

The Influence of Manual Communication on Academic Performance of Learners with Hearing Impairment in Inclusive Settings in Kisumu County, Kenya

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Abstract: This study sought to establish the influence of communication in teaching children with hearing impairment in Kisumu County. The objective of the study was to establish the influence of manual communication on academic performance of learners with HI in inclusive settings in Kisumu County. The study was anchored on the Total Communication Theory by Holcomb of (1967). The study employed descriptive survey. The targeted population consisted of 20 head-teachers, 96 teachers and 124 pupils in primary schools under inclusive learning set up in Kisumu County. Ten (10) head-teachers, 66 teachers and 73 pupils were selected using simple random sampling procedure. The instruments of data collection were semi structured questionnaires and interview guide. A reliability coefficient of 0.8 was obtained using the split half method and this indicating that the instruments were reliable to be used in collecting data. The study found that the schools were in serious need of various communication modes. Most teachers were found to be poor in sign language which was leading to poor academic performance. Majority of hearing impaired learners in class five scored lower marks than their class means score. The result showed that 73.3% of the variations in academic performance of hearing impaired learners were attributed to independent variables. The study also revealed that TC was mostly used as the instructional mode. However, the results further showed that the availability of Kenyan Sign Language made most significant contribution in the performance of learners with HI. The study recommends that the government of Kenya should allocate more funds to primary schools with inclusive settings and fully support the institutions in terms of communication aids and facilities. The HI teachers should equally be well vast with new technologies and advancements in communication systems in their area of specialization. This will assist the school managers and teachers in charge of SL in implementing fully the use of Total Communication modes in these settings.

Keywords: Manual Communication, Academic Performance, Hearing Impairment, Inclusive Settings.

1. INTRODUCTION

Close to 250 million persons in the world suffer or are affected in one way or another by hearing impairment and more than 75% of this number are found in the Sub-Saharan Africa (SSA) (Mapolisa, 2013). World educators have developed two main instructional methods (oral and manual methods) of educating learners with hearing impairment whose applications vary globally depending on the nature and functions of the individual institutions. These instructional methods aim at

ensuring that such learners are accorded the opportunity that enables them to compete favorably with the average learners (Mitchell, 2014).

The degree of hearing loss in children vary from a slight loss to severe cases according to Beastley (2016), cases of severe hearing loss are referred to as hearing impairment while those with slight hearing problems are called hard of hearing. Loss of hearing in most cases are associated with hearing problems which begins at childhood stages and if not taken care of may affect their writing and reading resulting in poor academic development (Cole & Flexer, 2011). A study conducted by Cole and Flexer (2011) in USA on 1,218 children with mild hearing loss indicated that 37 percent had failed a grade. The study further showed that children with unilateral hearing loss are ten times more likely than normally hearing children to fail a grade. The larger majority of children with hearing loss are hard of hearing rather than hearing impaired. For these children, their speech may be audible but not intelligible enough to allow them to hear one word as distinct from another.

In the United States alone, there are over 50,000 school-age hearing impaired children and close to 5 million children are who in schools suffering from hard of hearing cases (Wolffe & Jerry, 2010). According to Bat-Chava and Yael (2012), hearing impairment cases in Australia vary with age and sex. The most notable cases are found among boys than girls aged 0-14 years. They further indicated that about three quarter of boys and almost half of the girls aged 5-14 years have had hearing cases. Among the children with hearing impairment, 15% - 30% have been reported to have communication difficulties (Varshney, 2016).

Learners with HI experience communication difficulties and the use of various communication modes in inclusion schools is desirable. The use of various communication modes including verbal, manual and Total Communication (TC) have been praised among HI (Heinrichs-Graham & Lewis, 2012). According to Varshhney (2016), hearing impairment has led to learning difficulties in most schools in India since 15% - 30% of children with hearing impairment had been reported to experience communication difficulties. Such difficulties call for professional interventions in planning and provision of safe and supportive environment that helps in developing communication skills. Professionals in this case are the teachers who are regrettably not well trained in sign language.

Marschark et al., (2002) in Thailand too saw the need for systematic process in total communication and made a policy in total communication in 2009 by the Thailand Office of the Basic Education Commission. The main objective of the policy was to promote Positive attitude and decrease truancy problems in schools. This was to promote the learner academic and social being in the inclusive classroom. However, this did not focus on learners with hearing impairment.

