iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** VIII **Month of publication:** Aug 2023

DOI: https://doi.org/10.22214/ijraset.2023.55323

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue VIII Aug 2023- Available at www.ijraset.com

Letter Fluency in Malayalam-English Typical Bilinguals

Ms Deepthi L[1], Dr Satish Kumaraswamy[2]
[1]*Final Post Graduate Student,* [2]*Ph.D. in Speech and Hearing Dr M. V. Shetty College of Speech and Hearing Malady Court, Kavoor, Mangalore- 15*

Keywords: Letter fluency, typically developing children, Malayalam- English bilinguals, L1 and L2 comparison.

I. INTRODUCTION

Speaking is a complex and unique ability of human beings that involves expressing thought in spoken words and phrases. A core operation in speech production is the preparation of words from a semantic base. According to Levelet (1990) during a conversation, an adult individual produces approximately two to three words per second from a huge repository or mental dictionary known as mental lexicon.

Word retrieval is core to language production and some researchers prefer to employ verbal fluency tasks to explore lexical access (Mousavi, Nazari & Jahan, 2020). Successful retrieval requires executive control over cognitive processes such as selective attention, selective inhibition, mental set shifting, internal response generation and self-monitoring.

Verbal fluency can be defined as the ability to generate words with speed and accuracy, it involves accessing one's own vocabulary repertoire or mental lexicon and retrieving the target word (John, Rajasekhar & Guddattu 2018). It has been used in relation to executive functions and cognitive processes such as long-term memory, attention, speed of information processing, inhibition and working memory (Elst, Boxtel, Breukelen and Jolles, 2016).

Tests of verbal fluency evaluate an individual's ability to retrieve specific information within restricted search parameters. The two most common parameters assessed in verbal fluency tests are *phonemic fluency* (letter fluency, initial letter fluency, phonological fluency, formal fluency or letter-cue word generation), assessed by asking the examinee to generate words beginning with a single letter and *semantic fluency* (category fluency or semantic- cue word generation), tested by asking the examinee to generate semantic category exemplars (most commonly names of animals). In the standard version of the task, participants are given 60 seconds to produce as many words as they can. Usually, only the productivity score (i.e., the raw number of legal words) is calculated. (Lezak, Howieson, Loring, Hannay and Fischer, 2004).

Letter fluency task allow participants to must generate a word from a phonemic category instead of from a semantic category, which is complex because phonemic generation is not a common strategy in word retrieval, nor is there an obvious congruency with the organization of words in some representational system (Strauss, Sherman and Spreen, 2006)

Vonk, Rizvi, Lao and Brickman (2018) stated that verbal fluency tasks are thought to be mediated by frontal brain regions for letter fluency and temporal regions for category fluency.

Literature for both clinical and experimental research, provides evidence on verbal fluency tasks as being sensitive to various adult neurological conditions such as frontal and temporal injury, Parkinson's disease, schizophrenia, depression, Alzheimer's disease, multiple sclerosis and traumatic brain injury (Monsch & Bondi,1994; Winocur, Leach & Freedman, 1998; Fridriksson, Moser, Shaw & Rorde, 2017; Spironelli, Calogero & Stegagno, 2011).

Verbal fluency tasks are quick and easy to administer as a part of neuropsychological assessment protocol in healthy adults and in clinical populations. However, there are only a few studies that analyzed word retrieval difficulties and their relationship to executive control processes using verbal fluency tasks in bilinguals.

II. REVIEW OF LITERATURE

The ability to retrieve a correct word from thousands of words requires a fundamental component of cognition, which is a thorough categorization skill. This process of categorization is lifelong, growing in complexity with maturation and widening of the knowledge of the world around them (Carneiro, Albuquerque and Fernandez, 2008)

Children around the globe grew up listening and learning multiple languages. As the bilingual population grows worldwide, the clinical population involving bilingual speakers also increases.

©IJRASET: All Rights are Reserved

Therefore, it is critical to understand the relationship between lexical and executive control in the bilingual clinical population to improve assessment and treatment approaches (Patra, Bose and Marinis, 2020).

Bilingual is defined as having or using two languages especially as spoken with the fluency characteristics of a native speaker; a person using two languages especially habitually and with control like that of a native speaker and bilingualism as the constant oral use of two languages (Webster, 1961). OR as by Myers- Scotton (2009) Bilingualism is the ability to use two or more languages sufficiently to carry on a limited casual conversation.

Bilingualism and multilingualism, in recent times, have largely become the rule and not the exception due to global expansion. The increased global mobility resulted in an increment in the number of people who have become bilingual at all levels of society. Bilingualism can influence people in their social-communicative, emotional, cultural, metalinguistic, cognitive, and neurological areas. In India however, this has always been the case due to the vast history and cultural differences. Indian census (2001) reports that 19.44 percent are bilinguals and 7.22 percent are trilingual. The evidence on whether multilingualism leads to even greater benefits than bilingualism is scant.

Cummins (2001) showed that children who have exposure to different languages gain various degrees of oral language use (OLU). They master oral language use in both languages at an early age or the second language would interrupt the learning of the primary language, thus causing delays in both languages, also children learning a second language may show a lag in one language for a period typically the language that is not spoken in their home. The level of development of children's mother tongue is a strong predictor of their second language development.

The cognitive ability of monolingual children and bilingual children are compared and found out that bilinguals achieve higher scores in tests of mental flexibility, understanding the conversational origin of names, distinguishing between semantic similarity and phonetic similarity, and non-verbal problem-solving tasks (Benelli & Gandolfi, 1979; Bialystok, 1986; Galambos & Goldin-Meadows, 1990)

Green (1998) studied Mental control of the bilingual lexico- semantic system, and theorized that certain areas of neurocognitive functioning within the executive domain are reinforced by processes related to bilingualism, resulting primarily from the practice of mentally switching between translations of two or more languages and selectively utilizing the language appropriate to the context, while simultaneously inhibiting other known languages.

Researches on bilingualism have typically investigated language processing and executive control mechanisms separately. As a result, dichotomous bilingual consequences have been observed relative to monolinguals, specifically, bilingual limitations on language tasks and bilingual advantages on executive control tasks (Bialystok, Craik, Green and Gollan, 2009).

Tests of verbal fluency evaluate an individual's ability to retrieve specific information within restricted search parameters (Lezak, Howieson, Loring, Hannay and Fischer, 2004). Both *category fluency* (e.g., list animals) and letter fluency (e.g., list words that begin with /k/) place demands on semantic memory and executive control functions. However, *letter fluency* places greater demands on executive control than category fluency, making this task well-suited to investigating potential bilingual advantages in word retrieval. (Friesen, Luo, Luk and Bialystok, 2014).

Verbal Fluency tasks provide measurements of a wide range of cognitive functions, such as (1) executive function (e.g., systematic search, cognitive flexibility, and processing speed), (2) working memory and semantic memory, (3) language, (4) verbal ability, which requires speaking and knowledge of words (Moura, Simoes and Pereira, 2014).

Hazin, Leite, Oliveira and Marques (2016) tried to document normative data on verbal fluency tasks in children by considering gender, age, education, and geopolitical region of origin with auxiliary purposes in the neuropsychological diagnosis of disorders that occur with executive changes No effect of gender on the children's performance was found. However, significant differences between age groups were observed, with better performance in letter tasks in older children and better performance in letter tasks compared with category tasks. Significant regional differences in performance on the letter VF task were observed. These results reinforce the importance of regional normative data in countries with high regional cultural variations, such as Brazil.

Shao, Janse, Visser and Meyar (2014) examined the contribution of verbal ability and executive control to verbal fluency performance in 82 older adults and found that the performance on the letter and category fluency tasks was related to indicators of vocabulary size, lexical access speed, updating, and inhibition ability. In regression analysis the number of words produced in both fluency tasks was predicted by updating ability and the speed of the first response was predicted by vocabulary size and for category fluency, only lexical access speed.

Gaillard, Sachs, Petrella and Hunter (2003) in their fMRI study of verbal fluency in children and adults, gain the insight into maturation of language neural networks. They suggest that the younger children may have less consolidated and more bilateral representation of language processing areas.

Nouri, Moradi, Zardkhaneh and Zahedian (2012) traced the influence of bilingualism on the letter and category fluency tasks. Participants were 1,600 monolingual and bilingual children from Iran, required to generate as many words within 3 minutes with nine Persian letters and thirty-one categories. Bilingual children generated more words than monolingual children in the letter fluency task. However, Persian monolinguals generated significantly more words than both bilingual groups in the category fluency task. They stated bilingualism can be both advantageous and disadvantageous and produce a dissociative effect.

