

## Assessing Sign Language Competency of Teachers of the Deaf in Ghana

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### **Abstract**

In Ghana, all Special Schools for the Deaf have been directed by Ghana Education Service to use sign language as the major mode of communication and instruction as opposed to the use of total communication which hitherto was the main philosophy. Therefore, it became necessary for training institutions to review their curriculum to include sign language as a major component of the teacher development programmes. This study was a descriptive study that assessed the sign language competency of teachers of the Deaf in Ghana. Simple random sampling technique was used to select the schools and the teachers while the six head teachers were purposively selected. Questionnaire and observation guide were employed to establish the competency level of the teachers in sign language. Reliability coefficients of the head teachers' and teachers' questionnaires were 0.72 and 0.78 respectively while the inter-rater reliability of the observation guide was 0.86. The study found that pre-service and in-service training were inadequate and that the competency level of the teachers was found to be lower than the expected level for specialist teachers. It was recommended that the training institutions should review the training curriculum of teachers of the deaf in Ghana to make their training more effective.

**Keywords:** Sign Language, Teacher Competency, Special Education, Teacher Training, Deaf Education.

## **Introduction**

In Ghana, it is widely acknowledged that the provision of quality education will serve as a catalyst for the socio-economic and political development of the country. It is for this reason that various governments implemented various educational reforms in the bid to achieve the development aspirations of the nation. Among the latest reforms is the 2007 Education Sector Reforms that was intended to ensure total access to basic education, placing high premium on training and improving the quality of instruction and making it flexible enough to accommodate diverse student abilities (Adu-Gyamfi, Donkoh & Addo, 2017). The 2007 reforms sought to improve teachers' competencies to handle the content of the curriculum and teaching techniques (Education Reforms Committee Report, 2007). This is because the success of any educational system depends largely on the quality and competence of the teachers that will drive the reforms.

Special education which is specifically designed to meet the needs of individuals with special needs requires highly skilled teachers who can facilitate effective teaching and learning. Thus, it is important that the teachers develop the skills required to increase their competency levels to teach learners with special educational needs. In the area of Deaf education, teachers must be proficient in the use of sign language to enable them interact effectively with deaf learners. Sarkees and Scott, cited by Elbert and Baggett (2003), indicated that competent teachers are critical in providing quality education for special needs learners and quality deaf education dwells greatly on teacher competency in sign language. This implies that children with hearing impairment should be taught by appropriate and qualified specialist teachers of the deaf.

In Ghana, the University of Education is one of the main institutions involved in training teachers of the Deaf. Currently, the University runs 4-year degree programmes in specialised areas including the education of the hearing impaired. The syllabus at this level provides a general introduction to special education which focuses on the various areas of specialisation. It further covers areas such as basic audiometry, sign language, and managing the hearing impaired. Other areas include preparing the hearing impaired for independent living, designing curriculum for hearing impaired, language deviations and clinical practice. General education teachers interested in working with deaf children enrolled on the programme and those who successfully complete the programme were awarded Bachelor of Education (Hearing Impairment) degree and are recognised by the Teacher Education Division of Ghana Education Service as qualified teachers of the deaf. These teachers are posted to the schools to begin their career as teachers of the deaf.

In an attempt to improve the training programme and thereby making the teachers more responsive to the needs of the deaf students, the University introduced a system whereby students in their 4<sup>th</sup> year are posted to the Schools for the Deaf for a period of one academic year to acquire practicum experience in the form of mentorship. This is

expected to enhance the trainees' interaction with deaf students thereby improving their skills in sign language.

