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1 **Grammatical structures in 3 to 6 year old Kannada Speaking English Language**
2 **Learners**

3
4 **Abstract:** *Language acquisition and development of grammar in preschool children is a*
5 *complex continuum. Research evidences suggest that language development in bilingual*
6 *children may be qualitatively different from that of monolingual children and the progression*
7 *may differ in the two languages. The study aimed to compare the development of*
8 *grammatical structures in Kannada and English languages in Kannada speaking English*
9 *language learners. The participants were evaluated for their knowledge of grammatical rules*
10 *in each of the languages using a sentence completion task. The results showed that the*
11 *linguistic abilities of children increased with age, thereby revealing a developmental*
12 *trend. The order of acquisition of grammatical structures was found to vary between Kannada*
13 *and English with better performance evidenced in Kannada language. These findings are*
14 *discussed with regard to the importance of assessing language abilities in both languages*
15 *known to bilingual children and the development of suitable tools for the same.*

16 **Key Words:** *Grammatical structures, preschool, Kannada, English*

17
18 Human communication through language provides meaningful arrangements of words
19 that represent ideas by using a combination of arbitrary symbols and rules (Owens, 2012).
20 “Language is the systematic and conventional use of sounds (or signs or written symbols) for
21 the purpose of communication or self-expression”(Crystal, 1996). It includes a combined
22 skill of reception and expression of sounds, vocabulary, sentences and whole text in speech
23 and writing. Language is a system of phonological, semantic and syntactic rules which can be
24 applied in an orderly manner for communicative purposes (Chomsky, 1969).

1 Language acquisition can be defined as a complex process in which humans learn to
2 comprehend and produce words to make sense of the world around them (Crain & Lillo-
3 Martin, 1999). Language acquisition takes place in different stages, starting from birth to
4 several years of life. Children develop language naturally with the environment playing an
5 important role in learning language and when exposed to people talking around them in
6 different situations (De Houwer, 1995). Language development involves growth in the areas of
7 oral language skills, print knowledge and phonological processing. An oral language skill
8 refers to the entity of words in a child's vocabulary and their ability to comprehend and
9 express the meaning (i.e., syntactic and narrative skills). Print knowledge encompasses
10 children's early comprehension of the forms and functions of written language (e.g., letters of
11 the alphabet, the sounds made by letters and directionality of print). Phonological processing
12 refers to the development of the sound structure of their native language (e.g., that words are
13 made up of smaller sounds like syllables or phonemes) and the ability to use the knowledge
14 of sound structure information during cognitive tasks.

15
16 Acquisition of language and its development is quite rapid in young children,
17 particularly preschoolers. Development of grammatical system starts from birth in a discrete
18 combinatorial system consisting of a finite number of discrete elements that allow children to
19 produce an infinite number of sentences (Pinker & Longuet-Higgins, 1994). Grammatical
20 markers primarily develop during the preschool years. An immense growth in the vocabulary
21 of preschool children is followed by the development of a complex syntactic structure that
22 helps them in conversational and narrative skills. Among the language components,
23 morphology and syntax play a major role in the acquisition of grammatical language.
24 Morphology refers to the rules of stringing morphemes in a language whereas syntax is the
25 study of the principles and processes by which sentences are constructed in a language

1 (Owens, 2012).Morphological and syntactical development refers to the ⁴ internalization of the
2 rules of language that governs the word structure,and the organization of words into
3 sentences in that particular language respectively.Syntactic development is considered as
4 most important feature of language, proceeding in a mostly uniform pattern in both the type
5 and timing of development (Shonkoff & Phillips, 2000).

6
7 During 3 years of age, the major development noticed in children is acquiring ²⁷ mastery
8 of grammar of their own language. During this period typically, child starts production of two
9 to three word affirmative and declarative sentences which lacks grammatical endings (plural
10 markers and past-tense markers) on noun and verb forms. Child starts ³ producing full length
11 sentences, questions and negated forms with most grammatical device in place by the age of
12 3 years. Development was also observed in the vocabulary, articulation of sounds, and
13 phonological awareness properties of their language. Between 3-4 years, complex,
14 multiclaue sentences begin to emerge in children(Turnbull & Justice, 2011). In general, it
15 was found ³ that language development is completed in the first four years of life, although,
16 morpho-syntactic development is essentially complete by the age of 4-5 years. Even after the
17 age of 5, children's ⁸ grammatical complexity of speech continues to develop, because ⁸ children
18 use the complex structures at their command more frequently. They more often produce
19 expanded noun phrases, adverbial clauses, subordinate clauses, and so on (Hoff,
20 2005;Turnbull & Justice, 2011).

