Psychosocial Correlates of Academic Performance among Primary School Pupils with and without Hearing Impairment

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Abstract: *This was a correlational design study that explored the relationship between pupils' psychosocial variables such as self-esteem, hearing status, attitude towards teachers and school; and between these and academic performance. A total of 194 pupils, 110 hearing normally and 84 hearing impaired were compared in self-esteem and academic performance. While there was no significant relationship between hearing status and academic performance, there was a significant difference in self-esteem with hearing status and a significant relationship between self-esteem and academic performance. This paper appeals to education stakeholders including parents, the Government, and NGOs to put much emphasis on developing self–esteem among school children.*

Key words: Self-esteem, hearing status, hearing impaired, attitude

INTRODUCTION

The purpose of this study was to explore the relationships between pupilsô psychosocial variables, such as self-esteem, hearing status, attitude towards teachers and school; and academic performance. The research purpose was inspired by the problem of academic underperformance in Tanzania, and specifically, by the argument that pupils with hearing impairment underperformed in academics relative to their non-impaired counterparts (Kiyaga & Moores, 2003; Satapathy, 2008; Kyaruzi, 2009). Kiyaga & Moores (2003) argue that in developing nations, most young students with hearing impairment are doing poorly in their classes due to absence of the hearing impaired role model and lack of specialized training in sign language or visual teaching method. Similarly, Kyaruzi (2009) has concluded that hearing impaired pupils are achieving poorly in academics in comparison to pupils without hearing impairment. Satapathy (2008) found significant difference in academic performance between pupils with hearing impairment and non-impaired pupils in India. The ongoing argument - in the mentioned studies, triggered my doubt as to whether being hearing impaired could sufficiently explain oneôs academic performance. The discussion on academic underperformance among hearing impaired pupils will be prolonged soon, but before that it sounds natural let us bring forth for this study a working definition of academic performance.

The terms academic performance, academic achievement, and academic success have been used interchangeably in the literature (Harackiewicz et al., 1998; 2002; SACSA/NASPA Region III/TACUSPA, 2007) to describe three end products - firstly, as a performance goal, reflected in class ranks, grades, GPA, and divisions obtained from examination results; secondly, as a mastery goal, reflected in

studentsô acquisition of skills, interests in subjects, and efforts expended when studying the subjects; and thirdly, as a self-authorship, reflected in oneôs ability to internally define oneôs values and beliefs before being able to construct knowledge (Magolda, 2001). The author chose to adopt the first description of academic performance given its practical usage in Tanzania. In Tanzania, the grades in primary school level are interpreted as: óAô= 81-100 marks, represents very good performances; óBô= 61-80 marks, good performances; óCô= 41-60 marks, satisfactory performances; óDô= 21-40 marks, weak performances; and óEô= 0 - 20 marks, which mean very weak performances. The grades óAô, óBô, and óCô, are further labeled as passing grades while grades óDô and óEô are labeled as failing grades. In this study the same interpretation was applied during analysis to determine failing and passing students. Specific data for such interpretation was represented by Standard Four pupilsô results which were traced in their school records.

Performance in academic subjects has been a concern of educationists and researchers around the world for years. Arap-Martim (1986) citing Dubois (1964) reports that around the year 2200 B.C., the emperor of China examined his officials every third year and after three examinations, he either promoted or dismissed them from civil service. In Tanzania, academic performance is carrying a similar weight due to the fact that from one cycle of education ladder to the other, examination results are used as a selection criterion. In addition, examination results have been used to place students in specific streams such as science, business, or arts especially in transition from Form Two (the second year of secondary education in Tanzania is referred to as Form Two) to Form Three, and from Form Four to Form Five. The concept Form one, Form Two till Form Six in Tanzania education system refers to first, second to sixth year of study in secondary education which one acquires after passing central examination at the end of primary education cycle. Primary education in Tanzania is a seven years of study, followed by lower secondary education four years and advanced secondary education two years. Even after completion of education at university level, academic performance usually reflected in examination results are still used as the major criteria to shortlist candidates for employment interviews by some employing organizations, especially when one wants to work as an academic member of staff in higher learning institutions.

Given the importance of academic performance and the ongoing arguments with regard to underperformance among hearing impaired pupils in comparison to their counterpart pupils without hearing impairment (Kiyaga & Moores, 2003; Kyaruzi, 2009), it was natural to develop curiosity as to whether hearing status could empirically and sufficiently determine academic performance. In addition, the role of academic performance as a determinant of both employment chances and reaching higher levels of education; is extending to all groups of people including pupils with hearing impairment. However, it seems that despite being in disadvantageous group, little has been done to specifically increase the chances of academic performance for pupils with hearing impairment. Arap-Martim (2010) argues that despite international conventions on disabilities, education policies and

practices in developing countries have not been adequately addressing learnersô disabilities probably due to inadequate provision of recourses. In most such developing countries, Tanzania inclusive, there is a common curriculum upon which public examinations are based; and this cannot accommodate every kind of disability found among the pupils in the country. This follows then that learners are tested in the same curriculum regardless of their hearing status.