Despite the efforts by the University to produce quality teachers for the special schools in Ghana, it appears teachers of the deaf do not acquire enough skills in sign language to enable them communicate effectively with their hearing-impaired students. Gadagbui (2005) reported that due to challenges confronting the University, the preparation of teachers for special schools in Ghana have not been adequate and as a result the teachers are unable to handle the curriculum of the special schools effectively. In support of this assertion, Polat (2009), citing Huber *et al.*, reported that teacher education programmes fall short in adequately preparing pre-service teachers to effectively handle the school curriculum. This confirmed Lewis and Doorlag (1995) earlier observation that some teachers in the special schools have limited skills. Therefore, this study was intended to assess the sign language competency of teachers of the deaf in Ghana from the perspective of both class teachers and the heads of the institutions. The study was guided by two research questions as follows:

1. **Research Question 1:** To what extent have teachers of the deaf in Ghana been equipped with skills in sign language during their pre-service training?
2. **Research Question 2:** What opportunities are there for teachers of the deaf in Ghana to improve their competency in sign language through in-service training?

## Literature Review

The supply of quality and competent teachers for any educational system depends on the efforts that are put into the education and training of new teachers. After initial training, providing opportunities for in-service training (INSET) to continuously update the knowledge and skill of serving teachers is critical in teacher development. INSET is ongoing education resulting in improvements and professional competence. INSET is crucial as it is designed to fill the gap of professional inadequacies of a serving teacher (Osamwonyi, 2016, p.83).

There must be adequate pre-service and in-service training designed to provide quality activities in adopting material and instructional techniques as well as interaction experiences with deaf students. According to Lewin and Stuart (2003), pre-service training and INSET have been effective in promoting positive attitudes and facilitating skill acquisition. According to the authors, training curriculum of teacher educator programmes develop skills and competencies to build the capacity of the teachers.

To ensure effective education for the deaf, teacher training should cover both pre-service and in-service trainings. This will help equip the teachers at the pre-service levels with information and experience related to special needs students, especially students with hearing impairment. Vanderpuye, Gyimah and Deku (2009), citing Deku,

acknowledged that knowledgeable, effective and competent teachers need to undertake courses that relate knowledge to actual performance of expected responsibilities. Getting quality and competent teachers is dependent on teacher education and training (Vanderpuye, *et al*, 2009).

Vanderpuye *et al* (2009) further acknowledge the importance of pre-service and in-service training in any teacher development programme. Lewin and Stuart (2003) and Smith (1996) suggest that teacher preparation should be followed by frequent INSET and professional development. Luetke-Stahlman and Lucker (1991) found that only 30% of teachers working with deaf students had attended training on working with the hearing impaired. The majority of the teachers who attend such trainings found it helpful. To enhance the need for additional teacher training, Johnson, Sharpe, & Stodden (2000) observed that teacher training is needed at the pre-service and continuing education levels.

In a study conducted by Goktas, Yildirim & Yildirim (2009) in Turkey, the researchers found that lack of INSET among teachers is one of the main barriers to teacher education programmes. To them, the aim of school-based training is to make up the teacher's deficiencies arising out of defects in his/her initial teacher-training preparation. Lewis and Doorlag (1995) observed that teacher preparation programmes may have provided only a minimal amount of training in handling students with hearing impairment.

In Ghana, the special education training curriculum being offered by the University of Education, Winneba, appears to be inadequate in some aspects. Most of the teachers who pursue a Bachelor's degree programme in hearing impairment are unable to use sign language to teach effectively in the schools for the deaf. This is supported by an earlier study that was conducted by Okyere, Amedahe and Edjah (2002) on training of teachers for children with special needs in Ghana. The study discovered that the teachers did not acquire the needed competencies in the acquisition and usage of the sign language which is the major mode of instruction in the education of the deaf in Ghana. The student trainees revealed that the practical training was too short to make any significant impact on acquisition of basic skills needed in teaching individuals with special needs. This implies that the teacher trainees may need enough time to study the sign language as well as having the opportunity to interact practically or socially with the deaf students through mentorship or practicum.

