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Relationship Between Utilization Of Assistive Hearing Devices And Academic Achievement Of Learners With Hearing Impairment In Kenya

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ABSTRACT

The purpose of this research was to examine the academic performance of students with hearing impairments in Kenya and to determine whether or not assistive hearing aids had any effect on their academic progress. Two elementary schools in Kenya were the settings of the research. A correlational study strategy was used. Because they were forced to fill out surveys, the two schools could assume that the students understood how to read and write. Data was gathered via the use of questionnaires and the examination of secondary sources. The correlations between variables were established by analyzing quantitative data using SPSS and inferential statistics. Participation in the research was positively associated with higher levels of academic success among students who used assistive hearing aids. The research also found that most students who have trouble hearing do not have access to assistive listening equipment and have low academic performance.

Keywords – Hearing impairment, Academic achievement, Hearing devices, Deaf

I. INTRODUCTION

One of the ways in which information may be accessed is via the aural sense. Hearing loss prevents a person from developing normally since they learn to speak by imitating the noises around them [1]. Thus, assistive hearing equipment is necessary to amplify sound and enable a deaf person to understand spoken language. Several researchers have looked at how students with hearing loss do in the classroom when they use assistive listening devices. For example, in the United States, [2] found that students with mild to severe hearing loss performed better in language and academics when they used hearing aids.

Students' engagement, classroom participation, and attentiveness all improved significantly after the implementation of sound amplification systems in Australia's classrooms [3]. Educators noted that students were better able to communicate with their classmates, became more invested in class discussions, and felt more comfortable taking the lead when using the technology. In Cameroon, students who benefited from assistive technology had an easier time following along in class and even reported more enjoyment of class overall [4]. Last but not least, the usage of assistive technology also led to improved academic performance among students, which is a direct result of the fact that students were uninterested in lectures when professors failed to use technology. So, he came to the conclusion that assistive technology affected how hearing-impaired pupils in Cameroon understood and participated in class.

A research conducted in Kenya by [5] found that students who are hard of hearing performed worse academically than their typically hearing peers. They found the same thing in their study; 6.7% of students did below average, 11.7% did average, and just 1.6 did average. Learners with hearing loss are impacted by the quality of their education in terms of performance.

Literature review

Academic Performance of Learners with Hearing Impairment.

When compared to their hearing classmates, students who are deaf may have significant delays in academic progress at times [7]. Many studies have shown that the IQ of the deaf is comparable to that of their hearing counterparts, therefore it's clear that brainpower isn't the reason behind their poor scholastic accomplishment. The academic performance of deaf learners in the United Kingdom is worse than the national average, according to the inclusive education report for the deaf. When comparing hearing pupils in their last year of secondary school to their deaf

peers, the Scottish Qualification Authority found significant intellectual gaps. The findings were reported in an identical report to the Scottish government.

In Northern Ireland, the chances of deaf students getting an A-C on their GCSEs are four times lower than those of hearing students [8]. In a similar vein, research in the US indicated that whilst just 1% of hearing students are functionally illiterate when they graduate from high school, over a third of deaf kids are. It was found in [9] that deaf students in Tanzania had poor academic performance. Teachers' lack of expertise and adequate learning materials were the reasons given for this.

Using a descriptive case study approach, researchers in Kenya found that Kerugoya School for the Hearing Impaired had a lot of problems with social studies instruction and that students were underachieving as a result. Both the average and continuous performance of the school were lower than the District average. While the present research employed a correlational methodology to examine all domains of learning, the previous study narrowly focused on only one.

[11] Studied the connection between self-esteem and academic performance among deaf females attending Kenyan secondary schools using a correlational approach. The results indicated that out of all the second graders, only one had achieved a grade higher than the average. Only one student in Form 4 achieved a grade higher than the mean, whereas four pupils in Form 3 did so. These results highlight the fact that students were underachieving in the classroom. This research will target both male and female students with hearing loss in elementary schools, in contrast to a previous one that only looked at secondary school students [11]. Hearing aids are also going to be the center of attention in this investigation.

[5], examined the views of students and their academic achievement at a few elementary schools catering to the deaf in Uasin Gishu County. Learners did badly, with a mean score of 34.18, according to the survey. In addition, she found that females had somewhat higher mean scores than boys. Since the average score for males was 35.02 and for females it was 33.14.