Lack of resources has slowed down awareness on hearing impairment problem in Nigeria, Egypt and other African Countries but Ekwama (2003) study indicated that such cases are believed to be high among the African population. Children with special needs are usually neglected and often than not lack basic necessity they require such as hearing aids, leaving the school administrations' to shoulder the whole burden in case they are taken to schools. In a study in Egypt by Gad-Allah (2015) found out that there exists communication breakdown among learners who suffer from hearing impairment, than their normal counter parts and most teachers in regular schools. This is mainly due to lack of necessary skills in sign languages to enable effective communication (Marques, 2015; Olusanya, 2014).

More changes in educational system are continuously witnessed in Kenya with focus on education of the hearing impaired and hard-of-hearing. Several organizations in Kenya are championing the rights of hearing impaired and promoting the progress in hearing impaired education (Adoyo, 2007). The development of Kenyan sign language has in the past influenced sign languages in other parts of the world; for instance that of Somalia was founded based on the Kenyan sign language. The Kenyan sign language varies with the rest of the world but this variation is not very big with that of Tanzania and Uganda (Wamae, Getrude & Kamau 2004).

2. LITERATURE REVIEW

Manual communication involves the use of signs and finger spelling but not limited to total communication, writing, sign exact English and sign language. Sign language is used in teaching learners with hearing impairment. Despite the importance of this method, a study conducted by Picou, Ricketts, and Hornsby (2011) in Netherlands, indicates that it is a very unpopular language especially among those who have hearing abilities. This may imply that learners with hearing

impairment find it difficult to communicate with hearing learners. It can negatively affect their academic performance. It can affect language practice especially English. Hard of hearing people have varied degrees of hearing but their major mode of communication remains listening, gestures, speech, mime and the use of facial expression (Edwama, 2003). Edwama further states that other methods that are employed in study may include the use of auditory memory though it is most effective with those with hearing ability. Those that are hard of hearing can be taught normally so long as they have hearing aids. They can perform better if instructed orally.

Finger spelling involves the use of writing in the air through making of hand shapes of the 26 English alphabetical letters thus helping in spelling words manually. This method of communication is an important interface of the written language and the hearing impaired individuals in the society. This sign method is strongly advocated for due to its ability to sign all English words but becomes limited when it comes to mother tongue (Heward, 2006). However, the use in numeracy is not stressed, it is important that studies that focus on academic performance be done in inclusive settings.

The manual alphabet which is one-to-one cipher mostly uses one in many countries including Kenya but in Britain, two hands are used. This method of communication uses 26 finger positioning with various numbers of hand shapes representing the 26 letters of English alphabets thus freely spells the English words. This is one of the most slow form of communication in terms of time and most used in combination with other methods of communication to cater for time wastages (Heward, 2006). It can be used in teaching however it is slow on covering the syllabus for learners with hearing impairment in inclusive settings. The current study intended to establish the influence of communication methods on academic performance of learners with hearing impairment in inclusive setting in Kisumu County.

Lip-reading is a bit difficult to learn among most learners but its mastery is automatic with the hearing impaired learners and the learners can only understand a small portion of what is taught through lip-reading. In a study conducted in Boston by Moores (2006) reported that learners who dependent much on lip-reading were slow in curriculum mastery, had poor vocabulary and were also not good in grammar development, often perform poorly in class. This study was conducted in America, it is imperative to conduct the current study to ascertain the empirical evidence in Kenyan setup including academic performance of learners with hearing impairment in inclusive setting. In the study entitled "Communication methods among hearing impaired in Nairobi, Kenya" Karanja (2012) averred that lip-reading is very popular among learners with hearing impairment though most learners were very comfortable with signing communication. It was necessary to conduct a study that focus on academic performance in inclusive setting where mode of delivery includes Lip- reading.

The conditions in the home, the language in the home, deafness in the family, size of the family, relationships with siblings, guidance given to the family, ability of parents to follow the guidance, and mode of communication in the home are some of the most important factors which affect the schooling of hearing-impaired children (Reed, 2014). Several surveys have consistently shown that the deaf child with deaf parents is considered to have better chance of academic success than a deaf child with normally hearing parents particularly if the deaf parents are highly educated. However, more than 90 percent of hearing-impaired children are born to hearing parents. This means that the child has difficulties of various degrees to learn the spoken language used by his/her parents. Deaf children with deaf parents learn signed language as fast as hearing children learn spoken language. The earlier a deaf child learns to sign, the quicker the child learns. The child is likely to learn to read and write more easily too (Heward & Orlansky, 1992).