21
22 The order of acquisition of the grammatical rules varies as the child develops and also
23 when the child acquires second language. Language acquisition in bilinguals is a process of
24 mastering two or more languages.Bilingualism is described as the knowledge and usage of
25 two different languages and an ability to make meaningful utterance in another language

1 (Harding, Edith, & Riley, 1986).⁷ Currently, researchers believe that there is a consistent
2 developmental sequence that children follow in acquiring a first language. Children who are
3 simultaneously acquiring two languages will have the same stages of development as that of
4²² monolingual speakers of those languages (McLaughlin, Blanchard, & Osanai, 1995). There
5 would be unequal progress in one language compared to the other.⁷ One language is majorly
6 salient from time to time, which can be due to²⁶ the input the child receives from the other
7 speakers, or less opportunity²⁰ to use one language compared to the other language
8 (McLaughlin, Blanchard, & Osanai, 1995). Children⁴ learning a second language that differ
9 considerably in its grammatical morphology from their native language may have difficulty
10⁴ in mastering the grammatical morphology of the second language (Bialystok & Miller, 1999;
11 Jia, Aaronson, & Wu, 2002). There are variations found in grammatical acquisition between
12 children's native and second language. Snow and Hoefnagel-Höhle (1978) studied
13 acquisition of morphological rules in 3-5 years old children who speak English and Dutch as
14 their second language and reported variations between the two languages. In English,
15 children start acquiring the language at 3 years of age whereas the same rules were achieved
16 at around 4-5 years of age in Dutch. Children were able to perform better and acquired the
17 grammatical rules earlier in their native language (English) compared to Dutch.

18
19 Linguistic abilities¹ play a significant role in the development of literacy in children.
20 Literacy is defined as a process which includes psychological and linguistic elements of
21 reading and writing which the child develops with the help of meaning (Heath, 1980). The
22 development of literacy is correspondent with the changes in the linguistic knowledge.
23 Research evidences support the¹¹ strong relationship between spoken language skills and
24 subsequent literacy development¹¹ (Bishop, & Adams, 1990; Catts, 1993; Silva, Williams, &
25 McGee, 1987; Stark & Tallal, 1988). Among preschoolers, the most apt language skills

1 responsible for literacy development are the skills related to print and oral language which
2 supports the emergent literacy (letter-sound correspondence, rhyming, using language to talk
3 about the language and contact with print) (Durgunoglu & Oney, 2000; Shanbal,
4 2010). Analogous to the disparity in language development in bilingual children, there are
5 differences in the literacy skills in these children. Researchers have found that the language
6 and literacy development were faster in monolingual compared to bilingual children
7 (Bialystok, Shenfield, & Codd, 2000; Durgunoglu & Oney, 2000).

8

9 In the Indian scenario, most children are found to be bilinguals, as they learn two
10 languages simultaneously (i.e. both the languages at home or one language at home and the
11 other at school). Kannada is a Dravidian language which is spoken by almost forty million
12 speakers in the southern Indian state of Karnataka, where it is considered as the official
13 language. Unlike English, Kannada has an extremely frequent and salient character of
14 morphology, i.e. argument structure. Kannada is a verb final inflectional language consisting
15 of an unmarked subject-object-verb (SOV) constituent order, and it has relatively free word
16 order (Agesthalingom & Sakthivel, 1973). In addition, noun phrases marked for case and
17 verbs in Kannada typically are in agreement with the subject in person, number, and gender
18 (Sridhar, 1990). In English, the order of Subject-Verb-Object (SVO) is preserved quite rigidly,
19 compared to the world's other languages. Children speaking English are exposed to many
20 variations in the basic SVO structure (Owens, 2005; Retherford, 2000). There are variations
21 seen in the development of the grammatical structure and language concepts of children
22 having English as their native language compared to those who have English as their second
23 language (Nag, 2007).