Throughout this study the term hearing status has been applied to mean whether one is hearing normally or one has hearing impairment. Researchers (Niparko, 2000; Olsen, 2003; Reynolds, Roush, 2001; Kurtzer-White, & David, 2001) agree that hearing impairment refers to the temporary or permanent loss of some or all hearing in one or both ears. Hearing impairment can be classified as conductive hearing loss, which is a temporal interference during perception process from outer ear to middle or inner ear; sensorineural hearing impairment, which is a permanent abnormality in the cochlear hear cells of the inner ear, the auditory nerve, or the auditory center of the brain; and mixed hearing impairment, which involves the combined symptoms of conductive and sensorineural impairments (Niparko, 2000; Olsen, 2003; Reynolds and Roush, 2001; Kurtzer-White & David, 2001).

Colin, Andrew, &Marisol (2000) give an account of the World Health Organizationôs (WHO) classification of hearing status according to what one can hear. Such classifications are; no impairment or hearing normally, whereby one hears sounds ranging from 0-25 decibels (dB) with no or very slight hearing problems; slight or mild impairment, whereby one hears sounds ranging from 26-40 dB with ability to hear and repeat words in speech and normal conversations at one meter; moderate impairment, in which one hears sounds ranging from 41-60 dB with an ability to hear and repeat words using raised voice at 1 meter; in severe impairment, one hears sounds from 61-80 dB with ability to hear some words when shouted into better ear; and lastly, the profound impairment including deafness, whereby one can only hear sounds greater than 81 dB. In the profound impairment category, a hearing aid may help but one will not be able to articulate words normally. In this study however, only two categories of hearing status were compared namely; normally hearing pupils and hearing impaired pupils. In this study nothing was done to categorize the groups because the groups already exist as normally hearing and hearing impaired pupils in the schools. In an attempt to trace the argument by researchers (Kiyaga & Moores, 2003; Satapathy, 2008; Kyaruzi, 2009) regarding academic underperformance among the pupils with hearing impaired relative to their counterpart normally hearing pupils, it was found clearly that in Tanzania, the available data (URT, 2010 & 2011) for academic performance are not distinguishing the performances of pupils with hearing impairment or even children with disabilities from the performances of children without hearing impairment. However, such data indicate that the higher the education level reached the smaller the number of pupils with hearing impairment within the same cycle. Table 1 illustrates this argument in a more vivid picture.

Table 1: Number of pupils with hearing impairment in primary and secondary

	Deaf/Mute	Percent	Deaf/Blind	Percent
Std I	1,018	22.6	75	15.8
Std VII	433	9.6	44	9.6
Total in Primary school	**4,496**	**100**	**457**	**100**
F I	159	31.2	33	20.1
F IV	74	14.5	39	23.8
F V	2	0.4	1	0.6
F VI	1	0.2	1	0.6
Total in Secondary school	**510**	**100**	**164**	**100**
Grand total	**5,006**	**100**	**621**	**100**

Source: Adopted from URT, 2011

The decrease of the number of pupils with hearing impairment with the increase of class level within each education cycle as indicated in Table 1, though appears to be an indirect measure of academic achievement, it is a strong indication on how academic underperformance is affecting this group of disadvantaged pupils. In URT (2011), it is reported that the proportion of primary school enrolment of pupils with disabilities is 0.36%. This percent can be interpreted as the number of pupils with disability relative to all enrolled pupils in primary schools. The very authentic data source reports that ǵthis proportion is small mainly due to low response of the community in sending pupils with disability to school.

The available records about academic performance for all pupils indicate that there is academic underperformance, which is particularly acute in mathematics, science subjects, and English language in primary schools (Joshua, 2008). For the past decade - between 1998 and 2009, primary school leaving examination (PSLE) result records have indicated that about 50 percent of the students who sat for such examinations failed (URT, 2010). During the very period, the number of students selected to join form one was lowest in 1999 at about 18.8 percent. The number rose to 67.5 percent in 2006. For eight years between 1998 and 2005, the number remained below 50 percent. Though the selection number rose above 50 percent in 2006 and 2007, this was alongside the establishment of many secondary schools in every ward in the country, following the Secondary Education Development Plan (SEDP).

In Kenya, Arap-Martim (1983; 1986; 1987; 1988; 2009; & 2010) has been studying several factors associated with academic performance among primary, secondary, and university levels in the country. The author has been reporting factors such as pupilsô self concept, significant othersô perception, sex differences, concurrent validity of the internal examinations, birth order, and multicultural equity.

Similarly, several scholars in Tanzania (Mmari, 1973; Idama & Ndabi, 1996; Chonjo & Welford, 2001; Kitta, 2004) have listed some factors such as studentsô attitude towards specific science subjects and mathematics, shortages of physical

facilities such as laboratories, libraries, and equipment; poor teaching strategies; inadequate exercises and practices among students; inadequate teacher facilitation in supporting learners to master key subject concepts; misinterpretation of information; teacherôs competence in pedagogy; sex, location, age, and parentôs education. Joshua (2008; 2011) report thinking styles (reflectivity-impulsivity and deep-surface thinking styles) as another set of factors to be added in the list in an attempt to explain academic performance.

