



Focusing on Teaching and Learning Resources in Improving Academic Performance of Learners with HI in Inclusive Schools

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Abstract

Poor academic performance of learners with hearing impairment in inclusive schools is a challenge that has been worrying most of the stakeholders from global to local level. Stakeholders are unable to identify the main factors that are responsible for this undesirable trend. The purpose of this study was to examine how focusing on teaching and learning resources can improve academic performance of learners with HI in Rachuonyo East Sub County, Homa Bay County, Kenya. The study was guided by Instructional Design Theory by Charles Reigeluth (1999). The study used a cross-sectional survey research design and mixed research approach. The target population consisted of 17 H/Teachers, 5 CSO's, 78 teachers and 884 pupils of grade six from inclusive schools in all Zones of Rachuonyo East Sub County in Homa-Bay County, Kenya. A sample size of 370 respondents comprising of 5 CSO's, 17 H/Teachers, 78 teachers and 270 pupils were selected using census and purposive sampling techniques. The instruments used for data collection were questionnaires for teachers and head teachers, face to face interview for the CSOs and focused group discussions for learners. The reliability coefficient was determined using Cronbach's Alpha for each Sub-Scale. Test – retest research technique of reliability was administered twice to the same respondents in an interval of two weeks while keeping all the initial conditions constant and an acceptable reliability index of .78 was realized. Quantitative data was analyzed descriptively into frequency counts, mean ratings and percentages; then further inferentially using t-test and correlation methods. Qualitative data was analyzed thematically. The analyzed findings from the different sources were then corroborated and triangulated to bring harmony in the paper. The study finding was that when teaching and learning resources are adequately focused on by teachers, it will have moderate and positive ($r = .530$) significant influence ($p = .000$) on academic performance of HI learners. It is therefore recommended that special needs teachers should always use relevant and appropriate teaching / learning resources in the planning and delivery of their lessons. This should also be anchored in the ministry of education policy guiding the training of HI learners in inclusive primary schools.

Keywords: *Academic Performance, Learners, Hearing Impairment, Inclusive Schools*

INTRODUCTION



According to the world health organization WHO (2019), Over 1 billion people corresponding to about 15 percent of the world population are estimated to experience disability. WHO also noted that the number of people experiencing hearing impairment is increasing due to rise in chronic health conditions and lack of early intervention such as good placement and early assessment. Several research findings reveal that HI adversely affects any learner's academic performance if ignored. United Nations Educational Science and Cultural Organization (UNESCO) (2015) indicated that all children should be in school and acquire the expected learning outcomes at every stage of the curriculum irrespective of whatever circumstances.

Whereas Mc Nicholl, Casey, Desmond and Gallagher (2021), noted that learners with hearing impairment face academic, psychological and social challenges within educational environment; use of assistive devices can enable academic engagement and social psychological perspective thereby reducing social and psychological challenges. The assistive devices needs of learners with HI should be met in order to enhance the educational experience. Cheryan, Ziegler, Metzof and Plaut, (2014) outlined that physical classroom environment influences learner's achievement. In addition, inappropriate building's structural facilities, inadequate lighting, noise; low air quality and deficient heating in the classrooms are significantly related to worsening learners' academic achievement.

Kaindu, Simuyaba, Muleya and Simui (2021) noted that HI learners underperform academically because of language deficit and language delay, unfriendly curriculum, teachers' incompetence in the language of instruction (Sign Language) and lack of teaching and learning resources such as sign language books and captions. The research further revealed that learners with HI have a challenge in lack of common language of communication as well as shortage of specialized equipment like hearing aids and sound field system which are the assistive devices for learners with HI.

Whereas Chizingwa (2018) observed that unavailability of teaching and learning resources such as sign language books and captions, inappropriate instructional sessions, reduced total communication skills and inadequate classroom management influences academic performance of HI learners negatively in inclusive schools, the researcher fell short of indicating the extent at which this happens. The study pointed that poor performance of HI learners in inclusive schools could be as a result of lack of special needs trained teachers, common language of communication and overcrowded classrooms which are the required learning facilities for HI learners.