Okyere *et al* (2002) identified that sign language training and interpretation were not being adequately handled. They further observed that the content of the training curriculum in special needs education is limited in teacher preparation. According to the researchers, the curriculum only addresses the theoretical needs of the trainees and that there is inadequate provision for practical experience with children who have hearing impairments. In a related study, Deidong (2005) reported that the number of credit hours

for teaching the sign language at the University of Education is too small and students do not acquire enough skills in sign language before graduating.

This situation is not peculiar to Ghana since teachers of the deaf in most countries also have difficulties in mastering sign language during pre-service training. For example, Ntinda, Thwala and Tfusi (2019) conducted a study on experiences of teachers of deaf and hard of hearing students' in Swaziland. Qualitative research design was used to explore the experiences of teachers of the deaf and hard of hearing. Interview and focus group discussions were adopted to elicit responses from the participants on their experiences in teaching the deaf and hard of hearing. The study found that the teachers lacked professional competencies and that their teacher education programmes did not adequately prepare them to teach effectively in the special school for the deaf. The study further discovered that the teachers of the deaf did not have adequate deaf language training.

In a related study, Sibanda (2015) analysed sign language proficiency among teachers of the deaf in primary schools in Zimbabwe. The study employed descriptive survey and ex-post facto research design using 10 teachers and 5 lecturers as the sample for the study. The study revealed that teachers of the deaf in Zimbabwe lacked sign language proficiency and that the teachers were only able to sign at the novice and the no functional skills levels. The study by Sibana (2015) also found that the pre-service teacher preparation programme did not adequately expose the teachers of the deaf in Zimbabwe to native sign language and that the programme only trained them to operate as survival or intermediate users of sign language. The researcher further established that the emphasis on practical component of sign language was minimal during the pre-service period. Drolsbaugh (2004) also reported that in some countries such as Colombia, teachers of the deaf do not have knowledge of sign language.

Citing Ysseldyke and Algozzine, Kumedzro (2016) also maintained that teaching the hearing impaired for academic excellence required teachers who could communicate effectively with their students. This presupposes that teachers of the deaf must be able to interact with deaf students in sign language which is the natural language of the deaf community. This supports Drolsbaugh (2004) view that deaf learners need teachers who can communicate using sign language. In this context, teachers of the deaf in Ghana should be able to use Ghanaian sign language to teach in the special schools for the deaf in Ghana.

From the above, it is clear that teacher preparation is a lifelong education utilising both pre-service and in-service modes of training. In-service training is crucial as it offers opportunities for serving teachers to update their content and pedagogical knowledge in a continuous manner.

## **Theoretical Framework**

This study was grounded on Vygotsky's Social Interaction Theory (1978). The theory posits that social interaction plays a tremendous role in the learning process. Vygotsky's theory further indicates that initially children learn with support from and association with teachers, peers and significant others. Gradually they develop independence (Borthick, Jones & Wakai, 2003). Vygotsky (1978) talks about the zone of proximal development (ZPD), which is where a child creates a language based on the social interactions they receive and that the theory is appropriate for learning a second language. In other words, language should be learnt in an environment that naturally supports its use and development. This zone highlights the difference between what a child can achieve independently and what a child can achieve with supervision and help from a significant other. Vygotsky (1978) conceptualises the ZPD as the arena where intense instruction or supervision should be given to help the child to develop skills that will foster independence and promote the development of more complex mental function and in this instance language development. ZPD is not restricted to only child learning but also adult learning.

In the light of this theoretical underpinning, teacher competency in the use of sign language does not develop overnight. Rather these teachers go through a period of training similar to Vygotsky preposition on language acquisition. During this period, the teacher trainees are given assistance, supervision and support to help them develop this second language. Gradually they gain the skill and competency to be functional and competent in the use of sign language. In this study, teacher competency in the use of sign language is believed to be learned as a result of training and opportunity to practice in a naturalistic environment. The level of training provided to the teachers of the deaf should enable them to exhibit their competency in the use of sign language to facilitate teaching and learning in the schools for the deaf.

