling by 15.0 points (95% CI: − 22.4 to − 7.6, $p < 0.0005$) and 5.0

points (95% CI: − 9.6 to − 0.3, p = 0.037), equivalent to 7.3 and 2.1% of the mean score, respectively. Children with moderate or worse HI scored lower in Writing and Numeracy by 13.4 points (95% CI, − 24.8 to − 1.9, p = 0.022) and 15.2 points (95% CI, − 27.6 to − 2.7, p = 0.017), both equivalent to 6.3% of the mean score the respective domain. Other factors associated with poorer NAPLAN results included being male, lower Year 2 school attendance, low birthweight, average household size> 5 persons, living in a very remote community and speaking English as a second language. The evidence produced by this study indicates that Aboriginal children with a history of hearing impairment are at higher risk of poorer academic achievement in Year 3 of primary school.

III. OBJECTIVES OF THE STUDY

The main Objectives of the Research study are stated as follows:

1. To study the concept and relation between Education and Academic Achievement
2. To study the academic achievement of hearing impairment and normal students.

IV. RESEARCH METHODOLOGY

Statistical approaches are a collection of tools for analyzing evidence or structured information in order to uncover hidden details that can then be used to draw sound assumptions and make clear generalizations. The author used informative as well as inferential statistics to interpret the data in this analysis. Hearing disabled and average boys and girls are the dependent variables. Academic performance is the independent variable. This study employs the technique of purposive sampling. The thesis had a sample size of 160 participants. The General Classroom Achievement Exam, created by K. Singh and A. Sen Gupta, was issued to the respondent. It has a total of 77 products with a top score of 100. GCAT test-retest reliability with a 14-day break on a sample of 100 students was.782 and for split half.754 on a sample of 100 students.

V. ANALYSIS AND INTERPRETATIONS

5.1 Difference between academic achievement of Hearing Impaired and normal students

Here there are two groups of hearing impaired and normal, the data were tabulated and analyzed with help of t- test the result are;

Particular	N	Mean	Standard Deviation	Df	t-value	Level of Significance
Normal students	80	49.89	6.321			
Hearing Impaired	80	40.65	6.275	158	9.27	Significant

From the above it is evident that ‘t’ value 9.27 is significant at 0.05 level with df = 158. It reflects that mean score of academic achievement between normal and hearing impaired are differing significantly. ‘‘Therefore, it may be said that academic achievement effects the hearing impaired and normal students.”

5.2 Difference in the academic achievement normal and hearing boys

Here there are two groups of students normal and hearing impaired., the data were tabulated and analyzed help of t-test the result are;

Particular	N	Mean	Standard Deviation	Df	t-value	Level of Significance
Normal Boys	40	51.48	6.794			
Hearing Impaired Boys	40	39.23	5.94	78	8.584	Significant

From the above it is evident that ‘t’ value 8.584 is significant at 0.05 level with df = 78. It reflects that mean score of academic achievement between normal and hearing boys are differing significantly. Therefore, it may be said that there is difference on academic achievement level of hearing and normal boys.

5.3 Difference in the academic achievement normal and hearing girls

Here there are two types of students normal and hearing impaired., the data were tabulated and analyzed help of t-test the result are;

Particular	N	Mean	Standard Deviation	Df	t-value	Level of Significance
Normal Girls	40	48.30	5.44			
Hearing Impaired Girls	40	42.08	6.34	78	4.710	Significant

From the above it is evident that 't' value 4.710 is significant at 0.05 level with df = 78. It reflects that mean score of Academic achievement between hearing impaired and normal girls are differing significantly. There is significant difference in the academic achievement normal and hearing girls.

VI. CONCLUSION

There have been relatively few reports on the academic performance of students with hearing disability. They, like us, are pillars of our community, but we must concentrate on improving their academic performance so that they may contribute their utmost to society. The study's results showed that hearing disabled students' academic performance would be poor owing to a language barrier and other factors. They will still perform well in school if the void is covered by a professional and experienced instructor. We want to reflect on the shortcomings in their academic performance with the aid of this report. Since the new study has placed a lot of strain on students, more analysis on teachers and parents is also needed.

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