A study by Kigotho (2016) revealed that significant barriers for HI learners exist and they include learning facilities such as projectors, power and inadequate classroom space and furniture, poor lighting and noisy classroom environment, mode of instruction and challenge in socially integrating with the hearing learners leading to loneliness and isolation. The findings further stated that HI learners in an inclusive classroom area always left behind when it comes to learning. The researcher further noted that not many teachers are aware on how



to handle a class that has a hearing impaired and so, most of the times teaching continues normally ignoring the challenges the learners may be having.

Mwanya (2016) noted that negative communication and societal view towards the deaf influence their achievement in education. The study further revealed that the present curriculum of Kenya does not cater for all learners with special educational needs in terms of coverage of curriculum content and that the few available teachers are not very familiar and fluent in using Kenya Sign Language and that most schools lack adequate teaching and learning resources. Mwanya recommended that the government should employ specially trained teachers with adequate skills to handle learners with HI in inclusive school and the need for major curriculum adaptation to suit learners with HI so as to improve their academic standards.

Wesley (2019) revealed that Kenya Sign Language, the level of HI, in-service training of teachers and school socio-economic factors such as facilities, teacher-learners ratio, teachers and learners attitudes significantly contributes to the poor performance of English language as a skill. Wesley, further noted that the variations in sentence structure between K.S.L and English significantly contributes to poor performance of English language among the HI learners since there is a positive relationship between the nature of K.S.L and the performance of English language in special primary schools for the HI learners.

Whereas many factors could be attributed to the low academic performance of HI learners, it is not clear on the specific teaching / learning resources that is the main contributor to the poor performance of learners with HI. The current study, therefore investigated the main teaching and learning resources that influence the academic performance of learners with HI.

Statement of the Problem

Academic performance of learners with HI is still low in Kenya even after implementation of varied intervention strategies. The government of Kenya has made deliberate efforts to improve academic performance of learners with HI in Kenya by formulating a number of policies and reports that are geared towards improving the academic achievements of learners with HI. The policies and reports include; the policy of Individual with Disabilities Education Act (IDEA) and section 504 of the Rehabilitation Act that gives provision of appropriate education service to learners with HI. The national special needs education framework of 2017, the Ministry of education sector policies for learners and trainees with disabilities of 2018 and special education policy and practice in Kenya (2016) are all in support of inclusion of learners with HI for better performance. However, there have been unclear documented challenges in realizing good academic performance of HI learners in these inclusive schools.

Objective of the Study



To assess the influence of teaching and learning resources on academic performance of learners with HI in inclusive schools in Rachuonyo East Sub-County, Homa Bay County, Kenya.

Instructional Design Theory

The study was guided by Instructional design theory (Reigeluth, 1999) as was further expounded by Carey (2015). Instructional theory offers explicit guidance on how to better help people learn and develop. It provides insights about what is likely to happen and why with respect to different kinds of teaching and learning activities while helping indicate approaches for their evaluation. It has a basic characteristic of identifying teaching skills (methods), teaching resources/materials and situation of the learners when assistive devices are used appropriately. The theory guided on how to best structure teaching resources (materials) and instructional methods depending on the assistive devices made available and used appropriately on learners needs to facilitate learning.

The theory guided further on how learning resources can influence the academic outcome (performance) of learners positively when used depending on the situation of the learner. It implies that teachers/trainers handling learners with hearing impairment should use appropriate learning resources that best suit their needs and situation so as to achieve the highest possible chance of the desired academic outcome/ performance effectively.

Description of Conceptual framework

Conceptual framework illustrates how teaching and learning resources influences academic performance of learners with HI. Reviewed literature identified indicators of teaching resources includes sign language books, MCB and Modified classrooms as having possible influence on the academic performance of HI learners. Academic performance being the dependent variable had measurable indicators as basic writing skills, basic reading skills and communication using KSL. The intervening variables noted were the government of Kenya policies and teacher – students ratio.

RESEARCH METHODOLOGY

The research was carried following clear plan that suited the nature of the research and the data that was needed.