## **Method**

The study investigated sign language competency of teachers of the deaf in Ghana using descriptive survey. The target population was all head teachers and teachers in the 13 public Basic Schools for the Deaf in Ghana. Ary, Jacobs and Sorensen (2010) note that a target population is the large group to which the researcher wishes to generalise the results of the study. The target population was 399 which consisted of 386 teachers and 13 head teachers. The head teachers were included in the study because they were responsible for the administration of the school and could provide vital information regarding the teachers' competency.

The simple random sampling was used in selecting six (6) out of the 13 schools which gave a total accessible population of 165. This was made up of 6 head teachers and



159 teachers. Furthermore, simple random technique was used in selecting 22 teachers for observation in order to determine their actual competency level in sign language. The simple random sampling technique was used because it yields research data that can be generalised to a larger population within margins of error that can be determined statistically (Orodho, 2009).

In this regard, responses provided by 145 teachers and six head teachers from the six randomly selected schools were used to generalise the study results to the target population, thereby minimising error. The six head teachers were also purposively selected. Purposive sampling technique was used because it allowed the researchers in the selection of particular elements from the population based on the belief that they will provide the needed information about the issue under investigation (McMillan & Schumacher, 2010).

The main instruments for the collection of the data for the study were questionnaire and observational guide. Two separate questionnaires for head teachers and teachers were used. Questionnaires were used because they yield a high return rate and are more desirable for survey studies (Cohen, Manion & Morrison, 2007). Additionally, the researchers used a modified observational guide known as the Sign Language Proficiency Observation Rating Scale (SLPORS) to evaluate the sign language competency of the participants.

The Guide helped to observe, rate and assess the signing competency of the teachers. This is in line with the assertion by Orodho (2009) that a good observation schedule does not only record behaviours as they occur but also evaluate the behaviour on a rating scale. This instrument addressed five competence areas in sign language. These are: rate and rhythm, signing positions, finger spelling, non-manual markers and meaningfulness of expression. Each of the components was assessed on a five-point scale (Beginner- 1, Average – 2, Intermediate – 3, Advanced- 4 and Superior- 5). The maximum score that a person could obtain on the scale was 25 and the minimum was 5.

The SLPORS had two Parts, A and B. Part A contained 10 sentences that were projected for participants to read and sign accordingly. The participants signed each sentence twice. Part B requested the participants to talk about themselves based on certain parameters. Two experienced teachers of the deaf were engaged as observers to help evaluate the competency levels of the teachers in sign language. The observers made judgement on five functional areas assessed. On the average, each participant was observed for about 15 minutes.

Pre-testing of the instruments was carried out on a population with similar characteristics to that of the actual population. Two other experienced teachers of the deaf read through the instruments to ensure content and face validity. Their comments and observations were duly incorporated in the final instruments. The Cronbach's co-efficient alpha measure of internal consistency was used in determining the reliability of the

questionnaires.

The choice of Cronbach's co-efficient alpha was made on the basis of Ary *et al* (2014) view that the Cronbach's alpha is basically used when the data collection tools have multiple-scored items. The reliability for the head teachers' and teachers' questionnaires respectively was 0.72 and 0.78. The inter-observer reliability was also used to assess the reliability of the observational guide. The inter-rater reliability test for the observational guide was 0.86. This inter-rater reliability enables a researcher to ascertain the degree of agreements of observations made by two or more raters (Sherri, 2012). The reliability values for the head teachers' and teachers' questionnaire as well as the inter-rater observer reliability score were considered to be acceptable as Fraenkel and Wallen (2000), stated that reliability should be at least 0.7 or higher.

Permission was sought from the head teachers after which a meeting was held between the research team and the teachers of the school on various campuses. The rationale for the meeting was to enable the researchers to explain the significance of the study to the respondents and solicit their co-operation. Ethical issues such as voluntarism, anonymity and confidentiality were addressed.