3. FINDINGS AND DISCUSSIONS

This study established the influence of manual communication on academic performance of learner with hearing impairment in inclusive settings in Kisumu County. The researcher achieved this objective by asking the repondents (learners and teachers) to give their opinion regarding this in relation to the use of manual communication in critical areas in school, and the extent of participation of school stakeholders in manual communication mode. The data was analyzed using frequencies, percentages, means and standard deviations (SD). Tables, pie-charts and graphs were used in presenting the results.

Teachers and learners were asked to indicate their opinion concerning the use of manual communication in their schools. The findings were indicated in Table 1.

Table 1: Use of Manual Communication

Statement		SA	A	U	D	DS	Mean	S.D
Pupils with hearing impairment find it difficult to communicate with hearing learners as a result of being taught with manual communication	F	24	56	27	15	7	3.58	0.10
	%	18.6	43.4	20.9	11.6	5.4		
Pupils can spell words manually as a result of being taught writing in the air through making of hand shapes in our school.	F	32	67	14	0	16	3.77	0.11
	%	24.8	51.9	10.9	6.2	6.2		
Manual communication is a slow form of communication in terms of time and does not enhance academic performance	F	22	67	13	15	12	3.56	0.10
	%	17.1	51.9	10.1	11.6	9.3		
Pupils can only understand small portion of what is taught through Manual Communication hence undermining academic performance.	F	37	48	8	23	13	3.57	0.12
	%	28.7	37.2	6.2	17.8	10.1		
Aggregated overall mean							3.62	

Key: SA-Strongly agree, A-Agree, Un-Undecided, D-Disagree, DS-Strongly disagree

The results in Table 1 indicate that over three fifth (80 forming 62.0%) of the respondents (18.6% strongly agreed, and 43.4% agreed) that ‘Pupils with HI find it difficult to communicate with hearing learners as a result of being taught with manual communication’. The mean of this item was 3.58 and SD was 0.10 showing that the majority of respondents were in agreement that learners with HI were experiencing difficulties in communicating with their hearing counterparts. 20.9% of the respondents were undecided on this matter while only 11.6% and 5.4% of the respondents disagreed and strongly disagreed with the statement respectively.

In relation that ‘Pupils can spell words manually as a result of being taught writing in the air through making of hand shapes in our school’, majority (99 forming 76.7%) of the respondents were in agreement with the statement. This constituted of 32 (24.8%) strongly agreeing and 67 (51.9%) agreeing. This affirmed that the use of manual communication was very important in promoting word spellings among learner (mean = 3.77, SD = 0.11). 14 (10.9%) were undecided on this matter and 12.4% strongly disagreed. In regard of the statement that ‘Manual communication is a slow form of communication in terms of time and does not enhance academic performance’, the respondents (learners and teachers) indicated that they were generally in agreement with the statement (mean = 3.56, SD = 0.10). Specifically, 17.1% and 51.9% strongly agreed and agreed with the statement respectively. 10.1% of the respondents were undecided while 11.6% and 9.3% disagreed and strongly disagreed respectively with the statement. This implied that learners who totally depends on manual communication required a lot of time to grasp concepts and ideas taught in class.

The statement that ‘Pupils can only understand small portion of what is taught through Manual Communication hence undermining academic performance’ was supported by 65.9% (mean = 3.57, SD = 0.12) of the respondents. Strongly disagreeing attracted 28.7% while agreeing attracted 37.2% of the respondents. Only 6.2% were undecided on the statement while 17.8% and 10.1% of the respondents disagreed and strongly disagreed respectively with the statement.

Qualitative data from the head teachers indicated that sign language programme received little attention in budget allocation in school. Twice, it was reported by the head teachers that:

Eventhough the government fund school programmes and projects, the allocation for our school is hadly enough..... The budget is usually constrained such that none is left for sign language programmes in our school.(Head-teacher_{7&8}).

Learners were asked to provide information regarding the use of manual communication in various critical areas in school by sign language teachers. The results were as indicated in Table 2.