Mmari (1973) and Kisanji (1995) address the question of attitude as being related to pupilsô academic performance. However, Kisanji (1995) does not look at the attitude of pupils towards specific subject but rather studied the attitude of the community towards pupils with hearing impairment with regard to their academic performance. Analyzing the attitudes of the community towards people with disability through proverbs and folklores in Tanzania, Kisanji (1995) found that there were proverbs in the community that reflected community awareness of the difficulty of teaching people with hearing impairment. Specifically, regarding their ability to learn, Kisanji has documented some Kiswahili proverbs such as:

> ó*Nduguyo akifa sikio utapata shida kuita'* (When your relative's ear dies, you will have great problems to call him/her); *'Kumwimbia kiziwi ni kumaliza nyimbo bure'* (To sing to for a deaf person is a mere waste of songs). These proverbs refer to inability to hear and difficulty of engaging in communication as well as enjoying audition dependent activities such as music. Other proverbs are; *'Sikio la kufa halisikii dawa' (*An ear destined to die does not respond to medicine) - it cannot be cured, i.e., it refers to someone who does not stop a socially unacceptable behavior despite repeated advice against it; and lastly, *'Asiyesikia husafiri mbali sana, maana hata akiambiwa anakokwenda hatasikia'* (A person who does not heed to good advice travels very farbefore realizing she/he is off-track), i.e., young people shouldtake heed of advice given to them lest they regret.ô

The proverbs cited as examples by Kisanji, are leaning towards evaluating people with hearing impairment as being incapable of learning or rather possessing low performance potentials. Such a generalized negative attitude of the community towards people with hearing impairment by Kisanji (1995) implies how pupils with hearing impairment may in one way or another be discouraged to learn and perform better in academic subjects by lowering their self-esteem. Such implication was also established by other researchers (West, Fish, & Stevens, 1980; Arap-Martim, 1983; 1987; Reynolds, 1988;Lockett & Harrell, 2003; Schmidt & Padilla, 2003; Bankston & Zhou, 2002; and Harris, 2009) who all found significant relationship between self-esteem and academic performance.

Van Laar (2000) and Satapathy (2008) found no significant relationship between self esteem and academic performance among both pupils with hearing impairment and non-impaired ones. Such inconsistent findings reported by Van Laar and

Satapathy influenced an inclusion of self-esteem among psychosocial variables to be studied as a correlate of academic performance among hearing impaired pupils.

Rosenberg (1965) described self-esteem as a favorable or unfavorable attitude toward the self. This definition by Rosenberg has been generally considered the evaluative component of the self-concept, a broader representation of the self that includes cognitive, behavioral, and affective components (Blascovich & Tomaka, 1991). In this study, the working definition for the term self-esteem shares the same meaning as it was propounded and measured in a theoretical works by Rosenberg (1965) and Franzoi (2000). Specifically, it means oneôs satisfaction with oneôs self, feelings of oneôs good qualities, oneôs belief that one is able to do things like most other people, oneôs belief of oneôs worthiness, and taking positive attitude towards oneself.

THE AGENDA FOR THE PRESENT STUDY

The argument by Kiyaga & Moores (2003); Satapathy (2008); & Kyaruzi (2009) has laid a foundation upon which further knowledge with regard to academic performance of pupils with hearing impairment could be sought to ensure that all people in Tanzania benefit from education system. However, unlike Satapathy (2008), Kiyaga & Moores (2003) and Kyaruzi (2009) did not explore the statistical details of the difference in academic performance between hearing impaired and non-hearing impaired pupils. Though Satapathy (2008) analyzed and found a statistical significant difference between hearing impaired and non-impaired pupils, the magnitude of difference in terms of eta-squared was not indicated. In addition, the researchers could not show the extent to which hearing status could explain academic underperformance of pupils with hearing impairment.

Kisanji (1995) investigated attitudes of the community towards the pupils hearing impairment, and the impact of such attitudes in lowering the self-esteem of pupils with hearing impairment, the work does not statistically analyse academic achievement of pupils with hearing impairment in relation to their self-esteem relative to other pupils without hearing impairment. Lastly, the argument by Mmari (1973) that oneôs attitude towards the subject, school and teachers, determines oneôs academic performance, could not be ignored. However, Mmari (1973) does not make a distinctive analysis of pupils with hearing impairment from non-hearing impaired ones. A study focusing on exploring the psychosocial correlates of academic performance such as self-esteem, hearing status, attitude towards teachers and school; is imperative.

In the light of the named agenda, the cognitive psychologistsô view is considered relevant in an attempt to address the problem of academic underperformance of pupils with hearing impairment. Specifically, a theory of sensory integration by Ayres (1972) is chosen to guide the way. In the theory of sensory integration, Ayres (1972) presents three major postulates which are:

(i) Learning depends on the ability to take in and process sensations from movement and the environment and use it to plan and organize behaviour;

(ii) The decreased ability to process sensation may lead to the difficulty in producing appropriate actions, which in turn may interfere with learning and behavior; and
(iii) Enhanced sensation, as a part of meaningful activity that yields an adaptive interaction, improves the ability to process sensation, thereby enhancing learning and behavior.

An adaptive interaction represents give and take with the environment in which an individual meets a challenge or learns something new and the environmental changes. An assumption of sensory integration theory is that adaptive interactions promote sensory integration and the ability to contribute to an adaptive interaction also reflects sensory integration.