A. Neuroanatomical Correlates of Verbal Fluency

Research in adult studies on neuroanatomical correlates of verbal fluency has revealed the role of extensive and sophisticated neuroanatomical networks and distinct regions of neuronal activation. Increased activation has been reported in the left hemisphere (left dorsolateral prefrontal cortex, left premotor, supplementary motor cortex, left inferolateral temporal lobe, superior-middle temporal gyrus, left posterior inferior parietal lobe, insula, precuneus and anterior cingulate gyrus), right dorsolateral and medial frontal region, left pre-supplementary motor area-dorsal caudate nucleus–ventral anterior thalamic loop, Basal ganglia (caudate nucleus and putamen), cerebellum and hippocampus (Petrosini & Molinari, 2000; Meinzer & Flaisch, 2009; Flaisch & Harnish, 2012; Leib, Tuscher & Tadi, 2014; Methqal, Marsolais & Wilson,2019; Newman, Murray & Paek, 2020)

Studies documented the evidence of coordinated activity of a number of brain areas, during the verbal fluency production of children developing typically, particularly the frontal lobe; left dorsolateral prefrontal gyrus, inferior frontal gyrus, mesial frontal areas, including supplementary motor area, thalamus and left parietal lobe, inferior parietal lobe, posterior supramarginal gyrus, changes in the cortical thickness by middle childhood (Brown, Lugar & Coalson, 2005; Porter, Collins & Luciana, 2011; Tamekuchi, Hashimoto, Honda, Miyamura & Abo, 2011; Gaillard, Sachs, Balsamo, & Mckinney, 2023).

Though both children and adults activated similar regions, predominantly in the left inferior and middle frontal cortex, differences were noted in regions associated with language including the perisylvian regions surrounding Wernicke's and Broca's areas in the left hemisphere (Gaillard, Sachs, Ahmed, Petrella & Braniecki 2000; Gaillard, Pannier, Mott, Barnett &Theodore 2003; Porter, Collins, Muetzel Lim & Luciana 2011). These findings indicate that word production during verbal fluency tasks requires an extensive neural network different from an adult population with an age-related difference in activation patterns in terms of wider cortical activation in children. This greater activation was attributed to developmental plasticity for the ongoing organization of neural networks, which underlie language capacity.

The neuroanatomic correlates of verbal fluency have also been studied among disordered populations of children and adults. Verger, Levin & Jurado (2001) reported that the recovery pattern was slower in younger children as compared to older children (with a head injury) and that the effect was greater for frontal lesions involving the left hemisphere on phonemic fluency. The authors interpreted this as the reflection of the more established functional involvement of the left frontal region in the expressive language of older children.

Medina, Guibert, Sadler and Paul (2011) reported smaller activation in the left dorsal inferior frontal gyrus with no activation in the posterior superior temporal gyrus in children with Specific Language Impairment. The presence of right dominant activation of the anterior insula and ventral inferior frontal gyrus in comparison with the control group was also reported.

Puga, Ekonen, Pintos and Lascombes (2020) analyzed the performance of verbal fluency in participants with neurodevelopmental disorders - low intellectual performance, attention deficit hyperactive disorder, and dyslexia. Participants with low intellectual performance showed lower phonological and semantic fluency scores than participants with attention deficit hyperactive disorder and a lower performance in semantic fluency than the dyslexia group.

B. Factors Affecting Verbal Fluency

Studies have examined the evidence for the variables showing a positive influence on verbal fluency performance. Phonemic and semantic fluency improves during childhood and adolescence and shows a mild decline in old age. Increases from childhood to adulthood have been associated with significant gains in semantic memory and executive functions during this period (Fichman, Machado, Santos, Carvalho, Fernandes & Koening, 2009). Educational level has a significant influence on both phonemic and semantic fluency tasks, with higher levels of education associated with better performance (Aziz, Khatar, Emara, Tawfik, Rasheedy, Muhammedin & Qassem, 2017). Authors have found little evidence of gender differences in the number of words generated on either phonemic or semantic fluency (Mathuranath, Kumar, Mathew, Annamma & Cherian, 2003). Cultural and linguistic factors are also an important and sometimes underestimated influence on neuropsychological assessment. The influence of psychosocial factors such as socioeconomic status, educational background, and profession of the caregiver on verbal fluency performance has been documented (Ardila & Rosselli, 1994; Hurks, Schrans, Meija, Wassenberg, Feron & Jolles, 2010).

©IJRASET: All Rights are Reserved

Mathuranath, Cheriyan, Alexander and Sharma (2010) examined the effects of age, education, and gender on the verbal fluency task of 153 cognitively unimpaired older individuals (Malayalam speakers). They concluded that level of education significantly affects letter fluency and age inversely affects category fluency with no effects of gender on any of the verbal fluency tasks.

D'cruz, Rajarathnam and Pravinkumar (2013) compared 3 groups of Insightly unimpaired, 150 subjects (20- 50 years, 60- 75 years and above 75 years) with minimum 6th standard education. Semantic category verbal fluency test and verbal mental tracking test were administered. The result reflected that verbal fluency declined significantly with aging. Significant deflections were not observed in terms of cognitive inflexibility and executive dysfunction.

Dr. Acharya (2014) surveyed the evidence for the effects of the medium of instruction (English and Kannada) irrelevant of gender on phonemic fluency in primary school students, aged between 8-9 years using the Controlled Oral Word Association Test. The reflected outcome was, English medium students have more phonemic fluency than Kannada medium students.

Kishiyama, Boyce, Jimenez, Perry and Knight (2009) compared the performance of the semantic fluency task (28 children, mean age 9.5 years), the children from lower socioeconomic background performance score was less than children from higher socioeconomic backgrounds.

Hurks, Wassenberg, Meijs and Jolles (2010), by conducting research on 294 healthy Dutch-speaking children, found that a higher mean level of parental education is associated with significantly better animal verbal fluency, and design fluency (structured and unstructured test versions were administered).

Ardila and Rosselli (1994) reported lower performance among children from low socioeconomic status in Columbia. They attributed the low performance to the impoverished educational experience children received in school in terms of teachers, teaching facilities and infrastructure.

Thus, to summarize, children growing up learning bilingual oral languages gain various degrees of oral language use and the bilingualism of a given person may vary with time. Children typically become proficient in both languages at an early age, or show concern that the second language would interrupt the learning of the first language, thus causing delays in both languages; also, children learning a second language or two languages simultaneously may show a lag in one language for a period, typically the language that is not spoken in their home. Since the development in the second language is partially a function of the level of oral language use of the first language, it affects the phonemic generations in the phonemic verbal task. In India where, a second language is only introduced at schooling, exposure and experience in the language are essential factors to be noted.

Verbal fluency task in bilinguals was reported to be slower and more effortful retrieval for each word produced, due to interference from the nontarget language (Sandoval, Gollan, Ferreira, & Salmon, 2010). But recent studies have indicated a second effect attributable to vocabulary size. When language OLU is matched, bilinguals perform better on letter fluency (which depends more extensively on cognitive control. The research also puts forward varied results for the effect of age, education, and linguistic and psychosocial aspects on phonemic fluency.

C. Need Of The Study

Bilinguals vary in degree of proficiency in their two languages and the bilingualism of a given person may vary with time. There is a need to find the phonemic fluency capacity, in L1 (Malayalam) and L2 (English), especially in typical children to understand the vocabulary size for each letter. Understanding verbal fluency norms among typical children is paramount for the interpretation of verbal fluency among the disordered populations. The lack of demographically adjusted norms had been a major obstacle for childhood research using verbal fluency. In children, the evaluation of verbal fluency performance needs to be understood from a developmental and linguistic perspective as these factors influence performance. Clearly, there is a need for a deeper understanding of the elusive nature of verbal fluency in typical children for enhancing its utility to a greater extent in pediatric disorders. Generally, the practice by both medical professionals and speech-language pathologists dealing with the population is to compare the norms based on the Western population. The currently available normative data relates to Western samples, inappropriate for evaluating Indian children. Linguistic factors (differences in word length, frequency of words/letters between languages), socio-cultural dissimilarity, extrinsic factors (differences in tasks) and developmental variations, prevent following a universal protocol of verbal fluency testing. The present study will facilitate an understanding of the lexical access of bilingual children developing normally.

III. METHOD

A. Aim

The aim of the present study was to compare the performance of letter fluency in Malayalam (L1) and English (L2) between group I- Government school and group II- CBSE school typical children.

©IJRASET: All Rights are Reserved

B. Participants

In order to carry out the study, 20 children (both male and female) for each group aged 8 to 10 years were selected from Government Higher Secondary School in Kulashekharapuram, and Sree Narayana Central School in Kayamkulam. The selected children were Malayalam- English bilinguals.

C. Inclusion Criteria

Children included in the study are based on teachers' reports/school records. The candidacy filter was based on the following criteria:

1) Children between the ages of 8 to 10 years.
2) Currently in lower primary education.
3) Bilingual children (Malayalam- English) with Malayalam as their first language.

D. Exclusion Criteria

The exclusion was done based on direct observation, teachers' reports, school records, and parental information obtained through telephonic interviews.

1) Children with a history of neurological disorders, developmental disorders, language difficulties, motor limitations, and hearing deficits.
2) Children requiring special educational placement.

E. Procedure

A pre-examination semi-structured interview was conducted to collect the demographic data (age, gender, education level, medical history, communication, psychiatric history, scholastic performance, and economic status) of each participant were studied.

In order to check their language proficiency in each language, Language Experience and Proficiency Questionnaire (LEAP-Q) was administered to each participant. Assessment of Language Development- A Manipal Manual (ALD- MM) was used to measure each child's receptive and expressive language skills.

The task of verbal fluency was *Phonemic fluency/ Letter fluency.* The letter which occurred most frequently in the word-initial position in each language was considered.