Research Design and Approach

This Study adopted a descriptive Cross Sectional research design because it described characteristics of the phenomenon that was being studied. This design was important as it allowed the researcher to compare many different variables at the same time. The design



explains why or how certain outcomes occurred. The cross Sectional Survey research design was effective in providing the opportunity to integrate the qualitative and quantitative methods of data collection (Reswell, 2014). The research used mixed methods approach which involved the collection of both quantitative and qualitative data. The findings from the two types of data were then corroborated and triangulated for appropriate meaning and harmony.

Sampling Technique and Sample Size

Sampling is the process of selecting a number of individuals for a study in a way that the individuals selected represent the large group from which they are selected (Shirima, 2020). The Researcher used census sampling technique to get the sample size of CSO's , Head Teachers and Teachers. For learners, the researcher used purposive sampling technique to get the sample size of learners with HI in inclusive schools.

Validity of the Instruments

According to Thomas (2019), Validity is the degree to which the instrument measures what it is supposed to be measuring. Findings from the pilot study were used to work out validity. Content, construct and face validity after necessary adjustments. Interview guide questions were redefined and developed in line with the study objective. Expert judgment by the personnel from the department of Educational Psychology and Science was used to check if questions were in line with study objective. The instrument was only used after attaining content validity index threshold of .70. This was worked out by dividing the number of items approved by experts as relevant by the total number of items in the instruments/study tools. The instruments attained a content validity index of .78.

Reliability of the Instrument

A research instrument is considered reliable if the results of the study can be reproduced under a similar methodology (Mugenda & Mugenda, 2012). Findings from the pilot study were used to work out reliability. Test-retest research technique of reliability was used where the tools were administered twice to the same respondents in an interval of two weeks while keeping all the initial conditions constant. The instrument was only used after attaining reliability index threshold of .70 (Kelly, 2005). Each instrument had its reliability index determined before use. The answers were then compared to show the extent to which responses are consistent. The scores were then correlated using Pearson's product correlation method to determine reliability of .81.



Data Cleaning, Coding and Keying

The data extracted from the instruments were checked and sorted out by the researcher where by the unfilled questionnaires were removed out and duly filled questionnaires and interview schedules were cleaned for integrity. The data was then coded and keyed in for analysis with the aid of statistical package for social sciences (SPSS) version 27.

DATA ANALYSIS

Data analysis refers to the process of bringing order, structure and meaning to the mass information collected (Mugenda & Mugenda, 2003). This study generated both qualitative and quantitative data from the mixed method approach. Quantitative data was obtained from the respondents through questionnaires. Qualitative data was analyzed using thematic analysis. Themes were coded and analyzed as per the study objective.

Quantitative data was generated from the closed-ended questions in the questionnaires dully filled and completed questionnaires were cleaned and cross-checked for data integrity. Data coding was done and entered into code books for analysis. It was then analysed descriptively into percentages, means and standard deviation, then inferentially using pearson's product moment correlations with the aid of Statistical Package for Social Sciences (SPSS) version 27.0.

Data Presentation

The results from the qualitative data were presented through themes and verbatim while quantitative data was presented through tables. The two categories of data were then corroborated and triangulated for harmony in the discussion as is recommended by Ongukah, Otara and Oyoo (2023).

Ethical Considerations.

According to Australian Market and Social Research Society (AMSRS) (2019), ethics are based on the confidence that the research is carried out objectively and that protects the rights of the participants. The information from the study was safely stored and the researcher did not disclose any information shared by the participants and it was kept confidential and private. The study embraced the Principles of research as stated by Kombo and Tromp (2019) that any research involving human beings should consider the guiding principles. An introductory letter was gotten from the directorate of post graduate studies of Rongo University and the letter was used to obtain the research permit from National Commission for Science, Technology and Innovation (NACOSTI) to conduct the research. Consent was gotten from the school administrators whose learners were involved in the research. An appointment was booked with CSOs, Head teachers and Teachers who participated in the research. Research participants were kept anonymous. Personal information was not disclosed



and the participants were assured of using the information obtained for the purpose of the research only.

FINDINGS AND DISCUSSIONS

The research question of the study that was responded to was: What are the main teaching/learning resources that influence academic performance of learners with HI in inclusive schools in Rachuonyo East Sub County, Homa Bay County, Kenya? The responses to this research question were analyzed and presented in Table 1.