Ayers (1972, 1989) links inner drive and motivation to self-direction and self-actualization and indicates that children with sensory integrative dysfunction often show little motivation (or inner drive) to be active participants, try new experiences, or meet new challenges. Intervention leads to a stronger inner drive to seek out, self actualizing or growth-promoting activities that, in turn, enhance sensory integration. In addition, childrenôs self-esteem and self-actualization are the mental phenomena portraying sensory integration very much as a brain-body theory (Ayres, 1972).

Supporting the Ayresô (1972) view, Zyl (2004) has argued that school performance needs to be viewed and studied in a holistic way. If any of the individualôs cognitive processes such as perception, spatial and numerical, reasoning, coordination, memory, and verbal comprehension are not working, this will influence the childôs school performance accordingly. Likewise, Ayres (1995) has argued that, for perfect school success, there should be a relationship between the senses, sensory integration, perception, and school learning. She defined sensory integration as the neurological processes that organize sensation from oneôs own body and from the environment making it possible to use the body effectively within the environment.

GENERAL OBJECTIVE OF THE STUDY

The purpose of this study was to explore the relationships between pupilsô psychosocial variables, such as self-esteem, hearing status, attitude towards teachers and school; and academic performance. This was achieved through specific objectives such as: to explore the relationship between pupilsô hearing status and their selfï esteem; to explore the relationship between pupilsô selfï esteem and learnersô academic performance; to explore the relationship between studentsô hearing status and their academic performance; and lastly, to explore relationship between studentsô attitudes towards teachers and schools and their academic performance.

CONCEPTUAL DEVELOPMENT AND RESEARCH HYPOTHESES

In the light of the background to the problem, the Ayres (1972) sensory integration theory and literature reviewed, and given the general and specific objectives of this study, it was hypothesized that there could be a relationship between pupilsô self esteem, hearing status, attitude towards teachers and schools and their academic

performance that would be reflected in test results. In addition, variables such as sex, parentsô marital status, and parentsô education level were included in the model as possible intervening variables. The conceptual model for this study is presented in Figure 1. It should be clear that the arrows in the model indicate the possible relationships, any of which does not imply causation, but rather, the fact that the factors are related, thus, the occurrence of one factor, predicts the occurrence of the other.

From such a conceptual framework therefore, four major hypotheses guided this study. First, there would be a significant relationship between pupilsô hearing status and their self-esteem. This hypothesis predicted that pupils with hearing impairment would perform higher than their counterpart pupils without hearing impairment. Secondly, there would be a significant relationship between pupilsô self-esteem and learnersô academic performance. It was thought that pupils with high selfi esteem would perform higher in academics than pupils with low selfï esteem. Thirdly, there would be a significant relationship between studentsô hearing status and their academic performance.

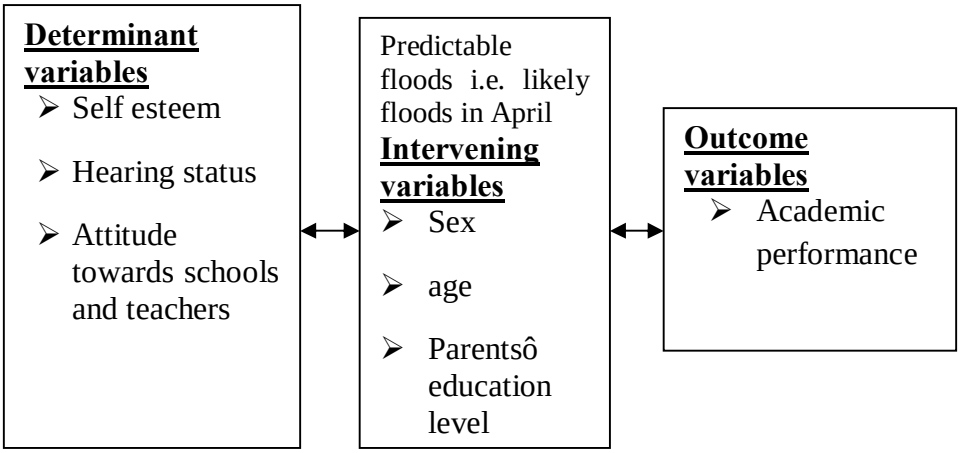

Figure 1*:* Conceptual framework for the study

RESEARCH HYPOTHESES

In this hypothesis, pupils without hearing impairment were expected to perform higher in academics than their counterpart pupils with hearing impairment. Second, there would be a significant relationship between studentsô attitudes towards teachers and schools and their academic performance. Basing on the findings by Mmari (1973), it was expected that pupils with positive attitudes towards their teachers and school would perform higher than pupils with negative attitude toward their teachers and school.

METHODOLOGY

The study Design

The research employed quantitative paradigm and specifically, a correlational design. All subjects were exposed to all measures of the study and their responses correlated.