For Malayalam /p/, /n/ and /k/ sounds were considered. These letters were selected based on the ratio of words in neuropsychological evaluations in Malayalam (Mathuranath, George, Cherian, Alexander and Sarma, 2009).

For English /f/, /a/ and /s/ sounds were considered. Borkowski, Benton and Spreen (1967) identified a series of easy letters based on word frequency in English.

Flashcards containing the target phonemes were presented and the subject is instructed to produce as many words (nouns excluding names and places) within the restricted time period (60 seconds). The children were instructed to do the task both in Malayalam and English.

The scores were calculated based on the responses elicited within the stipulated time.

The examiner gave an indication to each child by saying start. A stopwatch was used to track the time and recordings were done in PRAAT software using hp laptop with a Sony INZONE H9 headset.

F. Analysis

Score 1 was given to the responses having a proper noun.

Score 0 was given to the responses lacking nouns.

For the analysis purpose, the Total Number of Correct Words (TNCW) was used - the total number of correct words produced during each type of fluency task was calculated by excluding

a) Intrusions (words not an exemplar of the category or letter specified),
b) Perseverations (repetitions of any correct words already given as a response)
c) Morphological variants (example: bus, buses)

For the scoring purpose, the raw score of the total number of correct words obtained was retained, instead of being converted to percentage scores. This was done as the percentage of the correct words generated did not provide meaningful information on fluency performance, as compared to the reporting of the raw number of words generated (Troyer, 2000). For example, if the child says "cat, dog, cow, buffalo, ox, cat, lion" the total number of correct words was considered as six.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

IV. RESULT AND DISCUSSION

The present study evaluates phonemic fluency performance in 40 Malayalam- English typical bilinguals. The scores were obtained from group I- 20 Government school children and group II- 20 CBSE school children were subjected to statistical analysis and the results derived are discussed below.

Figure 1.1

Showing the mean for L1 and L2 of total 40 participants

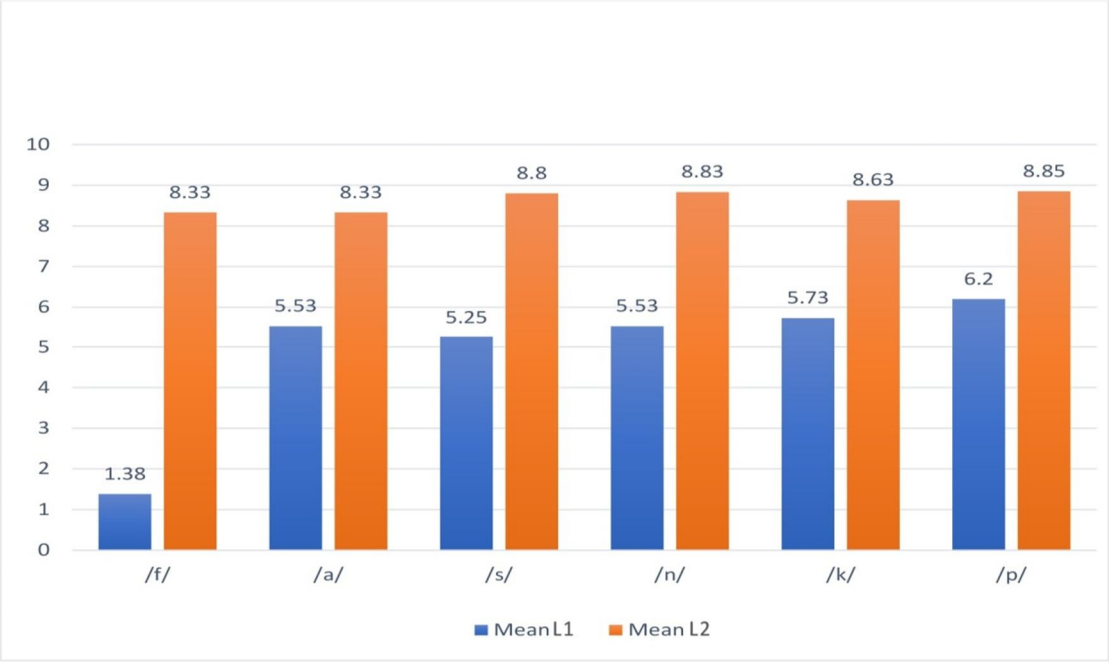
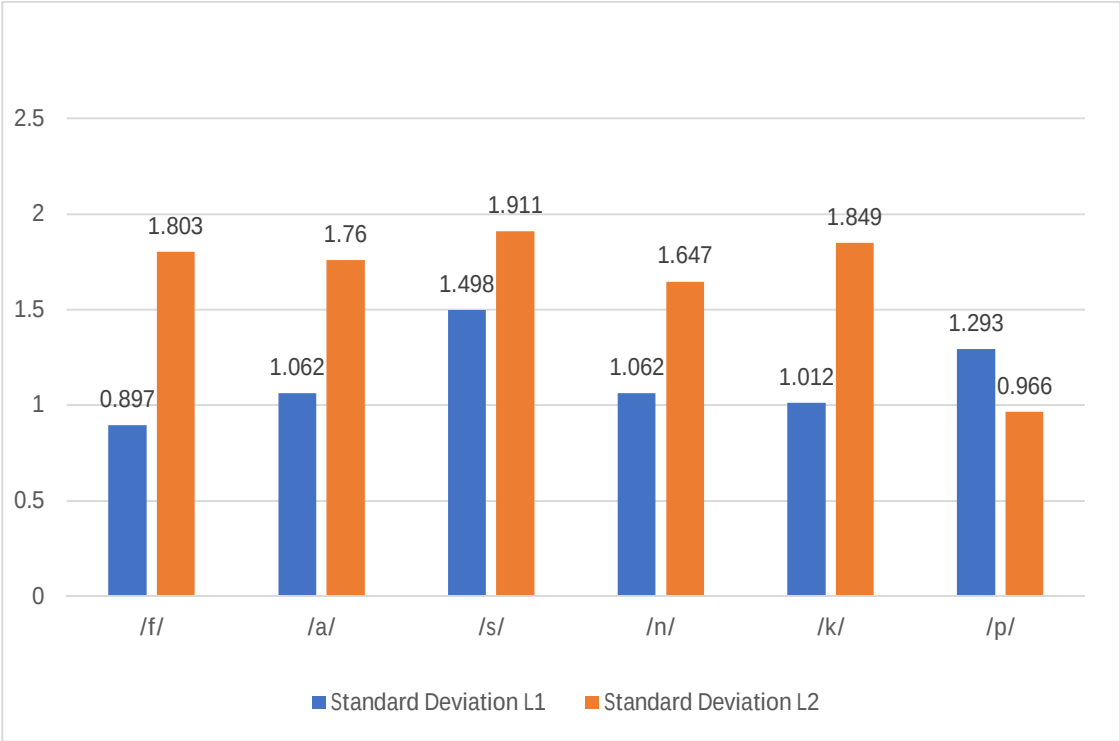


Figure 1.2

Showing the standard deviation for L1 and L2 of total 40 participants



©IJRASET: All Rights are Reserved

Table 1.1
The table shows the mean, standard deviation and statistical value for L1 and L2 of Group I (Govt School) of 20 students and Group II (CBSE School) of 20 students.

Stimulus	Language		N	Mean	Std. Deviation	t test p-value	Significance
/f/	Group I	L1	20	1.45	0.887	0	HS
		L2	20	7.7	1.658		
	Group II	L1	20	1.3	0.923	0	HS
		L2	20	8.95	1.761		
	Total	L1	40	1.38	0.897	0	HS
		L2	40	8.33	1.803		
/a/	Group I	L1	20	5.55	1.191	0	HS
		L2	20	8.3	1.78		
	Group II	L1	20	5.5	0.946	0	HS
		L2	20	8.35	1.785		
	Total	L1	40	5.53	1.062	0	HS
		L2	40	8.33	1.76		
/s/	Group I	L1	20	4.8	1.508	0	HS
		L2	20	8.25	1.916		
	Group II	L1	20	5.7	1.38	0	HS
		L2	20	9.35	1.785		
	Total	L1	40	5.25	1.498	0	HS
		L2	40	8.8	1.911		
/n/	Group I	L1	20	5.45	1.05	0	HS
		L2	20	8.7	1.809		
	Group II	L1	20	5.6	1.095	0	HS
		L2	20	8.95	1.504		
	Total	L1	40	5.53	1.062	0	HS
		L2	40	8.83	1.647		
/k/	Group I	L1	20	5.75	1.118	0	HS
		L2	20	8.85	2.084		
	Group II	L1	20	5.7	0.923	0	HS
		L2	20	8.4	1.603		
	Total	L1	40	5.73	1.012	0	HS
		L2	40	8.63	1.849		
/p/	Group I	L1	20	6.05	0.999	0	HS
		L2	20	8.95	1.605		
	Group II	L1	20	6.35	0.933	0	HS
		L2	20	8.75	1.293		
	Total	L1	40	6.2	0.966	0	HS
		L2	40	8.85	1.442		

*HS- Highly significant

From the result obtained on the comparison of performance in the letter fluency task score between L1 and L2, which is shown in Figure 1.1, Figure 1.2 and Table 1.1 it is understood that a highly significant difference (P=0) in the mean and standard deviation was noticed.