Table 1: Teaching / Learning Resources and Academic Performance of Learners with HI

Item Statement on Teaching / Learning Resources and Academic Performance	Percentage Level of Agreement			M	SD
	Disagree	Neutral	Agree		
Adequate sign language books in inclusive schools	95.3	3.5	1.2	1.44	.625
Teachers use sign language books to teach learners with HI in inclusive schools	89.5	9.3	1.2	1.52	.715
HI learners know how to sign language books in inclusive schools	88.3	8.1	3.5	1.53	.793
MCBs are used as teaching resources in inclusive schools	77.9	10.5	1.2	1.79	1.08
MCBs are available in inclusive schools	76.7	10.5	12.8	1.79	1.11
Adequate modified classrooms for HI learners are available in inclusive schools	89.5	9.3	1.2	1.50	.763
Modified classrooms are in good conditions in inclusive schools	94.2	3.5	2.3	1.47	.681

Table 1 show that 95.3 percent of the respondents disagreed that there were adequate sign language books in inclusive schools. This was further supported by a very low mean score of 1.44. Inadequate sign language books in inclusive schools indicate that the school system is not sensitive to the educational needs of HI learners in their schools. The inadequacy of sign language books in inclusive schools was also confirmed by the findings from FGD like FGD 004 noted that; “We don’t have sign language books in our school with only many story books in the office.” This indicates that HI learners face a lot of challenges in learning attributed to insufficient learning materials. This insensitivity Contribute to their poor academic performance as was also confirmed by Oluremi and Oso (2003). Sign language books are very essential in education of HI learners since they aid in practicing different signs which enhance communication. Therefore, when sign language books are not availed or are not adequate,



then there must be a big challenge in achieving educational goals for learners with HI in the study area.

As regard teachers using sign language books to teach learners with HI in inclusive schools, 89.5 percent of the respondents disagreed with a very low mean rating of 1.52 (Table 1). Given that sign language books are lacking in the inclusive schools, teachers are not making any efforts to learn and teach using sign language books and this is a possible cause for the low performance of HI learners in inclusive schools.

Table 1 show that 88.3 percent of the respondents disagreed that HI learners know how to sign language books in inclusive schools. This was further supported by a very low mean score rating of 1.53 by the respondents, implying that this construct should be having high influence on the academic performance of HI learners. Definitely, inadequate sign language books and teachers not teaching using sign language will therefore imply that the learners are incompetent in signing and hence a possible cause of poor performance of HI learners in inclusive schools. From the findings of FGDs, they all made it clear that sign language books are inadequate in their schools. This was equally in line with the findings of Wambui (2015). This could be the reason why teachers are not bothered to use sign language books for teaching. This is a confirmation that HI learners are not benefiting enough from the inclusive school systems of education in the study area and this is another main reason reason why they underachieve in academic performance.

As regard MCBs being used as teaching resources in inclusive schools, 77.9 percent of the respondents strongly disagreed with a low mean rating of 1.79 (table 1). Teachers not using MCBs mean that the HI learners are not being given appropriate resources for effective teaching. This makes HI learners disadvantaged and may not benefit enough from learning in inclusive schools, hence lead to poor academic results. Teachers or HI learners in inclusive schools should find a way of improvising MCBs so as to facilitate learning for these HI learners.

Table 1 show that 76.7 percent of the respondents disagreed that MCBs are available in inclusive schools. This was further supported by a low mean score of 1.79 implying that this construct should be having high influence on the academic performance of HI learners or that its influence cannot be effectively measured in the circumstances. Lack of MCBs means that the HI learners are not being given appropriate resources for effectively teaching them. Teachers in inclusive schools may not be aware of the effectiveness of MCB since they are not availed in schools for use as it is confirmed from the FGD 002 saying;

“We are not using MCB in our school because they are not there. We think can benefit a lot if they can be availed to us as is the case in special schools. We hope sponsors can take that advantage and bring them to our schools”

This is a clear indication that HI learners in inclusive schools lack appropriate teaching resources for their use that could be the reason for their poor academic performance as it is in agreement with Oluremi and Osos, (2013) whose findings revealed that inadequate provision of teaching and learning resources to public inclusive schools lead to poor academic



performance.