In all, six and 159 copies of the questionnaire were administered to the head teachers and teachers respectively. However, 145 of the teachers' questionnaire and all of the head teachers were retrieved giving a return rate of 91.2% and 100% for the teachers and head teachers respectively. To evaluate the sign language competency, 22 teachers were further observed after the administration of the questionnaire. Two experts in sign language were engaged as observers. They rated the competence levels of the teachers on a scale of 1 to 5. Frequencies and percentages were used to analyse the data generated to answer the research questions.

## **Results**

### **Research Question 1: To what extent have teachers of the deaf in Ghana been equipped with skills in sign language during their pre-service training?**

This research question was meant to establish the extent to which the pre-service training that the teachers went through was able to equip them with the required skills in sign language. The respondents were asked whether teachers had received any training in the use of sign language during their pre-service training before their appointments to the schools for the Deaf. Table 1 presents the results of the analysis of the responses of the participants.



**Table 1: Pre-service training in sign language for teachers of the deaf**

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Statement	Teachers' Responses				Heads Responses			
	Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	Freq	%
Training in sign language	124	85.4	21	14.6	3	50.0	3	50.0
Mastering of sign language	39	31.5	85	68.5	1	16.7	5	83.3

Table 1 shows that 124 (85.4%) of the teachers said 'Yes' indicating they have been trained in sign language while only 21(14.6) teachers reported “No” meaning that they were not trained in sign language during their pre-service training. In the case of the head teachers, there was a tie because half of them affirmed that the teachers reported to the school with full knowledge in sign language while the remaining half indicated that the teachers reported to the school without any mastery in sign language. This implies that there was no consensus among the head teachers with regards to whether the teachers went through the required training in sign language during their pre-service period.

The 124 teachers who said they were trained were asked to indicate whether they mastered sign language skills before being posted from their training institutions to teach in the special school. In all, only 39 (31.5%) indicated that they mastered the skills in sign language before being posted from their training institutions while the majority (85:68.5%) reported that they did not acquire enough skills in sign language at the time of graduating from school. On the other hand, when the same question was posed to the head teachers, only one (16.7%) head teacher affirmed that the teachers reported to the school with mastery in sign language skills implying that the majority (5:83.3%) of the head teachers were of the view that the teacher trainees reported to the schools without any mastering in sign language.

Again, the 124(85.4%) teachers who claimed that they had training in sign language were further requested to indicate how adequate the training was in preparing them to use sign language as newly trained teachers of the deaf. Table 2 presents the results of the analysis of their responses to the question.

**Table 2: Teachers' responses on adequacy of training in sign language**

<b>Level of Adequacy</b>	<b>Frequency</b>	<b>Percentage</b>
Not adequate	28	22.6
Fairly adequate	51	41.1
Adequate	30	24.2
Very adequate	15	12.1
<b>Total</b>	<b>124</b>	<b>100.0</b>

Table 2 shows that 79 (63.7%) of the teachers who responded to the item felt that the training was either fairly adequate or not adequate. On the other hand, 45 (36.3%) felt that the training was either adequate or very adequate. From the responses of the teachers, it can therefore be concluded that the teacher trainees were not adequately trained in acquiring sign language skills during their pre service training.

To interrogate the issues further, the teachers were again asked to indicate how prepared they were to communicate effectively in sign language when posted to the special schools immediately after their training. The results of the analysis of their responses are presented in Table 3.

**Table 3: Preparedness of teachers of the deaf to use sign language to teach**

<b>Level of Preparation</b>	<b>Frequency</b>	<b>Percentage</b>
Not prepared	19	15.3
Quite prepared	51	41.1
Well prepared	39	31.5
Very well prepared	15	12.1
<b>Total</b>	<b>124</b>	<b>100.0</b>

The results in Table 3 show that 54 (43.6%) teachers reported that they were either well prepared or very well prepared to use sign language when posted to the school for the deaf after their training while 51 (41.1%) teachers felt that they were quite prepared to use sign language to teach deaf students at the time of completing their training while 19 (15.3%) indicated that they were not prepared at the time of completion.