Table 2: Use of Manual Communication in Various Critical Areas

Critical areas		Ex	Go	Ave	BA	P	Mean	S.D
Academic issues	F	21	37	6	4	0	4.10	0.10
	%	30.9	54.4	8.8	5.9	0.0		
Social interaction issues	F	16	39	10	0	3	4.00	0.09
	%	23.5	57.4	14.7	0.0	4.4		
Parent interaction	F	24	29	13	2		4.10	0.10
	%	35.3	42.6	19.1	2.9	0.0		
Hearing/HI relationship	F	15	48	4	1	0	4.13	0.07
	%	22.1	70.6	5.9	1.5	0.0		
Adhering to school rules	F	31	28	6	0	3	4.28	0.10
	%	45.6	41.2	8.8	0.0	4.4		
Career choice issues	F	25	21	14	8		3.93	0.12
	%	36.8	30.9	20.6	11.8	0.0		
Sports and games issues	F	8	41	17	0	2	3.81	0.08
	%	11.8	60.3	25.0	0.0	2.9		

Key: Ex-Excellent, Go-Good, Ave-Average, BA-Below average, P-Poor

From Table 2 learners overwhelmingly agreed that sign language teacher use manual communication in all critical areas in school. 30.9% (21) and 54.4% (37) of the learners were of the opinion that the use of manual communication by sign language teachers in areas related to academics was excellent and good respectively. This was contrary to the 8.8% who felt that its use was average and the 5.9% who were of the opinion that manual communication used by sign language teachers was below average. A mean of 4.10 and a SD of 0.10 showed that manual communication was highly used in academic issues. Similarly, 23.5% and 57.4% of the learners indicated that the use of manual communication in social interaction by sign language teachers was excellent and good respectively.

According to 14.7% of the learners, it was average and only 4.4% felt manual communication was poor in areas related to social interactions. This result implied that majority of the learners (mean = 4.00, SD = 0.09) understood the role of manual communication in social interaction. This could be true since in most cases, the only way to associate with learners with HI in an inclusive setting is only through manual communication. From the analysis, it was further established that majority of the learners (mean = 4.10, SD = 0.10) agreed that the use of manual communication by sign language teachers was important when it comes to interacting with parents. Of the learners surveyed, 35.3% (24) and 42.6% (29) were of the opinion that the use manual communication by sign language teachers was excellent and good respectively in interacting with parents. This was contrary to the 19.1% (4) and only 2.9% (2) who felt the use of manual communication by sign language teacher was average and below average respectively in parental interaction. 22.1% and 70.6% of the learners indicated that use of manual communication by sign language teachers was excellent and good respectively in promoting the relationship between learners with HI and their hearing counterparts. 5.9% still felt that it was average and only 1.5% of the learners thought that the use of manual communication was below average in enhancing this relationship. This overwhelming support (mean = 4.13, SD = 0.07) could be attributed to the fact that interaction between learners with HI and their peers with hearing ability could be achieved through manual communication mode. Manual communication is the primary communication mode of those with HI.

In adhering to school rules, majority of learners 86.8% were of the opinion that the use of manual communication was excellent (45.6%) and good (41.2%). Contrary to the 8.8% and 4.4% of the learners who felt that it was average and poor respectively. 36.8% and 30.9% of the learners felt that the use of manual communication by sign language teachers was excellent and good respectively in promoting career choice among learners. Though, 20.6% and 11.8% of the learners were of the opinion that the use of manual communication by sign language teachers was average and below average when it came to career choice. Use of manual communication was highly praised when it came to games and sports (mean = 3.81, SD = 0.08). More than 70.0% of the respondents indicated that they highly needed manual communication when it came to adherence to school rules. Majority of the respondents were either not sure (50.0%) or felt that manual communication was not needed (17.6%) in issues concerning career choice. More than 60.0% felt that verbal communication was highly needed in areas related to sports and games.

Teachers were asked to indicate the extent to which other stakeholders participated in the use of manual communication. Likert scale was provided to the respondents in which the questionnaire responses were coded with Very large extent rated 5, Large extent-4, Moderately-3, Small extent-2 and Not extent – 1. The results were as indicated in Table 3.

Table 3: Extent of Participation of other Stakeholders in Manual Communication

Stake holder		VLE	LE	M	SE	NE	Mean	S.D
Head teacher	F	55	0	4	2	0	4.77	0.09
	%	90.2	0.0	6.6	3.3	0.0		
Class teachers	F	29	32	0	0	0	4.48	0.06
	%	47.5	52.5	0.0	0.0	0.0		
Teacher on duty	F	25	36	0	0	0	4.41	0.06
	%	41.0	59.0	0.0	0.0	0.0		
School Prefects	F	8	26	9	11	7	3.28	0.16
	%	13.1	42.6	1.8	18.0	11.5		
Peer Counselors	F	13	40	0	8	0	3.95	0.11
	%	21.3	65.6	0.0	13.1	0.0		
Invited Parents	F	20	5	21	7	8	3.36	0.18
	%	32.8	8.2	34.4	11.5	13.1		
Invited Guest speakers	F	22	0	20	5	14	3.18	0.20
	%	36.1	0.0	32.8	8.2	23.0		
MOEST Officials e.g. QASO	F	6	0	8	34	13	2.21	0.14
		9.8	0	13.1	55.7	21.3		
School Board Members	F	14	0	0	36	11	2.51	0.18
	%	23.0	0.0	0.0	59.0	18.0		
Religious institutions	F	6	0	31	14	10	2.64	0.14
	%	9.8	0.0	50.8	23.0	16.4		
Aggregated overall mean							3.48	