The case study methodology was used in the research by [6] to ascertain the relationship between classroom communication and academic achievement of hearing impaired students at Kambui School for the Deaf. Results showed that most deaf students had trouble reading, had poor memorization skills, and had trouble understanding what they read. It took these students much longer to cover the curriculum than their hearing peers because they were slower to copy notes from the board, required more time to do assignments, and generally took their time. While in class, the majority of students were unable to work alone. Consequently, students with hearing loss often underperform their hearing peers in class. Studies conducted in elementary schools tended to concentrate on a particular subject, whereas the majority of research on this topic occurred in secondary schools for the deaf. In addition, the research evaluated the students' academic success based on their K.C.P.E. performance. While the present research used a correlational strategy across two schools, the work by [6] only used a case study approach across one school. Academic success for the deaf and assistive hearing devices were also major topics.

Relationship between Assistive Hearing Technology and Academic Achievement of Learners

[3] conducted an investigation in Australia. Concentration, classroom conduct, communication, and overall performance all saw significant improvements when the amplifiers were turned on, according to the findings. Increased participation in class discussions, greater opportunities for students to interact with one another, and encouragement to take the lead when necessary are all outcomes of this strategy. While using the tools, students also reported feeling happy. Students could do better in class if they pay more attention, talk more, and act more appropriately. It follows that AHT improves academic performance in the classroom.

A study conducted by [12] found that students using various kinds of assistive devices had significantly varying achievement scores on an Urdu language exam. Students who use a hearing aid or a cochlear implant do worse than those who use an F.M., infrared, or loop system. They also found that pupils who utilize several devices outperform those who use only the Infrared and Loop systems on the exam.

[13] conducted research at the Kenya Technical Training Institute for the Deaf and discovered that most pupils lacked a sufficient vocabulary and struggled to comprehend written instructions. Beyond that, only 3.3% of the student body was really making use of the 28 different types of assistive hearing aids. It follows that the students' issues stem from their failure to make use of AHT equipment. A research on the impact of hearing aids on the

academic performance of disabled students in public elementary schools in Saboti sub county was also conducted by [14]. Scheduling interviews and using organized questionnaires allowed for the collection of data. Students with hearing loss were able to achieve better academic outcomes when they used hearing aids including microphones, amplifiers, and receivers, according to the research. The research did not zero in on hearing aids for students who are deaf, however; it was conducted in typically hearing classrooms. The present research will be conducted in deaf-specific schools and will only examine the relationship between hearing aids and the academic performance of deaf students..