From the analysis of the responses, it can be deduced that the 51 (41.1%) teachers who indicated that they were quite prepared were, in effect, lacking some skills in the use of sign language that is why they agreed that they were quite prepared which, in effect, means that they were not well prepared. Since lack of some skills in sign language is not acceptable, it could conclude that 70 (56.4%) of the teachers were not prepared to use sign language.

To further ascertain the mastering level of the teachers in sign language, 22 out of the 39 teachers who reported that they mastered sign language skills during their pre-service training were randomly selected for an observation. This was done to ascertain their competency levels in sign language. The observation guide was divided into two sub-sections. In the first section, 10 sentences were projected for the teachers to sign while the second section requested them to describe themselves using sign language. The two observers assessed them simultaneously based on a five-point scale (Beginner- 1, Average – 2, Intermediate – 3, Advanced- 4 and Superior- 5). Table 4 provides a summary of the overall average ratings of the two observers.

**Table 4: Inter – Observer Ratings of Teachers’ Competency Level in Sign Language**

<b>Competency Level</b>	<b>Frequency</b>	<b>Percentage</b>
Superior	2	9.1
Advanced	7	31.8
Intermediate	8	36.4
Average	4	18.2
Beginner	1	4.5
<b>Total</b>	<b>22</b>	<b>100.0</b>

Table 4 shows that 9 (40.9%) of the teachers who were observed were signing at either advanced or superior level while 8 (36.4%) were signing at an intermediate level. However, only few teachers 5 (22.7%) were signing at either average or the beginner level. The results clearly show that the competency level of the majority 17 (77.3%) of the teachers is above average in using the sign language as a medium of instruction in the special schools for the deaf in Ghana. This confirms the earlier responses given by the 39 teachers who said that they had mastered sign language skills before being posted to the schools after pre-service training as specialist teachers of the deaf. The results of the observation were to be expected because the 22 teachers who were used for the observation were part of the 39 (31.5%) of the teachers who reported earlier that they mastered the sign language during their pre-service training.

From the above analysis, it can be deduced that although the teachers claimed they were trained in sign language, most of them did not master the skills required in communicating effectively in sign language at the time they were being posted to the special schools. It appears the teacher trainees were not adequately equipped with the skills required in sign language and as a result, the teachers were not well prepared to use

sign language effectively in the schools. The analysis further revealed that though some teachers were observed to be competent and possesses superior skills in sign language, majority were signing below intermediate level. Therefore, judging from the responses of both teachers and their head teachers it can be concluded that the pre-service training that the teachers received did not equip them adequately in the use of sign language which is the official medium of communication and instruction in the schools for the deaf in Ghana.

**Research Question 2: What opportunities are there for teachers of the deaf in Ghana to improve their competency in sign language through in-service training?**

Research question 2 was to find out how teachers were being supported to improve their competency in sign language through in-service training. Table 5 presents the results of the analysis of the teachers' responses.

**Table 5: In-service training in sign language for teachers of the deaf**

Statement			Teachers response			
			Freq	Yes %	No Freq	%
School Based Pre-Service		109	75.0	36	25.0	
GES Based Pre-Service		21	14.5	124	85.5	

On the issue of in-service training, Table 5 reveals that 109 (75%) of the teachers had participated in INSET programmes in sign language organised by their school. When the teachers were asked whether they had also participated in any in-service training programme in sign language organised by the Ghana Education Service (GES), only 21(14.5%) of them answered in the affirmative. The majority 124 (85.5%) of them said that they had not attended or participated in any in-service training programme organised by the GES. The 21(14.5) teachers who said that they had attended in-service training organised by GES were further asked to indicate the number of in-service trainings they attended the previous academic year. Table 6 presents the results of the analysis of their responses.