Figure 2.1
Showing the mean and standard deviation for Group I (Govt School) and Group II (CBSE school)

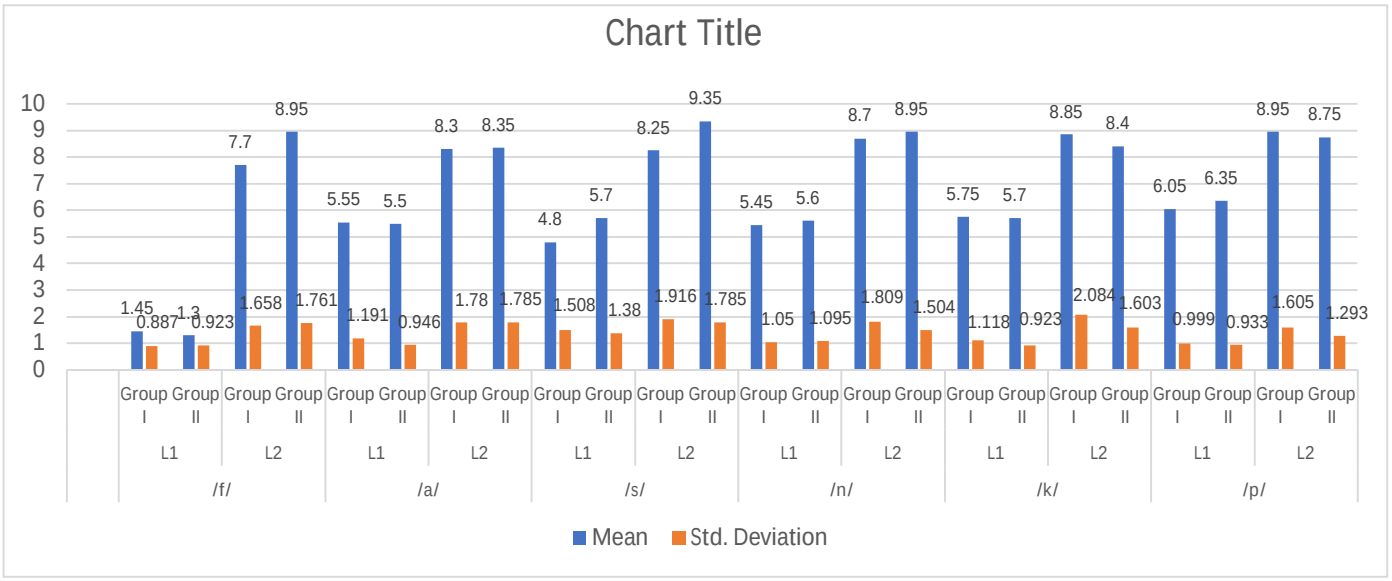


Table 2.1
Contains the details of the mean, standard deviation and statistical value of Group I (Govt School) of 20 students and Group II (CBSE school) of 20 students.

Stimulus	Language		N	Mean	Std. Deviation	t test p value	Significance
/f/	L1	Group I	20	1.45	0.887	0.603	NS
		Group II	20	1.3	0.923		
	L2	Group I	20	7.7	1.658	0.026	sig
		Group II	20	8.95	1.761		
/a/	L1	Group I	20	5.55	1.191	0.884	NS
		Group II	20	5.5	0.946		
	L2	Group I	20	8.3	1.78	0.93	NS
		Group II	20	8.35	1.785		
/s/	L1	Group I	20	4.8	1.508	0.056	NS
		Group II	20	5.7	1.38		
	L2	Group I	20	8.25	1.916	0.068	NS
		Group II	20	9.35	1.785		
/n/	L1	Group I	20	5.45	1.05	0.661	NS
		Group II	20	5.6	1.095		
	L2	Group I	20	8.7	1.809	0.637	NS
		Group II	20	8.95	1.504		
/k/	L1	Group I	20	5.75	1.118	0.878	NS
		Group II	20	5.7	0.923		
	L2	Group I	20	8.85	2.084	0.449	NS
		Group II	20	8.4	1.603		
/p/	L1	Group I	20	6.05	0.999	0.878	NS
		Group II	20	6.35	0.933		
	L2	Group I	20	8.95	1.605	0.449	NS
		Group II	20	8.75	1.293		

*NS- Not significant, Sig- Significant

©IJRASET: All Rights are Reserved

From Figure 2.1 and Table 2.1, it can be concluded that while comparing the letter fluency task score there is no significant difference between the mean and standard deviation of participants in Group 1 and Group 2. The only significant score obtained was when comparing the score of stimulus /f/ for L2.

V. DISCUSSION

Based on the result 100% of children in group I (Government school) and group II (CBSE school) showed better performance for English (L2) than that of their native language Malayalam (L1). While comparing the performance between the government and CBSE school children no significant difference was observed except for the stimulus /f/ in L2 and the present study is the first of its kind in the Indian languages comparing the letter fluency in L1 and L2.

Children from all age groups were seen to generate words on Initial Letter Fluency, by clustering words together that shared similar phonemic properties. The most common strategies employed by children for organizing the word retrieval during Initial Letter Fluency task included the generation of words that began with the same initial two letters (e.g., /kuppi/-/kuz̪əl/) and also words beginning with same initial two syllables (e.g., /kaz̪uɖa/, /kaz̪ugən/). Few children attempted to generate words following semantic rules when they were unable to generate more words based on phonemic characteristics. One example noted during analysis included the production of phonemically related words belonging to body parts (e.g., /nəʊz/, /nɛ́jl/, /nek/).

The *Letter Fluency task* involves no heuristic searches for items (Azuma, 2004; Leggio, Silveri & Petrosini, 2000) from the semantic stores. The task of Initial Letter Fluency, as Wood, Abbott and Jackson (2001) explained, is neither a natural component of language processing nor follows the familiar access route to the lexicon like the Semantic Category Fluency task. It involves the intentional use of strategic search for broader and less defined phonological levels of word representation which makes the organization's task more effortful, demanding and difficult. During the Initial Letter Fluency task, the participants need to avoid searching based on semantic criteria involving the meaning of words and follow the orthographic route involving the feature of the surface structure of the words.

The decrease in scores in Malayalam can be plausibly attributed to the presence of greater average word length and longer words being used more frequently in daily use. While the average word length has been reported to be around five in English, it has been reported to be near 10.255 (the highest among the Indian languages) with the average number of syllables per word in Malayalam being 4.44 (Bharati and Varsha, 2002).

Further evidence regarding differences in performance on Initial Letter Fluency tasks comes from the study by Borkowski, Benton & Spreen (1967), which indicated that vocabulary size for each letter differed resulting in varied dictionary frequency for each letter. Researchers maintain the deliberate vocabulary learning and teaching are the best predictors of effectual vocabulary development (Elgort, 2011; Laufer, 2005). In a meta-analysis of numerous L2 vocabulary learning studies, Schmitt (2008) concluded that every language course must explicitly focus on vocabulary to maximize learning and long-term retention of lexical items. He points to the major role that explicit learning tasks play in the vocabulary acquisition process.

Huckin and Coady (1999) in their study on the role of incidental learning in the acquisition of a foreign language concluded that incidental learning is central to second language vocabulary development of primary school children.

Malik and Asnur (2017) reported that the use of smartphones and media helps students to improve their foreign language by accessing foreign - language speakers, their songs and vocabulary.

Deborah (2006) in her study to find the effects that technology has on second language learning stated that the effect of the technology-enhanced curriculum made L2 learning easier and technology is a powerful tool with tremendous effects in all areas, from language skills (i.e., reading, listening, speaking, and writing) as well as providing students with the opportunity to (1) become more global and (2) develop higher-level critical thinking skills.

VI. SUMMARY AND CONCLUSION

Verbal fluency measures have been well-researched in the adult population, research on these measures in children is scanty. Despite the potential of this analysis as a measure of word retrieval in children, it is not generally used in clinical or experimental studies with typically developing children or children with brain injury. Moreover, with literature support of verbal fluency measures being sensitive to neurodevelopment, there is a lack of clarity on the performance of these instruments in children or how they are dependent on various factors.

©IJRASET: All Rights are Reserved

The lack of Indian norms for these tests, as well as the paucity of information concerning the relationship between the different measures in children, has hindered the full use of this important diagnostic instrument, limiting their function to that of merely describing children's linguistic abilities.

The present study analysed and compared the performance in the letter fluency task of L1 (Malayalam) and L2 (English) among typical bilingual children. The study also focussed on comparing the performance of letter fluency tasks between the students of Government school and CBSE school.

40 children were selected after administering the Language Experience and Proficiency Questionnaire (LEAP-Q) and Assessment of Language Development (ALD). These children were divided into Group I of 20 students from a government school and Group II of 20 students from a CBSE school, ages ranging from 8 years to 10 years. The performance in letter fluency was evaluated using /p/, /n/ and /k/ sounds for Malayalam and /f/, /a/ and /s/ sounds for English.

Based on the result all the 40 children in group I and group II showed better performance in English (L2) than that of their native language Malayalam (L1). While comparing the performance between the government school children and CBSE school children no significant difference can be observed except for the stimulus /f/ in L2.