Population and Sample Size

The study targeted pupils with hearing impairment as the population. However, these had to be those who were studying in at least standard five, since the same had already sat for National Standard Four Examinations, which could represent academic performance in this study. In addition non-impaired pupils of the same level of education were targeted for comparison. In Tanzania, the number of pupils with hearing impairment in primary schools is estimated around 4,748 found in about 44 primary schools (URT, 2010). The study was conducted in three schools with hearing impairment units, namely; Itiji and Kilimo in Mbeya region and Mtwivila in Iringa region in Tanzania. However, the selection of Mbeya and Iringa regions among others in the country was not randomized but rather snowballing and that were easily accessible by the researcher. The main criterion for selection of the schools in the regions was a school with both hearing impaired and non-impaired pupils for comparison purposes. In all three schools the number of pupils with hearing impairment was as small as 44 in Itiji A, 31 in Kilimo A, and 57 in Mtwivila; making a total of 132 pupils. Non-impaired pupils were 104 in Itiji A, 78 in Kilimo A, and 112 in Mtwivila, making about 300 pupils in total.

Table 2: Participants' variables (N = 194)

Variable	Level	f	Percent
Sex	Male	97	50.0
	Female	97	50.0
Hearing status	Normal Hearing	110	56.7
	Hearing Impaired	84	43.3
Fatherôs education level	No formal education	24	12.4
	Standard seven	104	53.6
	Form four and certificate	48	24.7
	Form six and diploma	12	6.2
	First degree	6	3.1
Motherôs education level	No formal education	20	10.3
	Standard seven	80	41.2
	Form four and certificate	73	37.6
	Form six and diploma	10	5.2
	First degree	11	5.7
Parentôs marital status	Married	136	70.1
	Single, not married	8	4.1
	Widowed	22	11.3
	Separated	21	10.8
	Divorced	7	3.6

After stratifying the pupils in terms of sex and hearing status, the sample was randomly selected. Numbers 1, 2, 3, 4, and 5 were written on the pieces of papers repeatedly and mixed thoroughly in a container to allow each pupil within sex and hearing status to draw one blindfolded piece of paper. Each student who drew an even numbered piece of paper was included in the sample, thus obtaining a sample size of 194 pupils.

Participants in this study were heterogeneous in nature. Their age varied between a minimum of 10 years and 17 years with a mean age of 12.96 and standard deviation of 1.38. Other participantsô variables are indicated in Table 2.

Measures

Respondents were given a questionnaire to fill in. The questionnaire comprised of participant variables such as sex, hearing status, fatherôs education level, motherôs education level, and parentsô marital status. The last part of the questionnaire had the Self ï esteem Scale (Rosenberg, 1965), comprised of 10 items. The scale was set at five point scale from óstrongly agreeô to óstrongly disagree.ô Examples of items in the Self-esteem scale included "*I am able to do things as well as most other people*" and "*At times I think I am no good at all*". In this scale respondents were asked to select only one option which closely described their true experience in life. The negatively worded items in the scale were reversed before counting respondentôs scores for the whole scale so that in all items a low score represented low self esteem and high score represented high self esteem. A median score was then used as a cutoff point to separate respondents with low self esteem from those with high self esteem.

In addition, the Studentsô Attitudes towards Teachers and Schools Scale (SATS), comprising of 43 items was prepared. The SATS asked respondents to show their responses in a five point scale from strongly disagree to strongly agree, with low score representing negative attitudes and high scores representing positive attitudes. Like in the self esteem scale, respondents were asked to select only one option which closely described their true experience in life. Similar procedure used in calculating total score of each respondent in the self esteem scale followed. Similarly, a median score was used as a cutoff point to separate respondents with negative from those with positive attitudes towards teachers and school.

Validity and Reliability of the Instruments

The Selfï esteem Scale by Rosenberg (1965) is arguably the most widely-used self-esteem measure in social science research (Wilma *et al.*, 2007). Research using the scale (Blascovich & Tomaka, 1993; Rosenberg, 1986) has reported high reliability with test-retest correlations in the range of .82 to .88, and Cronbach's alphas .77 to .88. In this study, the scale reached a reliability of Cronbach alpha coefficient of .79. To ensure the validity of this scale, the instrument was translated from English to Kiswahili by one expert, and the other expert translated the Kiswahili version back to English. This assured the validity of the instrument without changing the original meaning of the items in the instrument.

The Studentsô Attitudes towards Teachers and Schools Scale (SATS) was constructed basing on the tricomponent view of defining the term attitude as described in the ABC model of attitude (Franzoi, 2000). According to the view, an attitude refers to a positive or negative evaluative judgment of an object; and that attitudes are formed through affective, behavioral, and cognitive processes (Franzoi, 2000). Franzoi (2000) further clarifies that the three sources of evaluative judgments may determine attitudes singly or in combination. An instrument was constructed in English language. To ensure the construct validity of the SATS, the same was subjected to translation process from English to Kiswahili by one translator, and then from Kiswahili to English by another translator. With regard to reliability, in the present sample, theSATS reached a very good internal consistency, with a Cronbach alpha coefficient of .97.

Lastly, academic performance reflected in the form two results was obtained by tracing the scores of the students in the four academic subjectsô results in standard four examinations. The subjects included Mathematics, English, Science, and Kiswahili. Originally, standard four resultôs score was out 50. These scores were converted out of 100 to enable easy translation of grading system. A total score in the four subjects for each respondent was then used to represent academic performance as dependent variable of the study objectives. The standard four examinations, being formally prepared by National Examinations Council of Tanzania (NECTA) were considered valid and reliable since they undergo formal moderation procedures (Omari, 2008).