**Table 6: Teachers’ responses on in-service training in sign language organised by the GES**

<b>Number Times</b>	<b>of Frequency</b>	<b>Percentage</b>
1	12	57.1
2	6	28.6
3	3	14.3
4 or more	-	-
<b>Total</b>	<b>21</b>	<b>100.0</b>

Table 6 shows that the number of in-service training programmes organised by the GES was woefully inadequate. Twelve (12) of the teachers constituting about 57.1% of those who said they had ever attended in-service training organised by the GES said they attended only once in the previous academic year while 3 (14.3%) affirmed that they had participated three times in the previous academic year. However, about one-third (6) of the teachers reported that they attended in-service training organised by GES only twice. The results clearly show that the highest number of times a teacher had the opportunity to attend in-service training that was organised by GES was three times during the academic year under review.

## **Discussion**

As evident by the results of the study, as many as 85 (68.5%) of the teachers who claimed they had training in sign language reported that they did not master the skills at the time of completing their training. Synthesis of Table 3 further revealed that the majority of the teachers indicated that they were not well prepared in using sign language to teach. Moreover, Table 2 also affirmed that as many as 79 (63.7%) teachers reported that the pre-service training they received was inadequate in terms of fluency in sign language. The observation data further established that the overall competency level of the teachers of the deaf in sign language is below acceptable standards although some teachers could sign at a superior level. The study revealed that out of 22 teachers who were observed, only 9 (40.9%) signed at either advance or superior level while the majority (59.1%) operated at either intermediate level or below.

This finding supports an earlier study by Sibanda (2015) who analysed sign language proficiency among teachers of the deaf in primary schools in Zimbabwe and found that teachers of the deaf in Zimbabwe lacked sign language proficiency and that the teachers were only able to sign at the novice and the no functional skills levels. The findings of the study further confirm Kiyaya and Moores (2009)'s observation that specialist teachers of the deaf in Sub-Saharan Africa could not sign. The findings of the

study again support Amoako (2019) assertion that teachers who are unskilled in neither sign language nor have training in deaf education are posted to the schools for the deaf.

However, these findings are inconsistent with that of Sheehan *et al* (2011)'s view that teachers of the deaf at primary schools should sign at advanced proficiency rate to make it possible for them to teach deaf children at that level. The teachers who demonstrated advanced or superior level of sign language competency in the current study could be due to the fact that they might have some background knowledge in sign language or had been interacting with deaf people before enrolling on the training programme.

Some friends and family members of the deaf individuals are able to acquire some basic skills in sign language as a result of constant interaction with the deaf community. This is in agreement with Vygotsky's Social Interaction Theory (1979) which posits that social interaction plays a tremendous role in the learning of language. Vygotsky's theory further indicates that individuals acquire language through support from and association with significant others in their community. As shown by the data, majority (59.2%) of the teachers demonstrate low level of sign language competency. They were operating either at intermediate level or below. The low competency level of teachers of the deaf in sign language could be attributed to the nature of the pre-service training programme being offered by the training institution. The system where it is only when the trainees get to the final year of their studies that they are sent to the schools for the deaf for internship cannot guarantee adequate sign language skills. There were situations where the interns on teaching practice have to learn sign language from the students they are supposed to be teaching. Teachers of the deaf require adequate practicum experience and interaction with the deaf community to enable them to develop signing skills.

This finding corroborates that of Okyere *et al* (2002), who reported that sign language training and interpretation are not being adequately handled by the training institutions. According to the authors, the curriculum only addresses the theoretical needs of the trainees and that there is inadequate provision for practical experience with children who have hearing impairments. The current study supports Deidong (2005) who indicated that the number of credit hours for teaching the sign language at the University of Education is not enough and as a result, students do not acquire enough skills in sign language before graduating. These findings therefore corroborate each other.