To summarise, we can say that letter fluency in the English language is better than that of the native language Malayalam. The implementation of Foreign language classrooms, Medium of instruction and Medium of communication in school and the influence of media might have a positive impact and promote the use of L2 thereby improving the fluency and concrete second language abilities.

A. Limitations Of The Study

Only the Letter fluency task in Verbal fluency was considered.

The age group selected for the sample was 8 to 10 years.

A large sample size would have yielded more reliable results.

B. Future Implication

Can be done with more sets of sounds.

Category fluency in Verbal fluency can also be assessed.

Comparison between the age groups can be done.

A comparative study of the performance of girls and boys can be done.

REFERENCES

[1] Abwender, D. A., Swan, J. G., Bowerman, J. T., & Connolly, S. W. (2001). Qualitative analysis of verbal fluency output: Review and comparison of several scoring methods. Assessment, 8(3), 323-338. doi: 10.1177/107319110100800308.

[2] Adarsh, K. (2013). Assessment of Neuropsychological functions in Schizophrenia. Indian Journal of Clinical Psychology, 40 (1), 13-22.

[3] Agranovich, A. V., & Puente, A. E. (2007). Do Russian and American normal adults perform similarly on neuropsychological tests? Preliminary findings on the relationship between culture and test performance. Archives of Clinical Neuropsychology, 22(3), 273-282. doi:10.1016/j.acn.2007.01.003.

[4] Anderson, P. (2002). Assessment and Development of Executive Function (EF) During Childhood. Child Neuropsychology, 8(2), 71-82. doi: 10.1076/chin.8.2.71.8724.

[5] Anderson, V. A., Anderson, P., Northam, E., Jacobs, R., & Catroppa, C. (2001). Development of executive functions through late childhood and adolescence in an Australian sample. Developmental Neuropsychology, 20(1), 385-406. doi:10.1207/S15326942DN2001_5.

[6] Antonucci, S. M., Beeson, P. M., Labiner, D. M., & Rapcsak, S. Z. (2008). Lexical retrieval and semantic knowledge in patients with left inferior temporal lobe lesions. Aphasiology, 22(3), 281-304. doi:10.1080/02687030701294491.

[7] Baldo, J. V., Schwartz, S., Wilkins, D.P, & Dronkers, N. F. (2006). Role of frontal versus temporal cortex in verbal fluency as revealed by voxel-based lesion symptom mapping. Journal of the International Neuropsychological Society, 12(6) 896-900. doi: 10.1017/S1355617706061078.

[8] Baldo, J. V., & Shimamura, A. P. (1998). Letter and category fluency in patients with frontal lobe lesions. Neuropsychology, 12(2), 259-267. doi: 10.1037/0894-4105.12.2.259.

[9] Birn, R. M., Kenworthy, L., Case, L., Caravella, R., Jones, T. B., Bandettini, P. A., & Martin, A. (2010). Neural systems supporting lexical search guided by letter and semantic category cues: A self-paced overt response fMRI study of verbal fluency. NeuroImage, 49(1), 1099-1107. doi: 10.1016/j.neuroimage.2009.07.036.

[10] Braga, L. W., Souza, L. N., Najjar, Y. J., & Dellatolas, G. (2007). Magnetic resonance imaging (MRI) findings and neuropsychological sequelae in children after severe traumatic brain injury: The role of cerebellar lesion. Journal of Child Neurology, 22(9), 1084-1089. doi: 10.1177/0883073807306246.

[11] Crawford, J. R., Wright, R., & Bate, A. (1995). Verbal, figural and ideational fluency in CHI. Journal of International Neuropsychological Society, 1, 321.

[12] Crockett, D. J. (1974). Component analysis of within correlations of language-skill tests in normal children. The Journal of Special Education, 8(4), 361-375.

[13] Crosson, B., Benefield, H., Cato, M. A., Sadek, J. R., Moore, A. B., Wierenga, C. E., ... & Briggs, R. W. (2003). Left and right basal ganglia and frontal activity during language generation: Contributions to lexical, semantic, and phonological processes. Journal of the International Neuropsychological Society, 9(7), 1061-1077. doi: 10.1017/S135561770397010X.
[14] D'Cruz, S.M., Rajaratnam, N., & Kumar, M.P. (2013). The effect of aging on verbal fluency in South Indians. IOSR Journal of Dental and Medical Sciences, 6(3), 40-42.
[15] Dellatolas, G., Braga, L. W., Souza, L. D. N., Filho, G. N., Queiroz, E., & Deloche, G. (2003). Cognitive consequences of early phase of literacy. Journal of the International Neuropsychological Society, 9(5), 771-782. doi:
[16] 10.1017/S1355617703950107.
[17] Filippetti, V. A., & Allegri, R. F. (2011). Verbal fluency in Spanish-speaking children: analysis model according to task type, clustering, and switching strategies and performance over time. The Clinical Neuropsychologist, 25(3), 413-436. doi: 10.1080/13854046.2011.559481.
[18] Hoekstra, R. A., Bartels, M., Van Leeuwen, M., & Boomsma, D. I. (2009). Genetic architecture of verbal abilities in children and adolescents. Developmental Science, 12(6), 1041-1053. doi: 10.1111/j.1467-7687.2009.00843.x.
[19] Holtzer, R., Goldin, Y., & Donovick, P. J. (2009). Extending the administration time of the letter fluency test increases sensitivity to cognitive status in aging. Experimental Aging Research, 35(3), 317-326. doi: 10.1080/03610730902922119.
[20] Hurks, P. P. M., Vles, J. S. H., Hendriksen, J. G. M., Kalff, A. C., Feron, F. J. M., Kroes, M., ... & Jolles, J. (2006). Semantic category fluency versus initial letter fluency over 60 seconds as a measure of automatic and controlled processing in healthy school-aged children. Journal of Clinical and Experimental Neuropsychology, 28(5), 684-695. doi:10.1080/13803390590954191.
[21] Jurado, M. B., & Rosselli, M. (2007). The elusive nature of executive functions: A review of our current understanding. Neuropsychology Review, 17(3), 213-233. doi:10.1007/s11065-007-9040-z.
[22] Kave, G. (2005). Phonemic fluency, semantic fluency, and difference scores: Normative data for adult Hebrew speakers. Journal of Clinical and Experimental Neuropsychology, 27(6), 690-699. doi: 10.1080/13803390490918499.
[23] Kave, G. (2006). The development of naming and word fluency: Evidence from Hebrewspeaking children between ages 8 and 17. Developmental Neuropsychology, 29(3), 493-508. doi: 10.1207/s15326942dn2903_7.
[24] Kircher, T., Nagels, A., Kirner-Veselinovic, A., & Krach, S. (2011). Neural correlates of rhyming vs. lexical and semantic fluency. Brain Research, 1391, 71-80. doi: 10.1016/j.brainres.2011.03.054.
[25] Kishiyama, M. M., Boyce, W. T., Jimenez, A. M., Perry, L. M., & Knight, R. T. (2009). Socioeconomic disparities affect prefrontal function in children. Journal of Cognitive Neuroscience, 21(6), 1106-1115. doi: 10.1162/jocn.2009.21101.
[26] Korkman, M., Kemp, S. L., & Kirk, U. (2001). Effects of age on neurocognitive measures of children ages 5 to 12: A cross-sectional study on 800 children from the United States. Developmental Neuropsychology, 20(1), 331-354. doi:
[27] 10.1207/S15326942DN2001_2.
[28] Leggio, M. G., Silveri, M. C., Petrosini, L., & Molinari, M. (2000). Phonological grouping is specifically affected in cerebellar patients: A verbal fluency study. Journal of Neurology, Neurosurgery & Psychiatry, 69(1), 102-106. doi: 10.1136/jnnp.69.1.102.
[29] Lezak, M. (1995). Neuropsychological Assessment (3rd ed.). New York, NY: Oxford University Press.
[30] Luo, L., Luk, G., & Bialystok, E. (2010). Effect of language proficiency and executive control on verbal fluency performance in bilinguals. Cognition, 114(1), 29-41. doi: 10.1016/j.cognition.2009.08.014.
[31] Mathuranath, P. S., Cherian, J. P., Mathew, R., George, A., Alexander, A., & Sarma, S. P. (2007). Mini Mental State Examination and the Addenbrooke's Cognitive Examination: Effect of education and norms for a multicultural population. Neurology India, 55(2), 106-110.
[32] Mathuranath, P. S., George, A., Cherian, P. J., Alexander, A., Sarma, S. G., & Sarma, P. S. (2003). Effects of age, education and gender on verbal fluency. Journal of Clinical and Experimental Neuropsychology, 25(8), 1057-1064. doi: 10.1076/jcen.25.8.1057.16736.
[33] Messinis, L., Kosmidis, M.H., Vlahou, C., Malegiannaki, A. C., Gatzounis, G., Dimisianos, N.,…Papathanasopoulos, P. (2013). Phonological fluency strategy of switching differentiates relapsing-remitting and secondary progressive multiple sclerosis patients. ISRN Neurology, Article ID 451429, 7 pages, doi: 10.1155/2013/451429.
[34] Oberg, G., & Ramirez, M. (2006). Cross-linguistic meta-analysis of phonological fluency: Normal performance across cultures. International Journal of Psychology, 41(5), 342-347.
[35] Pekkala, S., Goral, M., Hyun, J., Obler, L. K., Erkinjuntti, T., & Albert, M. L. (2009). Semantic verbal fluency in two contrasting languages. Clinical Linguistics Phonetics, 23(6), 431-445. doi: 10.1080/02699200902839800.
[36] Porter, J. N., Collins, P. F., Muetzel, R. L., Lim, K. O., & Luciana, M. (2011). Associations between cortical thickness and verbal fluency in childhood, adolescence, and young adulthood. NeuroImage, 55(4), 1865-1877. doi: 10.1016/j.neuroimage.2011.01.018.
[37] Prema, S., & Manu, J. (2001). "Malayalam frequency count study report", Department of Linguistics, University of Kerala. Retrieved from http://www.clickeralam.org/
[38] MalReport.pdf.
[39] Rosselli, M., Ardila, A., Navarrete, M. G., & Matute, E. (2010). Performance of Spanish/English bilingual children on a Spanish-language neuropsychological battery: Preliminary normative data. Archives of Clinical Neuropsychology, 25(3), 218-235. doi:10.1093/arclin/acq012.
[40] Schwartz, S., Baldo, J., Graves, R. E., & Brugger, P. (2003). Pervasive influence of semantics in letter and category fluency: A multidimensional approach. Brain and Language, 87(3), 400-411. Retrieved from http://linkinghub.elsevier.com/ retrieve/pii/S0093934X0300141X.
[41] Spironelli, C., Angrilli, A. (2015). Language-related gamma EEG frontal reduction is associated with positive symptoms in schizophrenia patients. Schizophrenia Resources.165(1):22-9. doi: 10.1016/j.schres.2015.04.003.
[42] Sincoff, J. B., & Sternberg, R. J. (1988). Development of Verbal Fluency Abilities and Strategies in Elementary-School-Age Children. Developmental Psychology, 24(5), 646-653. Retrieved from http://doi.apa.org/getdoi.cfm?doi=10.1037/0012- 1649.24.5.646.