Key: VLE-Very large extent, LE-Large extent, M-Moderately, SE-Small extent, NE-No extent

The findings in Table 3 indicates that majority of the respondents confirmed that the participation of stakeholders in use of manual communication varied greatly. Most of them indicated that: Head-teachers mostly participated in manual communication (mean = 4.77; SD = 0.09). Specifically, 90.2% (55) of the teachers affirmed that head teachers used manual communication to a very large extent. While 6.6% and 3.3% were of the opinion that the use of manual communication by head teachers was moderate and to small extent respectively. Similarly, class teachers mostly use manual communication (mean 4.48; SD = 0.06). 47.5% and 52.5% of the teachers felt that class teacher used manual communication to a very large extent and large extent respectively. This provided a good gesture in handling learners with HI since class teachers are the ones who are in constant contact with the learners and are better equipped with the needs of various learners in class.

An overwhelming majority (mean = 4.41, SD = 0.06) of the teachers who took part in the study generally agreed that teachers on duty used manual communication to a very large extent (41.0%) and large extent (59.0%). Peers counselors also employed the use of manual communication (mean = 3.95, SD = 0.11) according to this study. 21.3% and 65.6% of the respondents felt that the use of manual communication was to a very large extent and large extent respectively by peer counselors. This could have been attributed to the fact that learners with different cases including those with HI approached peer counselors for counseling and the mode of communication in cases could require the use of manual communication

mode. The use of manual communication was not very popular among the invited parents (mean = 2.51, 0.18) as majority of the teachers (59.0%) and 18.0%) were of the opinion that the invited guest used manual communication to a small extent and no extent respectively. This could be true since manual communication is not a common communication mode and can only be used among families whose membership includes those with HI.

Majority of invited speakers (mean = 3.18, SD = 0.2) used manual communication according to the teachers surveyed. This could be attributed to the fact that the school administration usually take into consideration the respective needs of the learners including those learners with HI and hence invite speakers that can comfortably use manual communication. Manual communication was not very popular among the MOEST officials (mean = 2.21, SD = 0.14), school board members (mean = 2.51, SD = 0.18) and religious institution (mean = 0.64, SD = 0.14).

Qualitative data from the head teachers confirmed that there was variations in the use of manual communication among school stakeholders. As was noted in two occasions, the head teachers reported that:

Manual communication is not easy.....many of the stakeholders in our school are not conversant with it.....(Head-teacher₉).

To identify those who are fluent in manual communication around the school environment has not been easy tous. In most cases we usually invite SL experts to communicate to our pupils.(Head-teacher₁₀).

Theoretical Framework

This study was based on total communication (TC) theory as pronounced Holcomb (1967). This theory advocates for the use of more than one way of communication depending on the need of a given learner. The instructor has several ways of communication at his disposal to choose from such as manual, written, oral or even auditory. Depending on the need of a particular learner, there are cases in which the instructor may choose to use oral but other situations may call for the use of signing in communication or both. The use of total communication allows for flexibility in communication due to the availability of several methods of communication with the hearing impaired. According to Lepot-Froment and Clerebaut (1996), total communication can be used as a powerful tool to improve the academic performance among Learners with hearing impairment. For learning to occur, there must be an effective communication between the learner and the instructor (Mapolisa & Tshabalala, 2013).

The choice of communication method is very vital for the passage of information and the use of Total Communication is valuable in communicating with Learners with hearing impairment as it allows for adjustment of the choice of communication method depending on a particular situation. Total Communication favors those with hearing impairment in all aspects of life be it psychological, language development or even on their academic achievement as cited by Serban (2013). The need for effective communication and understanding between learners with hearing impairment, their hearing counterparts and teachers is needed for holistic development and academic achievement. Total Communication provides learners and teachers with several communication methods that are employed in the selection of a given form of communication. Combination in Total Communication is purely based on the particular needs of a given child. Holcomb (1970) encourages teachers who find Total Communication suitable at any given situation to use the communication methods which appeals and relevant to a given child at a given stage of development. The use of a given communication method as usual present a distinct challenge depending on a particular learner and situation as cited by (Wambui, 2012).

