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Supporting L2 Proficiency of Visual Learners

Dr. Melissa G. Wallang
Associate Professor (NERIE-NCERT)
melissancert@gmail.com

Dr. Ch. Sarajubala Devi
Associate Professor (NERIE-NCERT)
sarajubala@yahoo.com

Dept. of Languages and Social Sciences
NERIE-NCERT, Shillong

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Abstract

The current scenario in teaching and learning of L2 stresses on engaging learners in more activities and task-based oriented methods which follow the constructive approach to learning. Yet teachers are still grappling with the idea of 'activity method' as most school textbooks are pre-designed to meet the requirements of board exams that are tested in written form. It is even more challenging for D[1]/deaf children to achieve the required L2 proficiency in the written form as per the assessments of school board exams and this issue needs to be discussed by all stakeholders in the area of school education.

This paper does not intend to debate on whether such children should be taught in their mother tongue (sign language), but it does investigate the methods being used in schools. Research has shown that learning L2 through one's mother tongue during the foundational years of education is a necessary condition. If a child is deprived of any form of language, it can affect his/her cognitive development and slow down his/her academic achievements. Children cannot be denied their basic linguistic right of accessing knowledge in their own language. However, schooling demands that they are able to produce grammatical written forms of English. How can we support the L2 proficiency of visual learners?

This paper addresses the challenges that D/deaf children face while learning the English language in the state of Meghalaya in North East India, while examining a few schools within its capital, Shillong. The discussions are drawn from a research study[2] that restricts its area to English language learning within the context of Deaf (D) children and Hard of Hearing children (HH). It highlights a few existing practices concerning the teaching of English and discusses a strategy adopted to support English language learning.

[1] profoundly 'Deaf' those children with 100% onwards of hearing loss and since birth
[2] A Study of English Language Learning of Deaf/Hard of Hearing (deaf) Students in Inclusive Settings at Elementary level, NERIE, NCERT, Shillong PAC funded, 2015-2017.

Keywords: D/deaf; Hard of Hearing; English language Learning, Inclusive Education

Introduction

Hearing loss[3] ranges from mild to severe cases, but the consequence of it is one's inability to acquire spoken language in a natural manner. In children with mild cases of hearing loss, the major impact is a delay in the acquisition of spoken language. Typically, most D/deaf children join school quite late in their lives, often by the age of 8-10 years. This is largely due to the inaccessibility of information, especially for those parents living in the rural areas. Children join school with low level language proficiency in both spoken language and sign language. The situation becomes more problematic as most schools adopt the spoken language as the medium of instruction, thereby slowing down the learning process.

Studies on the achievements of D/deaf children under the oral approach indicate that D/deaf children leave school with minimum reading skills and poor speech intelligibility, despite training in this area (Conrad, 1979). There have been many studies (Gregory, 1996) on the achievements of deaf children, several which indicate that D/deaf children of D/deaf parents were more successful academically than those with hearing parents. The failure of spoken language as a method for teaching English is clearly seen by the fact that these children invariably write ungrammatical sentences when asked to.

The process of teaching becomes a kind of repetitive drilling and memorization of words where students not only fail to understand what each word stands for but are also made to memorize where these words must occur in the English sentence structure. When it comes to words that can be presented to the students visually in concrete form, children appear to learn faster. However, not every concept can be presented and explained visually.

Another concern is that D/deaf students differ from one another in the degree of hearing loss and yet, these children are clubbed together in the same classroom, especially with the current movement towards inclusive schools. In such types of classrooms, the oral method still dominates because more focus is given to those children who still have some degree of hearing and the ability to speak.

Hence, this paper is concerned with D/deaf children who are exposed to English (as a second language) only in the form of print materials and this needs serious investigation especially

[3] Bench, 1992 classified hearing loss as follows 30dB- mildly deaf, 50/60dB-moderate/partial/hard of hearing, 80dB-severely deaf, 100dB-profoundly deaf and 110-120dB- Totally deaf.

in the context of 'Inclusive Education'[4]. Since the D/HH cannot hear, they also cannot communicate with their voice, thereby creating a communication barrier between the teachers and the students. This outlook has become a wall that casts a rather cold shadow on the successful learning of such children.

Brief Background

Most schools in the state of Meghalaya, including special schools, use the 'Total Communication[5]' method to teach the D/deaf children. Many teachers report the absence of sign language in the classrooms, even in special schools. D/deaf children are largely exasperated because they fail to lip-read, to speak, to write or re-write grammatically correct sentences in the official language of the school. The general opinion of teachers is that since D/deaf children have 'no language', they have to invent (gesture-like hand movements) or incorporate foreign signs (American Sign Language) into their teaching. It is disheartening to find that teaching courses (B.Ed. or even B.Ed. in Hearing impairment) do not emphasise sign language as mandatory or even as part of their course. Most of the teachers teaching D/deaf children in the selected schools have no knowledge of sign language and in most schools, it is not even allowed to be used.