24

1 To summarize, language abilities of preschool children, particularly syntactic abilities,
2 ¹³ play an important role in later literacy development (Bishop, & Adams, 1990; Catts, 1993;
3 Stark & Tallal, 1988). ¹³ Research has shown that children know more about language and
4 literacy before they start formal schooling, which helps to develop their reading ability better
5 (Burns, Griffin, & Snow, 1998). Therefore, assessment of language skills during preschool
6 years is essential to identify children with language and literacy deficits. Further, given the
7 differences in the language development of bilingual children and the inherent characteristics
8 of languages, it is essential to evaluate the language abilities of preschool children in both the
9 languages they are exposed to. This may be especially true when the two languages of a
10 bilingual follow different phonological, morphological and writing systems, as is the case in
11 Kannada and English. Thus, the present study was taken up to assess language fundamentals
12 during the preschool years in Kannada-English bilingual children. Assessment in both
13 Kannada and English would provide insights into the language development patterns of these
14 children. Such insights may provide useful information in the development of tools for
15 assessment of language abilities in bilingual preschool children. ²⁵ The objective of the study
16 was to compare the development of grammatical structures in Kannada and English
17 languages in preschool children (3-6 years) who are ² native speakers of Kannada and studying
18 in schools with English as the medium of instruction.

19

20 **Methods**

21

22 **Participants:** A total of 120 typically developing children between 3 and 6 years with six
23 months interval (3-3;6, 3;6-4, 4-4;6, 4;6-5, 5-5;6, 5;6-6years) were selected from schools of
24 Mysore city. 20 participants (10 Male & 10 Female) were included in each age group. All
25 children ¹ were native speakers of Kannada and studying in schools with English as the

1 **medium of instruction** and were therefore referred as Kannada-speaking English Language
2 Learners.

3

4 **Stimuli:** Word Structure subsection of the test CELF PS-2 was used as the stimuli. CELF PS-2
5 (Wiig, Secord, & Semel, 2006) is generally used as an assessment tool to classify children as
6 typically developing or language impaired in research investigations (For example, Justice,
7 Bowles, Pence, & Gosse, 2010). It is a clinical tool to identify the nature of a language
8 disorder, assess ¹⁴ early classroom and literacy fundamentals and to evaluate the language and
9 communication in context. The word structure section of CELF PS-2 evaluates ¹⁹ child's
10 knowledge of grammatical rules in a sentence completion task. It ⁵ evaluates the child's ability
11 to apply word structure rules to mark inflections, derivations, and comparison, and select and
12 use appropriate pronouns to refer to people, objects, and possessive relationships. The
13 material in English was modified to suit the Indian context with relevant cultural and
14 linguistic changes in both the stimuli and pictures where necessary. The adapted stimuli were
15 translated to Kannada conforming to the structure of the language. This was then back-
16 translated to English by a Speech Language Pathologist who was also a native speaker of
17 Kannada language to ensure the quality and accuracy of the initial translation. Owing to
18 differences in the structure of the two languages, there were few instances in which back
19 translation did not result in the original stimulus. However, they were retained to ascertain
20 that the stimulus conformed to the structure of the language.

21

22 The pictures were subjected to a familiarity and ambiguity check. Five qualified Speech
23 Language Pathologists with at least 3 years of clinical experience were asked to rate both the
24 test stimuli and the corresponding picture stimuli ¹ on a 3 point rating scale for familiarity and
25 ambiguity respectively. The test stimuli rated ¹ as most familiar and the picture stimuli rated as

1 least ambiguous **were** included in the study. Suitable modifications were made in the other
2 stimuli to ensure that the required criteria were fulfilled.

3

4 **Procedure:** All the participants were tested individually in a quiet environment with adequate
5 lighting and ventilation in the school setup. **1** An informed consent was obtained from the
6 **caregivers of all** children who participated **1** in the study. The study methods adhered to the
7 **ethical guidelines** of the Institutional Review Board. The participants **2** were screened using
8 WHO Ten-Question Disability screening checklist(cited in Singhi, Kumar, Malhi, & Kumar,
9 **2007**) to rule out any speech, language **and** hearing deficits. The test was administered in both
10 Kannada and English language with a gap of one week.

11

12 The picture stimuli were presented through visual mode using a laptop and the verbal
13 stimuli was presented by the examiner. The participants were instructed to complete the
14 sentence using the target word. Initially, two practice trials were given and once the
15 participants were familiarized with the trial items, the test stimuli were presented. During the
16 test administration, one repetition of the stimuli was allowed in the event of a no response
17 from the participant or when the participants requested for repetition. The time taken for
18 completing the task in each language was approximately 10-15 minutes. The responses were
19 recorded on the score sheets for each of the two languages. A **21** correct response was scored as
20 **1** and incorrect response was given a score of 0. The maximum possible score was 24. The
21 raw scores were tabulated in SPSS (Version 17) and analyzed using appropriate statistical
22 tools.