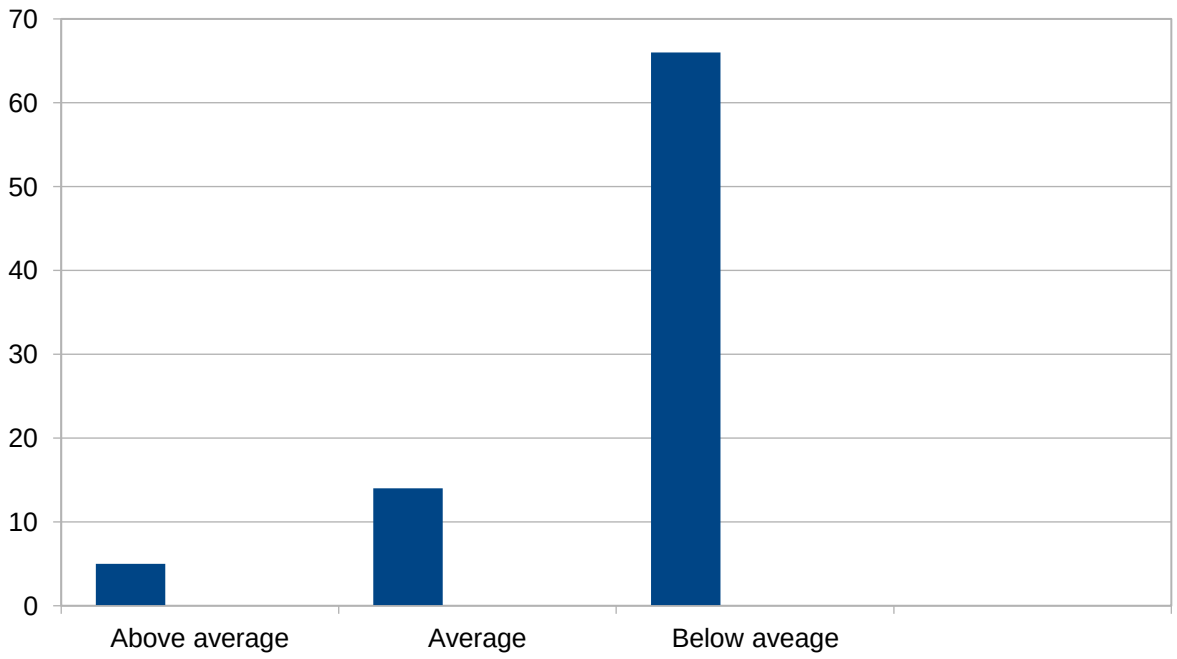
Methodology

Research strategy used in the study was a correlational one. Three hundred students from two separate institutions for the deaf were considered the target demographic. The two schools chosen for the sample are specifically designed for deaf students. Using census sampling, a total of 85 students were chosen since they were the only ones with the necessary literacy skills to complete the surveys. Questionnaires and document inspection were used to gather data. Learners with hearing impairments had their use of assistive hearing devices surveyed, and their academic progress was determined using document analysis. After that, the data was organized, and SPSS was used for the analysis. utilizing a T-test for correlation statistics, we were able to determine that students with hearing loss benefited academically from utilizing assistive hearing devices. In order to determine how well these students did in school, we used frequency tables.

RESULTS AND DISCUSSION

Academic Performance of Learners with Hearing Impairment in Kenya

Majority of the learners' academic achievement was below average, 14 learners achieved averagely while only 5 learners achieved above the average score as summarized in figure 1 below.



This result is in line with what was found in the study by [5], which showed that students who have trouble hearing did worse than their non-impaired peers. The majority of students do not use any kind of assistive hearing equipment, and the small number of students who do use hearing aids alone likely contribute to their poor academic performance. This conclusion is consistent with the one in [15], which found that deaf male students outperformed deaf female students by a little margin. This contradicts the results of the study by [5], which indicated that females had somewhat higher mean scores than boys. Given that the average score for the females was 33.02 and for the guys it was 35.02.

Mean Difference in the Academic Achievement of Girls and Boys

Table 1 below displays the results of a t-test that was conducted to see whether there was a statistically significant difference in the average academic performance of boys and girls.

	f	Sig	df	Sig(2- tailed)
Equal variances assumed	.088	.768	83	.789
Equal variances not assumed			82.316	.789

While males did better in school than girls, the t-test showed no statistically significant difference in the sexes' mean scores (as shown in the table) because the threshold of significance was.789, which is more than the.05. This result is consistent with that of [15], which examined the academic performance and self-concept of male and female students in Nigeria who were hearing impaired and discovered that the two groups did not differ significantly in these areas.

Relationship between assistive hearing technology and academic achievement of learners with hearing impairment

Table 2 summarizes the findings of a chi-square test that was conducted to see whether there is a link between the use of assistive hearing equipment and the academic success of students with hearing impairment.

	Value	df	Asymp. Sig.(2-sided)
Pearson chi-square	6.901	2	.032
Likelihood ratio	6.273	2	
Linear by linear association	6.502	1	

The findings showed that students with hearing loss who use assistive listening devices do better in school than their non-impaired peers, since the threshold of significance was less than 0.05 (.032). This led to the rejection of the null hypothesis, which posits that students with hearing loss do not benefit academically from using assistive listening devices. Additionally, it was shown that students who use assistive hearing devices outperform their non-using peers in terms of academic performance.

Results from this study are consistent with those from [4], which investigated the impact of AHT on the academic performance of students in Cameroon and concluded that the technology helped these students do better in class. Therefore, both high-tech and low-tech forms of assistive hearing equipment are necessary for students with hearing loss to succeed academically. While loop induction systems and FM systems are considered high-tech assistive hearing technology, hearing aids are considered low-tech.

Students using various kinds of assistive technology scored significantly differently on an Urdu language exam, according to research conducted by Muhammad [12]. When compared to students who use hearing aids or cochlear implants, pupils who have access to F.M., infrared, or loop systems do better. Students that use more than one 61 gadget outperform those who utilize only the Infrared or Loop systems, according to their findings. Consequently, pupils using high-tech devices outperform those utilizing low-tech hearing aids. The students' poor performance may be attributable to the fact that they rely only on low-tech assistive equipment, while the high-tech ones were allegedly unavailable at both institutions, even though students with hearing aids outperform those without.

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