Since most children who attend school rarely have any exposure to English, especially the Deaf (with profound hearing loss) children, special schools initiate grammatical categories from class II onwards. It is considered important for these children to develop an understanding of the relationship between graphemes and words. In the absence of sound, a D/deaf child has to learn to connect the alphabet to fingerspellings[6] and then connect these alphabets together to form a word. In a school that acknowledges the importance of sign language, children are taught fingerspellings alongside the manual English alphabets right from the nursery level and thus, they are exposed to English only in print.

Further, the inability of the children to hear compels the teachers to make use of colours to teach children the difference between a vowel and a consonant in order to help children understand how words are formed. For example, vowels are given the colour blue and consonants are given red or any other colour. Children are able to remember the placement of vowels and consonants appropriately when they are learning to write words. The common practices used to teach grammar are the techniques of using colour-codes to distinguish between different

[4]**Inclusive education:** Provision of quality education for children with disability in the mainstream school and the benefits that they gain from it. In an inclusive setup, D/HH children and hearing children are placed together in a single classroom.

[5] This method employs the technique of lip-reading, the use of hearing-aid, speech, and sign language based on spoken language (i.e., a literal translation of the spoken form into invented signs).

[6] Representation of the English alphabets on the hands

grammatical categories, pictures, stories, and structured teaching-learning materials. At the lower primary level, children are taught how to identify objects, proper names, places, and form some sort of linkage to the concept of what is a noun. Similarly, verbs are taught through demonstrations and actions. Since the majority of teachers find it complicated to teach tenses and enable students to use them in a sentence appropriately, their responses also show that children cannot frame grammatical sentences in English on their own.

The challenge of reading and writing for D/HH children is mainly their inability to understand sentence structures in English. They may understand conceptual meanings and the paradigm of sentences, for example, *I am going to the market*, but they fail to understand the need of 'am' and 'the' required in the structure. In sign language these words do not occur, and the sentence structure in sign language would be 'MARKET I GO MOV PRES CONT'[7]. Because of such difficulty, teachers find it difficult to enable children to produce grammatical written forms.

Can L2 Proficiency Take Place Visually?

There have been a number of methods and approaches in language teaching that try to address the cognitive process of learning by creating the conditions required for a high quality language learning activity. Psycholinguists have purported methods that focus on the comprehension of a language rather than the production of it. The Total Physical Response method (Asher & Price 1967), developed by James J. Asher is one such method that involves kinaesthetic sensory system in language learning. Kinaesthetic theory believes that there is a positive correlation between a child's physical movements and his language achievements and thus physical movements become the focus in designing and applying appropriate language teaching technique in a certain topic. In this technique, 20-25 children are grouped together in a spacious classroom and given utterances that require them to physically move in a certain way. Grammatical rules are presented in imperative sentences and the meaning of words is expressed together by physical activities; hence no dictionary is required.

The first challenging task for teachers is teaching D/deaf children how to read. Reading requires two related capabilities, first an individual has to be familiar with a language, and second she/he must understand the connection between that language and the printed word (Chamberlin and Mayberry, 2000).

It is interesting to investigate the possibility of learning and mastering a second language simply through the visual representation or orthography of English. Sound would seem to be most vital to language learning but there are several methods that have been developed to bridge reading of English with sign language, and the most common method is fingerspellings.

[7] Transcription convention commonly used in Sign linguistics. MOV refers to movement of the hands to indicate the tense.

Fingerspellings (FS) was artificially developed by Dalgarno in 1661 (Kyle and Woll, 1985) and it is still used as a method for teaching deaf students. When D/HH children go to school for the first time, they are introduced to FS alongside the English alphabets. Research has shown that when FS are used to teach reading in deaf schools, it facilitates vocabulary development. Early exposure to FS serves as a critical link between word learning and reading for deaf children (Haptonstall-Nykaza,and Schick, 2007).