RESULTS

Academic Performance

Academic performance was the dependent variable in the objectives of this study. Academic performance was split in the two samples; namely, hearing impaired pupils and non-impaired. Table 3 shows the summary results of general, and the split sample of both hearing impaired and non-impaired students.

Table 3: Participants' Academic Performance (N = 194)

Grade	Results by hearing status					
	General		Non-impairedpupils		Impairedpupils	
	F	%	*F*	%	*f*	%
E	108	55.7	65	59.1	43	51.2
D	54	27.8	26	23.6	28	33.3
C	23	11.9	13	11.8	10	11.9
B	8	4.1	6	5.5	2	2.4
A	1	.5	-	-	1	1.2
Total	194	100.0	110	100.0	84	100.0

Table 3 indicates that academic performance of the participants was not so much good as around 16% (32) of the participants scored in grades A, B, and C. About 83% of respondents scored in weak and failing grades such as D, and E.

The Relationship between Hearing Status and Academic Performance

The relationship between pupilsô hearing status and academic performance was explored using an independent t-test. Table 4 summarizes the findings.

Table 4: Hearing Status Difference in Self-Esteem

				t-test				
Sex	**N**	**M**	**SD**	*T*	*df*	*P*	*Mean difference*	*Eta square*
Normal Hearing	110	38.77	4.5	7.269	192	.000	5.844	.22
Hearing Impaired	84	32.93	6.2					

Table 4 indicates that there was a statistically significant difference for respondents without hearing impairment (M = 38.77, SD = 4.5), and respondents with hearing impairment (M = 32.93, SD = 6.2; t (192) = 7.269, p = 0.000 (two tailed) in reporting self esteem. The magnitude of difference was large (eta-squared = .22). This might be interpreted that respondents without hearing impairment were more likely to report high self esteem than their counterparts with hearing impairment.

The Relationship between Pupils' Self - esteem and Academic Performance

Generally, respondents gave the expected responses to the items in the self-esteem scale. Negatively worded items received relatively few supporters than positively worded items. In total score, most respondents 54.1% (105) reported low self-esteem while the remaining 45.9% (89) reported high self esteem. The relationship between self esteem and academic performance was explored using Pearson product-moment correlation coefficient and results are presented in Table 5.

Table 5: Correlations among Self Esteem, Attitudes, and Academic Performance

Hearing status	**Variable**	**Descriptive data**			**Correlations**			
		N	***M***	***SD***	**1**	**2**	**3**	**4**
Hearing	Age	110	38.8	4.5	1			
	Total self esteem	109	189.4	14.4	-.108	1		
	Total attitude	110	23.4	6.9	-.018	.22(*)	1	
	Total academic performance	110	93.8	27.4	-.003	.22(*)	.10	1
Impaired	Age	84	32.9	6.2	1			
	Total self esteem	84	148.8	40.3	-.25(*)	1		
	Total attitude	84	24.7	5.56	-.15	.78(**)	1	
	Total academic performance	84	98.7	22.23	-.12	.22(*)	.13	1

Table 5, indicates that for respondents without hearing impairment, there was a significant positive but low correlation between the two variables, r = .22, *n* = 110, *p*< .05, with high level of self esteem associated with high levels of total academic performance. Similar results were obtained for respondents with hearing impairment where, there was a significant positive but low correlation between self-esteem and academic performance, *r* = .22, *n* = 84, *p* < .05, with high levels of self esteem associated with high levels of total academic performance. This can be interpreted that regardless of hearing status, the higher one scored in self esteem, the higher one scored in academic performance; and thus there was no any significant difference between the two groups.

The Relationship between Students' Hearing Status and Academic Performance

The relationship between studentsô hearing status and academic performance was explored using an independent samples t-test. Table 6 indicates the results.

Table 6: Hearing Status Difference in Academic Performance

				t-test				
Hearing status	**N**	**M**	**SD**	*T*	*Df*	*P*	Mean difference	Etasquare
Normal Hearing	110	93.8	27.4	-1.38	191.3	.17	-4.9	.07
Hearing Impaired	84	98.7	22.3					

Table 6 indicates that there was no statistically significant difference for respondents without hearing impairment (M = 93.8, SD = 27.4), and respondents with hearing impairment (*M* = 98.3, SD = 22.3; *t* (194) = -1.38, *p* = .17 (two tailed) in academic performance. The magnitude of difference was very small (eta-squared = .07). This might be interpreted that respondents without hearing impairment and their counterparts with hearing impairment were performing similarly in academic subjects. Any differences between the two groups could be attributed to chance or any other variables rather than just being in either of the group.

The Relationship between Students' Attitudes towards Teachers and Schools and their Academic Performance

Generally, about 50% (97) respondents reported negative attitudes towards their teachers and schools, 49.5% (96) reported positive attitudes, and 0.5% (1) was missing. The relationship between studentsô attitudes towards teachers and schools and academic performance was explored using Pearson product-moment correlation coefficient. Table 6 indicates that for respondents without hearing impairment, there was a very low insignificant positive correlation between the two variables, *r* = .10, *n* = 109, *p*< .29. Similar results were obtained for respondents with hearing impairment where, there was a very low insignificant positive correlation between the two variables, *r* = .12, *n* = 84, *p*< .25. This was interpreted that regardless of hearing status, any higher or low scores observed in academic performance were

either a result of chance or other variables other than attitudes toward teachers and school.