Many researchers agree that learning in any society takes place when people mingle, and this occurs to a greater extent when people can communicate and understand each other effectively. Child's academic performance has a direct link with the effective understanding of what is taught in class. This heavily depends on the effectiveness of learning communication. The selection of a communication method which enables communication process to be smooth without breakages is thus very important to all children irrespective of where they are found or their nature of specialties. The choice of communication mode that will be most effective is very important. The theory asserts that in Total Communication all forms of communication for learners with hearing impairment may be incorporated and when well used will make these learners to be at par with average learners. In a learning environment, this theory is found to be relevant because Total Communication embraces the use of various forms of communication simultaneously using both manual and spoken words (Ekwama, 2003).

4. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study established the influence of manual communication on academic performance of learner with hearing impairment in inclusive settings in Kisumu County. Most teachers and learners were in agreement that the use of manual communication affected the interaction with the learners with HI (62.0% (mean = 3.58, SD = 0.10). This could mean that interaction among learners with HI and their hearing counterparts and even teachers who may not have had the knowledge of manual communication is not very productive. This finding was in line with that of Picou et al. (2011) who posit that the use of manual communication was very unpopular language among individuals with hearing abilities making it difficult for learners with HI to communicate with hearing learners. It was also found that through manual communication mode (finger spelling) learners with HI could improve greatly their spelling ability. This was indicated by 76.7% (99) respondents as shown in Table 4.11. This finding confirms the study by Heward (2006) that finger spelling is strongly advocated for due to its ability to sign all English words. This was however contrary to the findings of Mba (2015) who reported that much of learning and word mastery were best done orally.

Manual communication mode was also noted as slow form of communication (mean = 3.56, SD = 0.10). This meant that learners who fully rely on the use of manual communication as the communication method, take a lot of time to understand the curriculum content and this explains why their academic performance is low. These findings were similar to those found by Moores (2006) who reported that lip-reading is a bit difficult to learn and require more time to be mastered. This results in low academic performance of learners who entirely depend on this mode of communication especially those with HI who commonly use this method (Karanja, 2012). Such learners can only understand a portion of what is taught in class through lip reading and the choice of the appropriate communication was necessary for effective communication in class as asserted by Curzon (1991).

Regression and correlation analysis indicated a strong negative correlation (coefficient of correlation = -.030, significant = .568) between the use of manual communication and academic performance of learners with HI. The use of manual communication had a negative impact on the academic performance of learners with HI based on the factors considered in this study. This was true according to Mwanyuma (2016) who found that the current Kenya educational curriculum is not based on learners with HI whose mode of communication is mainly manual communication.

The study found out that most teachers were not comfortable with the use of manual communication mode and whenever it was used, it had a negative impact on the academic performance of learners with HI due to communication breakdown. The study therefore recommends that the government of Kenya through the ministry of education should organize and conduct in-service trainings for all teachers in primary schools with inclusive settings in the use of manual communication mode. Manual communication was very popular in most schools in Kisumu County. Manual communication was found to hinder communication between learners with HI and hearing learners. It was also found that the use of manual communication consumes a lot of time and only a fraction of the curriculum content delivered by use of manual communication could be understood by learners with HI. Manual communication was found to have a strong negative correlation (coefficient of correlation = -.030, significant = .568) with academic performance of learners with HI.

Manual communication is also used in most inclusive primary schools in Kisumu County. Manual communication negatively affects class interaction especially when it involves the learners with HI and those with the hearing ability. Manual is critical in academics, social interaction, parent interaction, learners with HI, hearing learners' relationships, adherence to school rules, career choice, sports and games activities. The use of manual communication has a negative impact on the academic performance of learners with HI in inclusive primary school settings in Kisumu County.

Recommendation

The study found out that most teachers were not comfortable with the use of manual communication mode and whenever it was used, it had a negative impact on the academic performance of learners with HI due to communication breakdown. The study therefore recommends that the government of Kenya through the ministry of education should organize and conduct in-service trainings for all teachers in primary schools with inclusive settings in the use of manual communication mode. The study recommends that the government of Kenya should allocate more funds to primary schools with inclusive settings. This will assist the school managers and teachers in charge of SL in implementing fully the use of Total Communication modes in these settings. The study also recommends that the ministry of education should have more intervention in place to bring on board more teachers in developing positive attitude with regard to inclusion.

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