[43] Valenzuela, M. J., Sachdev, P. S., Wen, W., Shnier, R., Brodaty, H., & Gillies, D. (2000). Dual voxel proton magnetic resonance spectroscopy in the healthy elderly: Subcortical-frontal axonal N-acetylaspartate levels are correlated with fluid cognitive abilities independent of structural brain changes. NeuroImage, 12(6), 747-756.
[44] Van der Elst, W., Hurks, P.P.M., Wassenberg, R., Meijs, C., & Jolles, J. (2011). Animal Verbal Fluency and Design Fluency in school-aged children: Effects of age, sex, and mean level of parental education, and regression-based normative data. Journal of Clinical and Experimental Neuropsychology, 33(9), 1005-1015. doi: 10.1080/
[45] 13803395.2011.589509.
[46] Yeates, K. O., Taylor, H. G., Wade, S. L., Drotar, D., Stancin, T., & Minich, N. (2002). A prospective study of short- and long-term neuropsychological outcomes after traumatic brain injury in children. Neuropsychology, 16(4), 514-523. doi:10.1037/0894-4105.16.4.514.

APPENDIX

ASSESSMENT OF LANGUAGE DEVELOPMENT-A MANIPAL MANUAL (ALD- MM)

Receptive Language Skills: 8.0 -10.0 years

63. Understands concepts (few more, estimating, compare and after)
    (Score 1: Any five correct responses)
    Suggested activity: Ask the child to point to the correct answer.
    a. Last year Mona's first standard class had 20 children. This year she has fewer children. How many children does she have in her class?
       18 children
       24 children
       20 children
    b. What comes next? 3, 6, 9, 12
    c. Raj and Rosa are of the same size. Raj can hold 8 pencils in his one hand. Rosa can hold more. About how many can Rose hold in one hand?
       4 pencils
       11 pencils
       22 pencils
    d. Lee and Dan collect Pins. Lee has about 50 pins. Dan has almost the same number of pins as Lee. About how many pins does Dan have?
       53 pins
       51 pins
       48 pins
    e. Compare and tell the correct answer that will fit here: 28 is _____24.
       < less than
       > more than
       = equals
    f. Manu was born in 2007. Will her 18th birthday be before or after 2023?
64. Follows multi-step directions
    (Score 1: Any five correct responses)
    Suggested activity: Use paper and pencil/pen.
    a. Draw a square and make five stars in it.
    b. Draw a circle on the right side of the paper and put a dot in the middle.
    c. Draw a line above a square and a smaller triangle below.
    d. Draw a circle in the middle of the paper and write three letters of the English alphabet in it.
    e. Draw two parallel lines on the left side of the paper and then cut them into equal halves.
    f. Write three numbers in the bottom left of the paper and one dot at the top right corner.
65. Under stands directional words in a 5*5 grid
    (Score 1: Any five correct responses)
    Suggested activity: Use Pic 23. Ask the child to track his finger along the grid.
    a. Start at the top right corner and go down two blocks.

©IJRASET: All Rights are Reserved

b. Start at the bottom right corner and go up to four squares diagonally.
c. Start on the bottom left and go right two squares.
d. Start in the centre and go up one square.
e. Start at the top up left corner and go down three squares.
f. Start at the centre square and go down diagonally.

66. Knows to sequence
(Score 1: correct order of occurrences)
Suggested activity: Write the items on a paper. Ask the child to read the sentences and arrange them in the right order to make sense.
a. He then put the letter inside an envelope
b. Rajiv's mom told him that he should write a letter thanking grandma
c. From there he mailed the letter
d. Yesterday, Rajiv received a gift from his grandma in the mail for his birthday.
e. Today he wrote a letter thanking her for his gift.
f. Next, he wrote the address and took it to the post office.

67. Knows synonyms
(Score 1: Any five correct responses)
Suggested activity: Write the items on a paper. Ask the child to look at the underlined word in each sentence and find a word from the list that means the same as the underlined word.

68. His clothes were muddy
a. Loose
b. Cheap
c. Baggy
d. Dirty

69. She was always smiling
a. Never
b. Rarely
c. Forever
d. sometimes

70. She watched as the sun came up
a. Shined
b. Heard
c. Felt
d. looked

71. She knew the hidden plan
a. Open
b. Known
c. Lost
d. secret

72. The brother yelled for his sister to come home
a. Cared
b. Called
c. Heard
d. Belled

73. Mom asked to split and share the candy between two children
a. Use

b. Eat
c. Divide
d. Taste

74. Executes multi-step actions
(Score 1: Any five correct responses)
Suggested activity
a. Cross your fingers, stand up, turn around in a circle and look at someone in the room.
b. Shake your head to indicate "No", count the chairs in the room, point to the corner of the room and wiggle your fingers.
c. Snap your fingers four times, pretend to put a shirt on, look at the floor and name something blue.
d. Say your name, pretend to wash your hands, tap on the table thrice and touch your nose.
e. Pretend to sneeze, walk to the door, count to five and wave with one hand.
f. Blink your eyes, pretend to take your watch off, name a shape and say "Look over there".

75. Knows to combine sentences
(Score 1: Any five correct responses)
Suggested activity: Write the choices on a paper. Ask the child to listen to both the sentences and combine them using the correct choice.
(but, for, though, and, while, which, who)
a. The boy gave his pen to his friend. He did not want to share it.
b. The Kangaroo is walking across. It is known for its pouch.
c. He is a writer. He wrote many books.
d. Raju is a bright boy. Raju is very lazy.
e. He saw the shop. He was going in the bus.
f. Ravi fell from the tree. He hurt himself.

76. Knows homophones
(score 1: Any five correct responses)
Suggested activity: Write the items and choices on a paper. Ask the child to point to the correct choice.
a. The auto driver was charging the woman very high _____
b. The lion hunted the whole day for its _____
c. The fat man had no other _____ to lose weight
d. The people of the city went in line to _____ their vote
e. The woodcutter lost the _____ to home
f. The mother asked her son to help her to _____ the carrots

77. Has decision making skills
(Score 1: Any five correct responses)
Suggested activity: Write the items and choices on a paper. Ask the child to use – I Can't, I don't know, I shouldn't, I didn't, and I don't understand.
a. Take the grapes kept in front of you and throw it all around
b. Before you get up, carry the chair up.
c. Make a square round around the box kept on the floor
d. Get the one left outside this room in the morning
e. Looks like you have prepared breakfast today for everyone
f. You should always carry that with you without fail

78. Knows idioms and phrases
(Score 1: Any three correct responses)
Suggested activity: Write the items and choices on a paper. Ask the child to use appropriate idioms and phrases with the options given.
(turn red; take home; by heart; black sheep; stared into space)

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

John was in VII standard. He was very lazy. Once his teacher asked him to learn a poem _____. He played all day and forgot what the teacher had asked him to do. The next day the teacher asked him to recite the poem. John was unable to speak. He _____ and his face began to _____. The teacher told him that he was a _____ in the class. The _____ message was that laziness does not help one.