Predicting Academic Performance from the Model

To statistically determine the best predictors of academic performance in the model, direct logistic regression was performed to assess the influence of a number of factors on the likelihood that respondents would pass in their standard four examinations. The model contained five independent variables (sex, age, respondentsô hearing status, mothersô education level, fathersô education level, parentsô marital status, respondentsô self esteem, and respondentsô attitude towards schools and teachers. Tables 7(a) & (b) present the results.

Table 7(a): Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Classified Percentage Correct
1	153.378(a)	.098	.166	83.9

Table 7(b): Logistic Regression Predicting the Likelihood of Academic Performance

Variable	*β*	S.E.	Wald	*df*	*p*	Odds Ratio	95% C.I. for Odds Ratio	
							Lower	Upper
Sex(1)	-.147	.423	.121	1	.728	.863	.377	1.979
Age	.029	.170	.030	1	.863	1.030	.737	1.438
Hearing status)	.178	.512	.121	1	.728	1.195	.438	3.257
Motherôs education			3.765	4	.439			
➢ No formal education	-1.070	.753	2.019	1	.155	.343	.078	1.501
➢ Standard seven	-.746	.817	.833	1	.361	.474	.096	2.353
➢ Form four and certificate	-2.436	1.459	2.789	1	.095	.087	.005	1.527
➢ Form six and diploma	-1.694	1.452	1.362	1	.243	.184	.011	3.163
Fatherôs education			4.800	4	.308			
➢ No formal education	-.374	.869	.186	1	.667	.688	.125	3.777
➢ Standard seven	.670	.855	.614	1	.433	1.955	.366	10.449
➢ Form four and certificate	1.450	1.350	1.154	1	.283	4.265	.302	60.158
➢ Form six and diploma	1.394	1.275	1.195	1	.274	4.031	.331	49.074
Parentsô marital status	.560	.487	1.321	1	.250	1.750	.674	4.544
Self esteem	.166	.061	7.312	1	.007	1.180	1.047	1.331
Attitude towards teachers and schools	-.012	.011	1.253	1	.263	.988	.968	1.009
Constant	-5.721	3.225	3.147	1	.076	.003		

The full model containing all predictors was statistically significant, χ^2 (14, N=194) = 20.01, p < .13, indicating that the model was able to distinguish between

respondents who failed from those who passed. Table 7(a) indicates that the model as a whole explained between 9.8 % (Cox and Snell R Square) and 16.6 % (Nagelkerke R square) of the variance in academic performance, and correctly classified 83.9 % of cases. As shown in Table 7(b), only self esteem among the independent variables made a unique statistically significant contribution to the model ($p< .007$). The strongest predictor of academic performance in the model thus, was self-esteem which recorded an odd ratio of 1.18. This means that respondents who reported high self-esteem were over 1 times more likely to pass in academics than those who reported low self-esteem when all other factors in the model were kept under control.

DISCUSSION

These results support some previous findings. With self-esteem positively associated with academic performance among pupils, the findings support those of Arap-Martim (1983; 1987), Reynolds (1988), Harris (2009), Bankston & Zhou (2002); Lockett & Harrell (2003); Schmidt & Padilla (2003); and West, Fish, & Stevens (1980). Arap-Martim (1983) found that school achievement was likely to be enhanced by favorableness of both self-concept and significant othersô perception among seventh-grade pupils in 13 rural primary schools serving the Kipsigis, a subsistence-level society of Western Kenya.

Reynolds (1988) found that academic self-concept is related in a positive and significant manner to grade point average in college students. Harris (2009) found that there was a significant positive correlation between levels of self-esteem, as measured by CSEI-A score and C-GPA of college students studying engineering among African-Americans. Bankston & Zhou (2002); Lockett & Harrell (2003); Schmidt & Padilla (2003); and West, Fish, & Stevens (1980) all found a positive correlation between self-esteem and academic performance.

Unlike Van Laar (2000) who reported little to no relationship between self-esteem and academic success in African American students, this study has found significant and positive relationship between the same variables. Second, this study found no relationship between pupilsô attitude toward schools and teachers and their academic performance. Such results support those of Jackson *et al.* (2010). The authors found no significant correlations between students' satisfaction scores and scholastic scores among 292 9th graders. This is however, contrary to the findings by Mmari, (1973) who indicated that studentsô attitude towards mathematics was associated with mathematics achievement. This difference might be attributed to the fact that the author focused on older pupils in secondary schools as opposed to the younger ones in the present study. In addition, Mmari focused on the specific subject (Mathematics) while this study focused on general attitude toward school and teachers.

With regard to the findings, it was indicated that sex did not make any significant contribution in the model, thus did not predict academic performance. The findings by Arap-Martim (1987) found similar results as the author found no academic performance difference with reference to sex among grades four and five in primary

schools located in rural Kenya. Similarly, Jackson *et al.* (2010) found no sex differences in scholastic success. Fourth, in this study, no significant difference in academic performance with hearing status was found. Unlike these results, Daud, *et al.* (2010) found that poor academic performance was significantly associated with mild hearing loss among primary school children. This contradiction of finding might be attributed to intervention factor. The kind of intervention provided to hearing impaired to enhance adaptation with environmental stimuli may affect the relationship between hearing status and the measured environmental stimuli to be perceived. This is clearly described by the theory of sensory integration (Ayres, 1972) that states that learning depends on the ability to take in and process sensations from movement and the environment and uses it to plan and organize behavior; second, enhanced sensation as a part of meaningful activity that yields an adaptive interaction, improves the ability to process sensation, thereby enhancing learning and behavior.