As regard adequate modified classrooms for HI learners being available in inclusive schools, 89.5 percent of the respondents disagreed and with a low mean rating of 1.50 (table 1). The responses show that there is no evidence that there are modified classrooms that can provide appropriate teaching environment for HI learners. This means that the presence of such learners in inclusive schools really disadvantage the learners. Both the findings from quantitative data and FGD concurred with the findings of Wambui (2015) that MCBs are the common teaching resources for HI learners but they are not availed for use in the study area. Teachers handling HI learners may not be aware of their effectiveness since they are not found in these schools. This shows a great injustice and insensitivity to HI learners' education hence a clear pointer to the poor performance of HI learners in the study area.

Table 1 show that 94.2 percent of the respondents disagreed that modified classrooms are in good conditions in inclusive schools. This was further supported by a low mean score rating of 1.47 implying that this construct should be having high influence on the academic performance of HI learners. This may not make sense if in the first case such modified classrooms are absent in inclusive schools. For HI learners. This was confirmed from the findings of interview schedule FGD 010 who noted that;

“We don't have new classrooms, our classrooms are old and they have bad floor and windows. There is need to have more classrooms so that some can be used as modified classrooms”

This means that HI learners in these inclusive schools are very much disadvantaged since they don't learn in a friendly environment and this may contribute to their poor performance in academics. The government should build modified classrooms in public inclusive schools to enhance education for HI learners. The findings are in agreement with Rishadly (2017) who established that teaching environment of HI learners is not friendly due to insufficient facilities such as modified classrooms. This was further confirmed in the findings from FGD as was emphasized by FGD 003 saying that;

“Our classroom is very bad, the floor is rough, we don't have window glasses and the rain comes in what it is raining. Other learners peep through our windows when we are being taught.”

Generally, the findings gives very clear indication that the HI classrooms in inclusive schools are not modified and are not in good condition. This may bring a lot of challenges and disadvantages to HI learners and could be a contributor to poor academic performance for HI learners in the study area.

4.4.2: Inferential Statistical Analysis of Teaching / Learning Resources on Performance

The data collected on independent sub variables of objective one were subjected to inferential statistical analysis in the SPSS program version 27. The findings are presented in table 2.

Table 2: Inferential Statistical Analysis of Teaching / Learning Resources on Performance



Item Statement on Teaching / Learning Resources and Academic Performance	T-Test		Correlation	
	t(84) =	p =	r =	P =
Adequate sign language books in inclusive schools	1.198,	.234	-.458,	.000
Teachers use sign language books to teach learners with HI in inclusive schools	1.134,	.260	-.312,	.003
HI learners know how to sign language books in inclusive schools	2.602,	.011	.288,	.007
MCBs are used as teaching resources in inclusive schools	-.037,	.971	-.022,	.839
MCBs are available in inclusive schools	-.291,	.772	-.003,	.975
Adequate modified classrooms for HI learners are available in inclusive schools	1.309,	.194	-.384,	.000
Modified classrooms are in good conditions in inclusive schools	2.576,	.012	-.288,	.007
Overall				
			.530,	
				.000

From Table 2, most of the head teacher's responses had a lower mean rating as compared to the responses of teachers. However, since the p-value is more than the chosen significance level of .05, there is enough statistical evidence that there is no difference between the responses of teachers and head teachers.

Table 2 further show that the overall correlation index of all the sub variables of the objective is $r = .530$. This implies that the main teaching/learning resources have moderate and positive significant ($p = .000$) influence on academic performance of learners with HI in inclusive schools in the study area. If adequate resources are provided, the academic progress of HI learners can be very much enhanced.

CONCLUSION AND RECOMMENDATIONS

According to the study findings, teaching and learning resources have moderate and positive significant influence on academic performance of HI learners in inclusive schools in the study



area. This is shown on table 2 where the overall correlation index is $r=.530$, $p=.000$. If adequate resources are provided in the study area, the academic progress of learners can be very much enhanced.

The study recommend that the ministry of education in Kenya, should have in their policy guidelines on the provision and use of appropriate learning resources for teaching HI learners in public inclusive primary schools.

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