Lewis and Doorlag (1995) observe that teacher preparation programmes may have provided only a minimal amount of training in handling students with hearing impairment. The finding that most teachers of the deaf demonstrate low level of sign language competency operating either at intermediate level or below support studies by Ntinda *et al* (2019), which found that teachers lacked professional competencies and did not have adequate deaf language during their initial teacher training.

The finding that pre-service training had not been adequate in preparing teachers of



deaf in sign language skills conflicts with Lewin and Stuart (2003) view that pre-service training has been effective in promoting positive attitudes and facilitating skill acquisition. The researchers further noted that pre-service training curriculum for teacher education programmes develop skills and competencies to build the capacity of the teachers. In this vein, it is necessary that teachers should have adequate knowledge and the expertise in handling children with special needs during their pre-service preparation (Vanderpuye *et al*, 2009).

This study established that in-service training for teachers of the deaf in Ghana was mostly school-based and that in-service training organised by the Ministry of Education was virtually absent. The findings show that as many as 109 (75%) of the teachers reported that they had never participated in school-based in-service training programmes in sign language. This demonstrates that head teachers are very instrumental in organising in-service training for their teachers. Head teachers' motivation in facilitating in-service training in their schools could be because in-service training has the potential of upgrading teachers' knowledge and pedagogy and thereby filling the professional inadequacy gap (Osamwonyi, 2016).

However, most of the teachers who participated in this study reported that the GES does not organise frequent in-service training for the teachers of the deaf in the special schools. Table 6 revealed that 12 of the teachers constituting about 57.1% who claimed they had ever attended in-service training organised by GES said they attended only one in-service training the previous academic year while 3(14.3%) affirmed that they had attended only three in-service training programmes the previous academic year. About one-third of the teachers reported that they attended in-service training organised by GES only twice. This finding is alarming and conflicts with the views of Smith (1996), who suggests that teacher preparation, should be followed by frequent in-service training. He suggests that after the initial induction into the teaching profession, the serving teachers need continuing education in the form of in-service training and professional development.

In a similar study, Luetke-Stahlman and Lucker (1991) found that only 30% of teachers who work with deaf students had attended any training on working with the hearing impaired. Inadequate in-service training can affect the teachers' continuous professional development that may translate into poor educational outcome among learners. Lewin and Stuart (2003) opined that teacher preparation should be followed by frequent in-service training. Goktas, Yildirim and Yildirim (2009) found that lack of in-service training among teachers is one of the main barriers to teacher education programmes. For teachers to be competent in the use of sign language there will be the need for the Government through GES to promote in-service training in the schools to enable the teachers upgrade their skills in sign language. In the view of Kempen and Steyn

(2016), in-service training has been noted to provide the medium to effectively equip special education teachers with adequate pedagogical skills and knowledge to meet the needs of learners in special schools.

### **Summary of Major Findings**

1. The pre-service training that the teachers received in sign language did not adequately prepare them to communicate effectively using sign language which is the official mode of instruction in the schools for the deaf in Ghana.
2. In-service training on sign language by the GES is almost non-existent and even where available, they were not adequate.

### **Conclusion**

The conclusion drawn from the findings are that, the teacher training programmes for special needs students appear to be defective and also, majority of the teachers of the deaf in Ghana do not have enough opportunity to attend in-service training programmes to upgrade their knowledge and professional skills in sign language. Admittedly, the study shows how majority of teachers of the deaf would need adequate training in sign language so that they can impart meaningful knowledge to their students.

### **Recommendations**

1. The results emanated from this study provide sufficient basis to recommend that the major stakeholders, namely Ministry of Education, National Council for Tertiary Education and the training institutions should collaborate to review the training curriculum to enhance the pre-service training of teachers of the deaf in Ghana.
2. The Ghana Education Service through the Division of Special Education should make provisions for frequent INSET programmes for the teachers to upgrade their skills in sign language.
3. The Ghana Education Service can institute mandatory weekly INSET for teachers whose competence falls below intermediate level.

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