Emmorey and Petrich (2012) examine how deaf adult readers interpret English orthographic representations and whether orthographic strategies for deconstructing printed words transfer to FS words and vice versa. They pointed out that, the connection between English phonology and fingerspelling has potential implications for reading instruction for deaf students. For example, FS accompanied by mouthing may provide an added visual phonological link in the *Chaining* technique used by teachers to create associations between English text, signs, and fingerspellings. '*Chaining'* is a technique for connecting texts such as sign, a printed or written word, or a FS word (Humphries and Mac Dougall, 1999-2000). Thus, both good readers and good fingerspellers have the English symbols strongly established in their minds, and fingerspellings act as a supplementary system for retaining and representing English words.

Thus, FS, through a 'Chaining' technique, connects English with the printed form in the absence of sound. Learning to read and learning to speak/sign are two different processes. Learning to speak/sign requires exposure to the environment wherein it is picked up naturally. Learning to read requires formal instruction. There are several theories regarding the involvement of phonology and orthography inn word reading. At the initial stage of reading acquisition, when very few written words are known, there is a greater reliance on orthographic skills as the written vocabulary expands (In. Kargin, et.al. 2012). Research reveals that deaf children initially treat fingerspelled words as lexical items rather than a series of letters that represent English orthography and it is only later that they begin to link handshapes to English graphemes (Haptonstall-Nykaza,and Schick, 2013).

Van Staden and Roux (2010) conducted an experimental study on the efficacy of fingerspelling and visual imaging techniques in improving the spelling proficiency of prelingually and profoundly deaf students at the elementary level. They concluded that fingerspell coding may have a dual function in the development of written English. Primarily, it has a 'bridging effect' and it facilitates the retrieval of words from long-term memory. Thus, understanding how children learn and connect to the written form of English still requires in-depth research.

It is understood that early exposure to FS helps Deaf children become better readers. It has been observed that a similar technique is commonly used in deaf schools in Shillong. However, teachers also make use of *colour* to help children differentiate a vowel (presented in blue) from a

consonant (red) and learn how they may be combined to form syllables. This is practiced repeatedly till children have mastered the vowels and consonants and are familiar with connecting in words. This process requires children to memorize the alphabets including their form/colour and formulate words out of a combination of blue and red *coloured alphabets* through visual recognition rather than auditory decoding.

Studies on word-learning abilities in deaf and hard of hearing preschool children indicate that word-learning abilities are related to the size of the children's expressive vocabulary but not their chronological age. Regardless of the communication modality and the hearing status of the parents, their performance is clearly related to the number of words the children had in their lexicon (Munro, et.al, 2012). Akhtar and Tomasello, (2000) also pointed out that word learning processes are derived from increased knowledge of referential intentions based on frequent experiences of how new words are used by adults in their environment (in. Lederberg et.al, 2013). This discussion requires an understanding of how mapping of word recognition occurs in the *deaf brain* which will not be dealt with in this paper.

Adaptation of the Manipulative Visual Language Tool

The Manipulative Visual Language Tool (MVLT) was originally developed by Jimmy Challis Gore, a Deaf individual and Robert Gilles (2003), a hearing person. It was originally designed to support the literacy skills of students and develop their grammar and syntax.

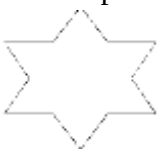
Here the tool has been modified to support D/HH children as per the available materials. Linoleum sheets were cut into different shapes and colours to represent different grammatical categories. It is imperative that D/deaf children have to be familiar with the word meanings and grammatical categories before it can be utilised. Six major parts of speech (necessary for the Primary level) were identified to correlate to the following shapes and colours:

Grammatical Category	Visual Tool Symbols
Nouns All nouns are represented by an EQUILATERAL TRIANGLE and BLUE is the colour code given to them.	
Nouns (person) It is represented by an equilateral triangle with a cut in one side.	
Nouns (place) It is represented by an equilateral triangle with a cut in two sides.	

Nouns (things) It is represented by an equilateral triangle with a cut in three sides.	
Pronouns It is represented by an equilateral triangle.	
Interrogatives Question words such as WHAT, WHERE, WHO, WHY, WHEN and HOW are represented by a pentagon in light blue colour.	
Verbs All verbs, except BE verbs have the shapes of a CIRCLE and is RED in colour	
Is Represented by a single red arrow facing towards the right.	
Was Represented by a single red arrow facing towards the left.	
Are Represented by a double arrow facing towards the right	
(i) WERE: Represented by a double arrow facing towards the left.	
TIME AND TENSE: SIMPLE PRESENT TENSE: Represented by a circle with an arrow inside facing downwards. The small cut on the circle indicates the top of the circle.	
SIMPLE PAST TENSE: Represented by a circle with an arrow inside facing towards the left. The small cut on the circle indicates the top of the circle.	
FUTURE TIME REFERENCE: Represented by a circle with an arrow inside facing towards the right. The small cut on the circle indicates the top of the circle	
PRESENT CONTINUOUS TENSE/ PAST CONTINUOUS TENSE/ FUTURE CONTINUOUS TIME REFERENCE: Represented by a circle with ONE hole inside.	