(Correct responses corresponding to the blanks: by heart, stared into space, turn red, black sheep, take home)

Expressive Language Skills: 8.0 – 10.0 years

64. Able to compare and contrast
    (Score 1: Any five correct responses with at least two explanations each)
    Suggested activity: Ask the child to tell how these items are alike as well as different.
    a. Book and newspaper
    b. Butterfly and bird
    c. Knife and Scissors
    d. Well and water tank
    e. Laptop and TV
    f. Mirror and glass
65. Formulates questions
    (Score 1: Any five correct responses with a minimum of two questions each)
    Suggested activity:
    a. Bharati's mom told her that they would go to the bus stop to pick up grandma. Bharati wants to know the date and time. What should she ask her mom?
    b. Bhavani's dad told the family that he will take them on a trip. She wants to know more about the trip. What should she ask her dad?
    c. Our teacher is conducting a reading contest. An award will be given to the student who reads more variety of books in one month. What should the teacher ask at the end of the month?
    d. Your doctor told you that brushing your teeth every day is very important. You don't understand the reason and time for brushing. What question should you ask your doctor?
    e. Watching TV all the time is bad. But some programs are good to watch. You want to know about it. What will you ask?
    f. Birthday celebrations are planned in the same way every year. You want to have a change. What will you ask?
66. Expresses antonyms
    (Score 1: Any five correct responses)
    Suggested activity: Ask the child to look at the underlined word in each sentence and find another word from the list that means the opposite of the underlined word.
    a. There was an <u>intense</u> fire in the forest
       Mild
       Extreme
       Strong
       Great
    b. The bedroom was always <u>messy</u>
       Mixed
       Tidy
       Orderly
       Dirty
    c. The friends were <u>intimate</u> with each other
       Super
       Near
       Close
       Distant
    d. They had no <u>real</u> money to go shopping

Need
More
Fake
His

e. The shopkeeper was generous with children
Lavish
Mean
Liberal
Stingy

f. It is compulsory for the students to complete their homework
Required
Optional
Necessary
Possible

67. Expresses cause and effect
(Score 1: Any five correct responses)
Suggested activity:
a. Pavan forgot to put his bike inside and left on vacation. It rained for days and his bike was in the rain for weeks. What was the effect of the rain on the scooter?
b. The Sams lived outside the city by the river on a farm. They grew flowers and vegetables in their garden by the river. There was water scarcity. What is its effect?
c. Prem got back from school and decided to go out to play with his friends. He had fun playing for a long time. After he got back home, he was tired, so he ate dinner and went to bed early, thinking that he would get up early and do his homework. The next day he did not have enough time to do homework. How would he prevent the problem?
d. A group of friends planned a party. Each one contributed towards the expenses. The lunch bill was cheaper than the collected amount. What can be the next move?
e. Mina wants to go on a school trip. She has motion sickness, because of which she tends to vomit all through the journey. This is a nuisance for her as well as her friends. What could she do?
f. Sam had to reach for the show by 5 pm. He left home by 4:45 pm. There was no petrol in his bike. The venue was 5 kms from his place. He did not know the location. What could he have done?

68. Differentiates fact or opinion
(Score 1: Any five correct responses)
Suggested activity: Ask the child to tell if it is a fact or an opinion (E.g., Elephants are big, is a fact; my mom is beautiful, is an opinion).
a. Lemons are sour
b. All children like to play on the slide.
c. Babies are very cute
d. It was a busy day
e. The best way to study is to write everything down
f. The rainy season is better than summer

69. Able to predict
(Score 1: Any five correct responses)
Suggested activity: Ask the child to answer the questions with two possibilities
a. Akash saw lots of nails on the road in front of his house. He started to pick them up and saw a car turning on to his road. What might happen next?
b. Rashmi looked very pale in the morning and said she had a stomachache. At lunchtime, she started vomiting and the teacher called her mother. What might happen next?
c. The principal walked past the fourth-grade classroom and heard a lot of noise coming from the classroom. What might happen next?

d. The second-grade class was to go on a field trip to the museum in Bengaluru. The driver noticed steam coming from the engine. What might happen next?
e. Monika woke up by the thunder. It was raining heavily and she remembered that her books were close to the window which had been open. What might have happened?
f. Last night Ramesh and his sister were invited over to his friend's house to watch a movie. He got gum from his friend. As they walked home, his sister noticed that he was not chewing gum anymore. What might have happened to the gum?

70. Able to use derivatives
(Score 1: Any five correct responses)
Suggested activity: Fill the blanks using the right choices.
(Steal, charm, challenge, crowd, write, celebrate, devastate)
a. Revathi was a …… girl. (charming)
b. It was a ……. Street. (crowded)
c. Tagore was a …… writer. (celebrated)
d. The …….. Goods were exhibited in the police station. (stolen)
e. It is a well ……... document. (written)
f. Many people died in that …….. fire. (devastating)

71. Able to infer
(Score 1: Any five correct responses)
Suggested activity:
a. Fifteen people were shown around the shop by Raju since morning. Two of them wanted a test drive. What was Raju's job? How did you guess?
b. Johny was excited to have a new uniform and meet his friends after to months. What was the occasion? How did you guess?
c. Sam was trekking for two weeks. After his return, he was sad to see dying plants in his garden. What happened? How did you guess?
d. People in the front row were often standing, talking loudly, and laughing. Kitty was irritated. Where was Kitty? How did you guess?
e. My mother was busy cooking and my father was cleaning the house. They were looking at the clock often. What is the scenario? How did you guess?
f. There was a crowd on the road. The ambulance arrived. What happened? How did you guess?

72. Expresses figurative language
(Score 1: Any five correct responses)
Suggested activity: Ask the child to explain the proverbs in two or more sentences.
a. Many hands make the work light.
b. Jack of all trades and master of none
c. Action speaks louder than words
d. All that glitters is not gold.
e. Slow and steady wins the race
f. All work and no play makes Jack a dull boy

Picture 23

B	D	K	2	5
9	R	3	T	P
A	M	4	L	6
10	F	C	8	Q
H	J	7	V	Y

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue VIII Aug 2023- Available at www.ijraset.com

SCORING SHEET

Name: Date of birth: Date of Testing:

Receptive Language Skills				Expressive Language Skills		
Age	Item and Sub items	Item#	Score 0 or 1	Item and Sub items	Item#	Score 0 or 1
8.0-10.9 years	63a, 63b, 63c, 63d, 63e, 63f	63		64a, 64b, 64c, 64d, 64e, 64f	64	
	64a, 64b, 64c, 64d, 64e, 64f	64		65a, 65b, 65c, 65d, 65e, 65f	65	
	65a, 65b, 65c, 65d, 65e, 65f	65		66a, 66b, 66c, 66d, 66e, 66f	66	
	66a, 66b, 66c, 66d, 66e, 66f	66		67a, 67b, 67c, 67d, 67e, 67f	67	
	67a, 67b, 67c, 67d, 67e, 67f	67		68a, 68b, 68c, 68d, 68e, 68f	68	
	68a, 68b, 68c, 68d, 68e, 68f	68		69a, 69b, 69c, 69d, 69e, 69f	69	
	69a, 69b, 69c, 69d, 69e, 69f	69		70a, 70b, 70c, 70d, 70e, 70f	70	
	70a, 70b, 70c, 70d, 70e, 70f	70		71a, 71b, 71c, 71d, 71e, 71f	71	
	71a, 71b, 71c, 71d, 71e, 71f	71		72a, 72b, 72c, 72d, 72e, 72f	72	
Criterion 8(RLA), 7(ELA) Or more (Pass) Less than 8(RLA) 7(ELA) (FAIL)		Total correct/Raw Score	Pass/Fail		Total correct/Raw Score	Pass/Fail

Receptive Language Age:
Expressive Language Age:
Speech Sample/Notes/Clinical Observations:

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

Northwestern Bilingualism & Psycholinguistics Research Laboratory
Please cite Marian, Blumenfeld, & Kaushanskaya (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech Language and Hearing Research, 50* (4), 940-967.

Language Experience and Proficiency Questionnaire (LEAP-Q)

Last Name		First Name		Today's Date	
Age		Date of Birth		Male ☐	Female ☐

(1) Please list all the languages you know **in order of dominance**:

1	2	3	4	5

(2) Please list all the languages you know **in order of acquisition** (your native language first):

1	2	3	4	5

(3) Please list what percentage of the time you are *currently* and *on average* exposed to each language.
(*Your percentages should add up to 100%*):

List language here:					
List percentage here:					

(4) When choosing to read a text available in all your languages, in what percentage of cases would you choose to read it in each of your languages? Assume that the original was written in another language, which is unknown to you.
(Your percentages should add up to 100%):

List language here					
List percentage here:					

(5) When choosing a language to speak with a person who is equally fluent in all your languages, what percentage of time would you choose to speak each language? Please report percent of total time.
(*Your percentages should add up to 100%*):

List language here					
List percentage here:					

(6) Please name the cultures with which you identify. On a scale from zero to ten, please rate the extent to which you identify with each culture. (Examples of possible cultures include US-American, Chinese, Jewish-Orthodox, etc):

List cultures here					

(7) How many years of formal education do you have? _____ _____
Please check your highest education level (or the approximate US equivalent to a degree obtained in another country):

☐ Less than High School ☐ Some College ☐ Masters
☐ High School ☐ College ☐ Ph.D./M.D./J.D.
☐ Professional Training ☐ Some Graduate School ☐ Other:

(8) Date of immigration to the USA, if applicable ___ _____
If you have ever immigrated to another country, please provide name of country and date of immigration here. _____ _____

(9) Have you ever had a vision problem ☐, hearing impairment ☐, language disability ☐, or learning disability ☐ ? (Check all applicable). If yes, please explain (including any corrections):

_____ _____

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue VIII Aug 2023- Available at www.ijraset.com

Language:

This is my (please select from pull-down menu) language.