23

24 **Results**

25

1 ⁶ The mean, standard deviation, median and interquartile range of raw scores obtained
 2 by participants on the Word Structure task in both languages (English, Kannada) with respect
 3 to age and gender are presented ² in Table 1.

4
 5 From Table 1, it can be observed that the mean scores for the Word Structure task was
 6 higher in Kannada compared to English language in each of the age groups and genders. The
 7 mean scores increased with increase in age and this was true in both languages. ¹ Shapiro-
 8 Wilk's test of normality revealed that the data was not normal in few age groups ($p < 0.05$).
 9 Hence, further statistical analysis was carried out using nonparametric tests. Gender wise
 10 comparison using Mann-Whitney test for each age group did not show any significant
 11 difference (¹ $p > 0.05$) between genders in any of the age groups. Therefore, the data was
 12 combined for genders for further analysis.

13
 14 ¹⁵ Table 1
 15 *Mean, Standard Deviation (SD), Median and Interquartile Range (IQR) of scores obtained*
 16 *for each age group and gender in Kannada and English*

Age (in years)	Gender	Kannada				English			
		⁶ Mean	SD	Median	IQR	Mean	SD	Median	IQR
3;0 – 3;6	Male	10.70	1.88	10.00	2.75	04.60	1.77	04.50	3.00
	Female	10.80	2.09	10.50	3.25	05.20	1.68	05.50	3.00
3;6 – 4;0	Male	13.80	2.09	14.00	2.25	07.90	1.44	08.00	2.50
	Female	13.80	1.93	13.50	3.25	08.20	1.75	08.00	3.25
4;0 – 4;6	Male	16.30	3.16	16.00	6.25	09.80	0.91	10.00	1.00
	Female	13.90	0.87	14.00	0.50	10.00	3.23	09.00	1.25
4;6 – 5;0	Male	17.50	2.59	18.00	4.50	10.10	1.91	09.00	2.50
	Female	17.80	2.65	17.50	4.50	09.70	1.63	10.00	1.50
5;0 – 5;6	Male	19.90	1.85	20.00	4.00	13.10	0.73	13.00	1.25

	Female	20.20	1.87	20.00	3.25	12.70	1.94	12.50	2.75
5;6 – 6;0	Male	21.70	0.94	22.00	1.25	13.70	1.82	14.00	2.25
	Female	21.80	1.22	22.00	2.25	14.00	1.24	14.00	2.00

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Comparison of age groups separately in the two languages using ²⁴ Kruskal-Wallis test revealed significant differences between age groups in both Kannada ($\chi^2(5)=91.18$, $p<0.05$) and English ($\chi^2(5)=92.20$, ¹ $p<0.05$). Pairwise comparisons using Mann-Whitney test showed significant differences ($p<0.05$) between all age groups except between 3;6-4;0 years and 4;0-4;6 years in Kannada. Similarly, in English, results of ²³ pairwise comparisons revealed significant differences ($p<0.05$) ¹ between all age groups except between 4;0-4;6 years and 4;6-5;0 years. Wilcoxon Signed Ranks test was done to compare scores between Kannada and English language within each age group. The results indicated significant differences ($p<0.001$) in scores between the two languages for all age groups.

Qualitatively, it was found that, the development of concepts like prepositions, progressive-ing, objective pronoun, possessive noun and pronoun, third person singular and subjective pronouns in Kannada started between the ages 3-4 years and were completely acquired by 6 years of age. The objective pronoun *avanu/avalu* was substituted by *ivanu/ivalu* by children between 3-4 years of age and was accurately achieved by 5 years. Acquisition of regular plurals, regular past tense, uncontractible/auxiliary copula and noun derivation started between 4-6 years of age. Other concepts like comparatives and superlatives began to emerge after 5;6 years of age. Similarly, in English, prepositions, progressive-ing, third person singular, contractile copula, and possessive noun, began emerging between 3-4 years of age. However, the other concepts were conceived only after 4 years of age and were not achieved completely even by the age of 6 years.

1 **Discussion**

2

3 The present study intended to compare the acquisition of grammatical structures in
4 Kannada-speaking English Language Learners using the Word Structure task from the CELF
5 PS-2. The results revealed that the performance on the Word Structure task involving various
6 grammatical structures increased with age, conforming to the well known fact that language
7 development occurs along a continuum. These findings draw support from studies of
8 language development in children which reported that the major developmental process in all
9 the language domains (semantic, morphology, phonology and syntactic rules) predominantly
10 occurs during the age of 4-6 years (Bhuvaneshwari, 2010; Chomsky, 1969, Crystal, 1996;
11 Prema, 1979).