The findings in this study have indicated that regardless of hearing status, pupils with low self esteem had low academic performance while those with high self esteem were performing higher. This is an indication that the relationship between self-esteem and academic performance is not exclusively a property of hearing status; but rather it is a correlate of academic performance for both hearing and hearing impaired pupils. If pupils with hearing impairment are trained to develop both general and specific self-esteem, they will likely demonstrate high academic performance. Likewise, if non-impaired pupils are trained to develop both general and specific self-esteem, they are likely to demonstrate high academic performance. Parents, school teachers, community and all education stakeholders should therefore, prioritize the need to nurture self esteem among children from the childrenôs early years of life regardless of their hearing status and or disability. This is because self-esteem is a significant key tobehavior, and affects the thinking processes, emotions, desires, values, and goals (Branden, 1969).

Rosenberg (1965) describe self-esteem as a favorable or unfavorable attitude toward the self. It has been generally considered the evaluative component of the self-concept, a broader representation of the self that includes cognitive, behavioral, and affective aspects (Blascovich & Tomaka, 1991). They added that self-esteem is an individualôs sense of his or her value or worth, or the extent to which a person values, approves of, appreciates, prizes, or likes him or herself. Self-esteem is a set of attitudes and beliefs that a person brings with him or herself when facing the world. It includes beliefs as to whether he or she can expect success or failure, how much effort should be put forth, whether failure at a task will ñhurt,ò and whether he or she will become more capable as a result of difficult experiences (Coopersmith, 1967; 1981). Branden (1994) adds that self-esteem ñis the conviction that one is competent and live and worthy of living;ò and that self-esteem is built upon the practice of living consciously, the practice of self-acceptance, the practice of self-responsibility, the practice of self-assertiveness, the practice of living purposefully and the practice of personal integrity.

With these findings at hand, the theory of sensory integration needs to be taken with caution as one needs to take into consideration the possible effects of cultural

influences on the education of vulnerable population and the ability to support their learning. The level of technology reached by a particular society, the attitude held by the community about the ability of people with hearing impairment to learn, and prejudicial treatments by a given society to pupils with hearing impairment should all be taken into account as one analyzes the relationships among hearing status and academic achievement. Though the effects of social and community attitude were beyond the analysis of this study, by making inference of the attitudes of the community towards people with hearing impairment in Tanzania as reported by Kisanji (1995), it is clear that the community expect people with hearing impairment to perform poorly in academics. With these lowered expectations, and the fact that the higher the education level reached the smaller the number of pupils with hearing impairment becomes, it is probable that self esteem of pupils with hearing impairment might be lower as compared to their counterpart pupils without hearing impairment.

URT (2011) has also reported unequal treatment of people with disabilities including those with hearing impairment whereby parents do not prefer to send them to school. Putting all these together, it is convincing to note that Ayres theory of sensory integration should not be a framework of choice in making relational inference to the achievement of pupils with hearing impairment in Tanzania. This is because applying it might cause further harm to hearing impaired pupils by creating additional prejudice against them and their abilities. However, with regard to generalization, more studies of this nature need to be in place in other regions and schools with hearing impairment units as well, given that the present study did not randomize the selection of the sampled regions.

Practical implications of these findings are of two kinds. Firstly specific programmes need to be put in place to enable pupils in lower grades build self esteem, which seems to predict both general and academic performance regardless of their hearing status. Secondly, the role of inclusive primary schools as an instrument to enhance sensation as a part of meaningful activity that yields an adaptive interaction, improving the ability to process sensation, and thus, improving pupilsô self-esteem, which in turn seems to predict performance in academic subjects, is a lesson to emphasize. Though there were no any similar studies in the country to make comparison with, the findings of this study have shown a mutual agreement with many similar studies elsewhere outside Tanzania. However, before making any generalizations, an invitation is made for more studies to be conducted with large samples within the country in the context of this theory.

CONCLUSION

This study sought to explore the relationship between self esteem and academic performance among pupils in inclusive primary schools. The comparison was made between children with and without hearing impairment. The present findings show that pupils with hearing impairment can learn on equal ground with normally hearing students. Though the level of technology is not so much high in the country, it is probable that managing to provide hearing assistive devices and skills to teach pupils with hearing impairment is within the reach of the community and skilled

educators in this country. Self esteem has been found to be the foremost predictor and thus, a correlate of academic performance regardless of pupilsô hearing status. This suggests that much emphasis on developing self esteem among pupils is inevitable if we want our children in schools to improve their levels of academic performance.

There is a need therefore for education stakeholders including the parents, the Government, and NGOs to work together to develop self-esteem among children. On developing self-esteem among children with hearing impairment it is suggested to eliminate the societal prejudicial and discriminatory actions, social and physical barriers, which deny individuals with hearing impairment opportunities to learn and share participation in the welfare of the state and community.

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