All questions below refer to your knowledge of .

(1) Age when you…:

began acquiring :	*became fluent* in :	*began reading* in :	*became fluent reading* in :

(2) Please list the number of years and months you spent in each language environment:

	Years	Months
A country where is spoken		
A family where is spoken		
A school and/or working environment where is spoken		

(3) On a scale from zero to ten, please select your *level of* ***proficiency*** in speaking, understanding, and reading from the scroll-down menus:

Speaking	(click here for scale	Understanding spoken language	(click here for scale)	Reading	(click here for scale

(4) On a scale from zero to ten, please select how much the following factors contributed to you learning :

Interacting with friends		Language tapes/self instruction	
Interacting with family		Watching TV	
Reading		Listening to the radio	

(5) Please rate to what extent you are currently exposed to in the following contexts:

Interacting with friends		Listening to radio/music	
Interacting with family		Reading	
Watching TV		Language-lab/self-instruction	

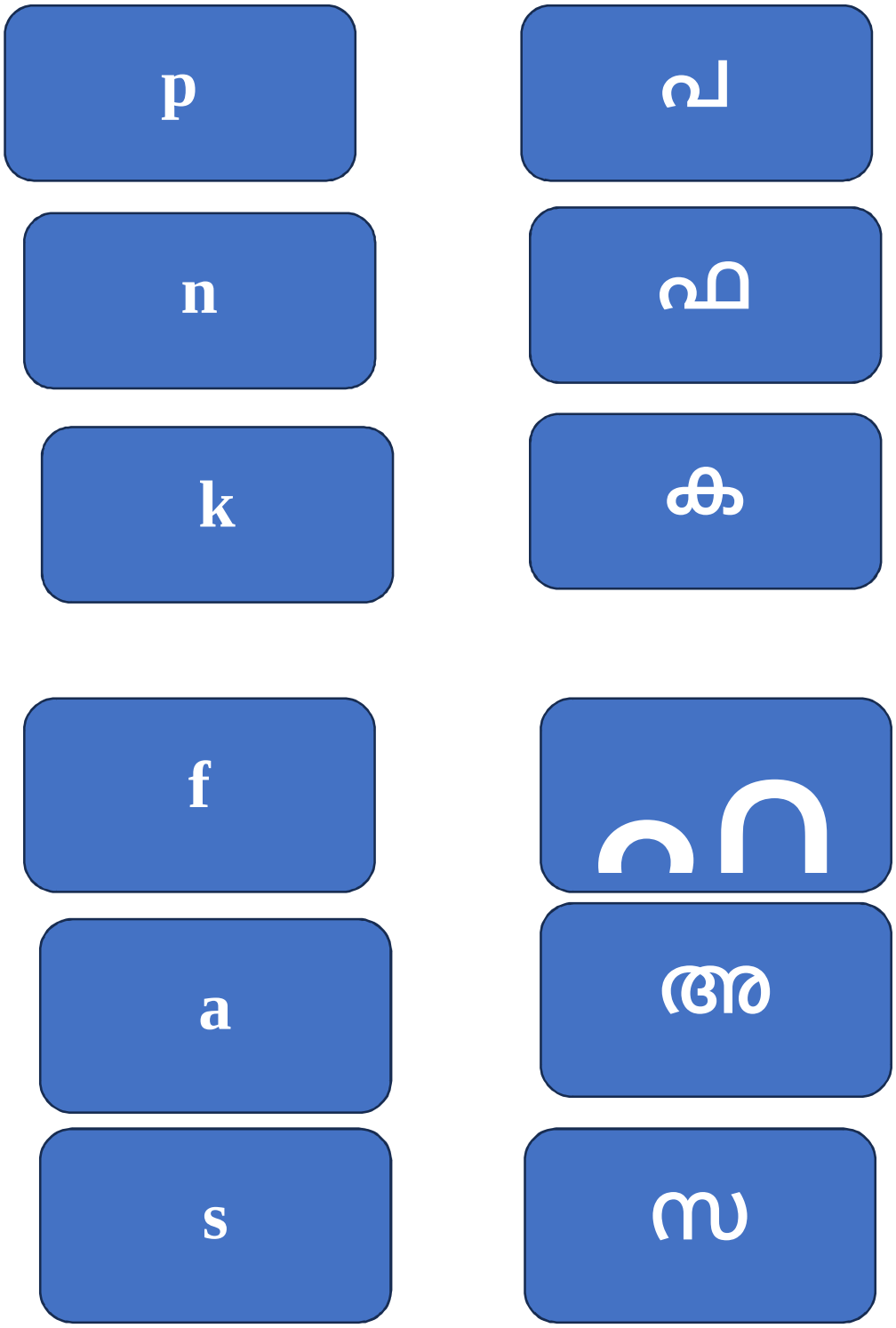
(6) In your perception, how much of a foreign accent do you have in ?

(7) Please rate how frequently others identify you as a non-native speaker based on your accent in :

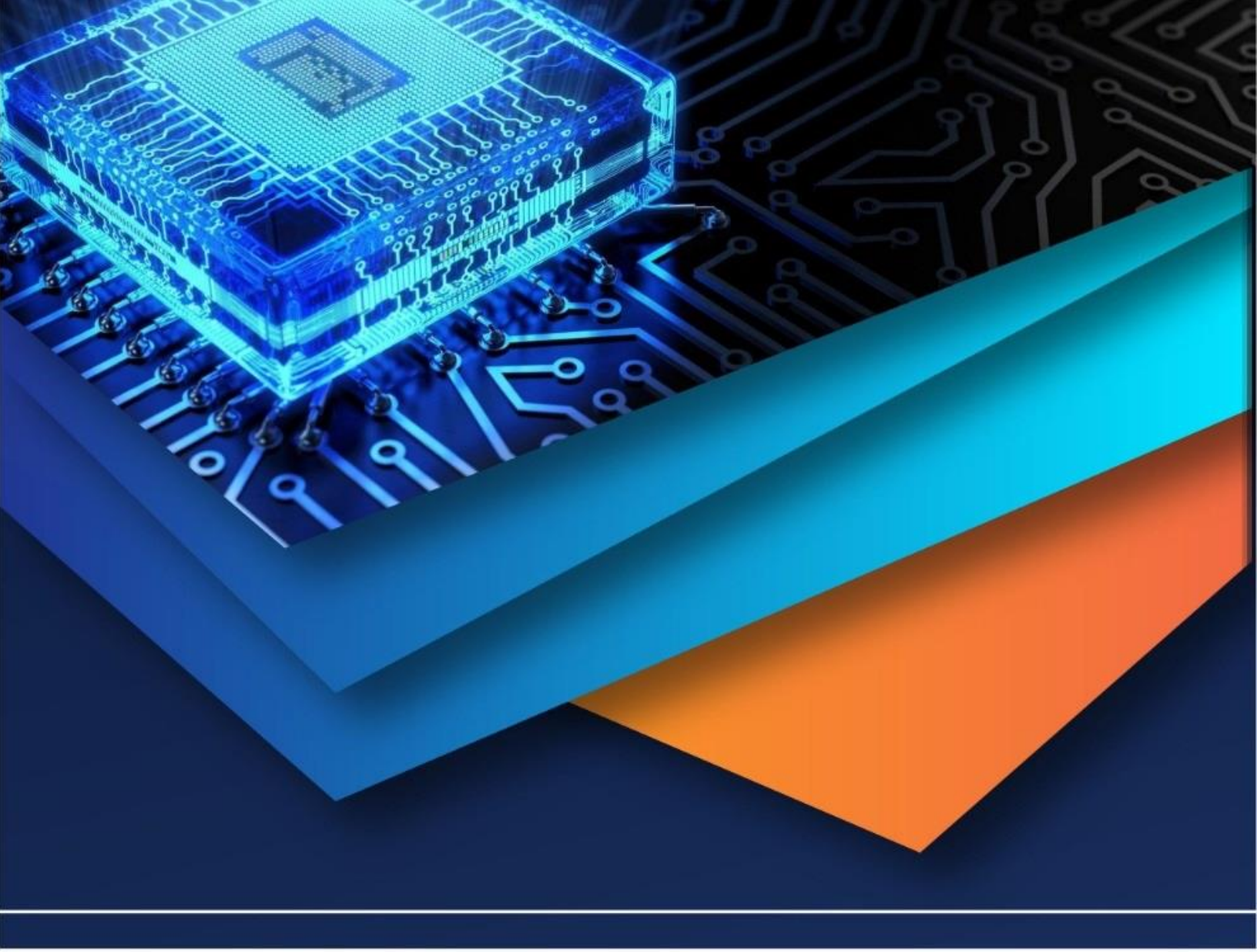
©IJRASET: All Rights are Reserved

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue VIII Aug 2023- Available at www.ijraset.com

STIMULUS USED



©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)