12

13 Considering the acquisition of concepts specifically in each of the two languages
14 studied, it was found that children begin acquisition of grammatical structures at the age of 3-
15 4 years and it was completed by 4-6 years of age in Kannada language. On the other hand, in
16 English, the acquisition of concepts starts between the age of 3-5 years and is completely
17 achieved only after 6 years of age. Comprehension of the grammatical aspects starts at the
18 age of 3-4 years whereas, expression of the concepts starts by 4-5 years of age in both
19 languages. These findings are in accordance with earlier studies which reported that
20 comprehension of grammatical structures were better and earlier than the production
21 (Lenneberg, 1962; Lewis, 1951; 1963; McCarthy, 1954).

22

23 The results also indicated evident differences in the development of word structure
24 involving various grammatical concepts between Kannada and English languages across
25 participants of all age groups considered in the study. Few of the grammatical structures that

1 were achieved earlier in Kannada were realized later in English. E.g.: concepts like objective
2 pronoun and possessive pronoun were acquired at an earlier age in Kannada language
3 compared to acquisition of the same in English. Objective pronouns (eg;
4 ivanu/avanu/ivalu/ivaru) in Kannada were achieved during 4-5 years of age whereas, in
5 English, (he/she) it was achieved at 5-6 years of age. Comprehension of simple past and
6 future tense with specific gender markers begin at the age of 3 years in Kannada whereas in
7 English, it was around 4 years. This draws attention to the differences in the development of
8 grammatical structures between Kannada and English and is in consonance with similar
9 findings in literature (Bhuvaneshwari, 2010; Vijayalakshmi, 1981). However, variations in the
10 acquisition of concepts in the two languages could be due to the limited exposure and usage
11 of English, which is the second language of participants in this study, mostly acquired in
12 school rather than home environment. It may also be noted that few of the structures which
13 were present in English were absent in the grammar of Kannada language (e.g.: reflexive
14 pronoun, irregular past tense). The results also offer support to the earlier studies reporting
15 differences in the acquisition of grammatical morphology of the second language in
16 bilinguals compared to their native language (Bialystok, & Miller, 1999; Jia et al., 2002).

17

18 In conclusion, the present study revealed that the linguistic abilities of children
19 increased with age, conforming to the developmental progression of language skills.
20 Significant differences were also observed between the two languages with the order of
21 acquisition of grammatical structures varying between Kannada and English. Children were
22 able to perform better in Kannada than English language, which may be attributed to the
23 limited exposure to English language in the population under study. These findings
24 emphasize the importance of assessing linguistic skills in both languages that bilingual

1 children are exposed to. They also have an implication in the development of preschool

2 languageassessment tools in a bilingual context.

3

4 **Conflict of Interest:** None

5

6

1 Table 1

17

2 *Mean, Standard Deviation (SD), Median and Interquartile Range (IQR) of scores obtained for*
3 *each age group and gender in Kannada and English*

Age (in years)	Gender	Kannada				English			
		Mean	SD	Median	IQR	Mean	SD	Median	IQR
3;0 – 3;6	Male	10.70	1.88	10.00	2.75	04.60	1.77	04.50	3.00
	Female	10.80	2.09	10.50	3.25	05.20	1.68	05.50	3.00
3;6 – 4;0	Male	13.80	2.09	14.00	2.25	07.90	1.44	08.00	2.50
	Female	13.80	1.93	13.50	3.25	08.20	1.75	08.00	3.25
4;0 – 4;6	Male	16.30	3.16	16.00	6.25	09.80	0.91	10.00	1.00
	Female	13.90	0.87	14.00	0.50	10.00	3.23	09.00	1.25
4;6 – 5;0	Male	17.50	2.59	18.00	4.50	10.10	1.91	09.00	2.50
	Female	17.80	2.65	17.50	4.50	09.70	1.63	10.00	1.50
5;0 – 5;6	Male	19.90	1.85	20.00	4.00	13.10	0.73	13.00	1.25
	Female	20.20	1.87	20.00	3.25	12.70	1.94	12.50	2.75
5;6 – 6;0	Male	21.70	0.94	22.00	1.25	13.70	1.82	14.00	2.25
	Female	21.80	1.22	22.00	2.25	14.00	1.24	14.00	2.00

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