PRESENT PERFECT TENSE/ PAST PERFECT TENSE/ FUTURE PERFECT TIME REFERENCE: Represented by a circle with TWO holes inside	
PRESENT PERFECT PROGRESSIVE TENSE/ PAST PERFECT PROGRESSIVE TENSE/FUTURE PERFECT PROGRESSIVE TIME REFERENCE: Represented by a circle with THREE holes inside.	
PAST TENSE SUFFIXES: Represented by a circle with an arrow pointing to the left and a hole beneath the arrow. The small cut on the circle indicates the top of the circle.	
BASIC FORM OF IRREGULAR VERB (PRESENT TENSE) Represented by a circle with an arrow pointing upwards and a hole beneath the arrow. The small cut on the circle indicates the top of the circle.	
PAST TENSE OF IRREGULAR VERB Represented by a circle with an arrow pointing to the left. The small cut on the circle indicates the top of the circle.	
PAST PARTICIPLE OF IRREGULAR VERB Represented by a circle with an arrow pointing to the right and a hole beneath the arrow. The small cut on the circle indicates the top of the circle.	
MODAL AUXILLIARIES: Represented by a circle with a square inside.	
ADVERBS: Adverbs are represented by a RECTANGLE with two cuts on each side of the top and the colour code is BLACK.	
PREPOSITIONS: They are represented by a SEMI-CIRCLE and the colour code is YELLOW.	
PLURAL MARKERS: plurals are marked by the shape of an ARC and the colour code is BROWN.	

ADJECTIVES: they are represented by a SQUARE and are GREEN in colour.	
ARTICLES: A: a square with a single cut on the side.	
AN: a square with two cuts on the side.	
THE: a square with three cuts on the side.	
a. DETERMINERS THIS: a rectangle with a hole in the middle.	
THAT: a rectangle with an arrow facing the right.	
THESE: a rectangle with two holes in the middle:	
THOSE: a rectangle with a double pointed arrow facing the right :	
CONJUNCTIONS: they are represented by a parallelogram and are light green in colour.	
1. USAGE: The use of YES, NO and NOT are represented by stars and are white in colour  . YES: represented by a four pointed star.	

NO: represented by a five pointed star.  NOT: represented by a six pointed star. 	
PUNTUATION MARKS: a cut out of punctuations marks are also prepared and they are ORANGE in colour.	

Practicing the Tool in the Classroom

Different materials may be used for this tool, but the shapes and colours should be consistent throughout the elementary level (Class I-VIII). It can be used to enable students to identify grammatical categories and formulate sentences individually or in groups, as per the size of the classroom. The materials should be durable, easy to handle, and the texture should be such that both sides can be differentiated by touch. All the shapes and colours should be pasted on a chart paper with examples of sentence structures along with examples of words along with their grammatical categories as shown in Fig a. and Fig b. for children to validate their group work activities.

The charts should be hung on the classroom walls so that children can familiarise themselves with the different shapes and colours, and what they represent. Explanations can be given in the form simple sentences. Once the children understand the correlation of shapes and colours, and how they are used, they will pick up quickly. This is evident from the testing of the tools conducted with the children.

Fig a.

Fig. b

This tool can be initiated by associating basic words with shapes/colours, as shown in Fig b. and linked with different grammatical categories. It was observed that once the children had

some understanding of the rules of usage, they were able to form relevant words, construct basic sentences and gradually, even add words of their own when learning about nouns, verbs, adjectives etc.

This discussion on how this tool was used in classrooms is just one illustration of supporting L2 proficiency through the written form. There are many activities that can be devised using this MVLT (Giles and Gores, 2003) not only for teachers of English, but all subject teachers as well.

Teachers must be careful to select words and sentences which are familiar and commonly used in the immediate environment of the child so that he/she can quickly connect these language forms to his/her own understanding and use them meaningfully. This activity of teaching syntax using MVLT may be successful as a one-time activity with given words, but it needs to be used regularly for children to truly grasp the grammatical categories and use them in their own language experiences effectively.

This brings one to reflect on the process of language learning and teaching propagated by several constructivist theories. Such activities for visual learners require repeated attempts to familiarise the child to the process of formulating sentences using shapes/colours in a meaningful way. At present, this paper cannot conclude on how much understanding of syntax has taken place while using this tool, but this tool has been tested only for a noticeably short period.

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