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Curriculum-based Language Skills in Hindi for Students between 12 to 15 Years of Age

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Abstract

The study focused to explore the curriculum based language skills in Hindi for students between 12 to 15 years of age. 60 Hindi speaking typically developing school going children (20 in each age group), studying in 6th to 8th grade attending normal Hindi medium private school in Pune and Delhi were selected on the basis of inclusion criteria. Statistical analysis using SPSS software version 16 was done. Mean standard deviation were obtained age and gender wise. One way ANOVA was done to compare the age groups separately for genders. The findings suggested that there was a statistically significant age related difference among both the genders on the performance of various language tasks. As age advanced the performance of students on all sub domains under morphosyntax and semantics increased. The skills like blending, antonym, homonym and figurative language showed increase in scores with age. But none of the skill achieved ceiling effect showing that these skills are still developing in 12 to 15 years of age. The present tool would be useful in identifying children with language disorders at particular linguistic levels and as a baseline for speech language therapy.

Keywords: Curriculum, Students, Hindi, Morphosyntax, Semantics, Performance

Introduction

The development of language observed through the preschool and school years shows the important and qualitative changes. These changes observed in the child's semantic competencies during the school years can almost certainly be attributed to their corresponding maturational changes in cognitive processing abilities (Emerson & Gekoski, 1976).

The school language or the curriculum based language is different from the language used by the children in their daily life. The children are rated on their performance on curricular development of language and not on their oral language skills solely. There are various linguistic and metalinguistic parameters which are not used on daily basis in oral language. Curriculum based language learning is more formal and is acquired at various linguistic levels across the curricular grades. To check this development difference between oral language and curriculum based language there is need to develop a curriculum based language test which will help to assess language development in school going children. Due to the lack of such standardized tests in Indian context, there is no sufficient data on adolescents to mark their linguistic growth across different linguistic sub domains.

A study done by Mossing and Courtney (2009) on typically developing children, ages 8-15 years showed that in all morphological categories younger children made more spelling errors than older children. Many researchers have described morphosyntactic development in stages. The best known of these is that of Brown (1973). He found that chronological age is not a good predictor of language development. In secondary school years, vocabulary growth is seen. They understand the concept of double meanings as well as subject words (Hartshorn, 2011).

In 2005, Patel conducted a study to find out students failure in their native language Gujarati Subject. 10th standard students were examined. After analysis of answer books they found that, students found the grammar questions as the most difficult questions. Easy points scored by the students include joint and disjoint, compound and group of words.

Karbhari-Adhyaru and Vasanta (2004) found that 6th to 8th grade normal hearing students' scores on morphological knowledge task included case markers and tense markers increase steadily from grade V to VIII but the scores not reached 100% so they concluded that the development for case markers and tense markers was still occurring and was not completed by grade VIII.

Suchitra and Karanth (1990) collected normative data on 150 school going children from Grade I to Grade V (6+ years to 10+ years) for the Linguistic Profile Test (LPT). On semantic Language in India www.languageinindia.com ISSN 1930-2940 15:8 August 2015

discrimination task the maximum scores were attained even at the lowest age group studied i.e., 6+ years. The performance on Homonyms, Synonymy, Antonymy, Semantic similarity and semantic contiguity was poor and remains low throughout across the age groups. Thus the findings in the semantic section showed that maximum scores were not obtained even by the oldest age group studied (i.e., 10+ years).

Karuppali and Bhat (2012) reviewed the development of idiomatic understanding during preadolescent and adolescent years. They obtained significant correlations between comprehension of figurative language and academic attainment, thus making figurative language a good indicative marker for the achievement of success in school.

Gender differences have been found in several others domains of language during the school years. For example, boys use more common language than girls (Cheshire, 1982). This attention to language itself appears to carry over to achievements in literacy. On average girls scored higher than boys in measures of reading, writing, and spelling, and these differences persist through high school (Allred, 1990; Hogrebe, Nest, & Newman, 1985; Swann, 1992). It is important to recognize that these gender differences in performance may be due in part to gender differences in attitudes toward literacy.

Linver, Davis-Kean & Eccles (2002) studied the influence of gender difference on the value and interest in math relates to academic achievement over time. Total 1821 adolescents were taken up from grade 6th to 12th. Measures included school grades, adolescents' interest in math, and score on a standardized math test. Result showed gender difference in math achievement task from grade 6th to grade 12th in regular school. Females who had more interest in math performed better than males in all grades.

The review indicates that there are several research carried out related to language development in children. There have been various attempts in both Western & Indian scenario to study language skills in students. In Indian context very few studies have been done to find curriculum based language development in 12 to 15 years age group. The present investigation

aimed to find the age difference in the pattern of morphosyntax and semantics development for typically developing Hindi speaking children.

Method

Participants

The total participants in present study were 60 Hindi speaking typically developing school going children (20 in each age group), studying in 6th to 8th grade attending normal Hindi medium private school in Pune and Delhi. The age range of the participants was from 12 to 15 years. All the participants were divided into three age groups and each group consisting of 10 males and 10 females. Consent was taken from Principal/ HOD/ Parents of the children/caregivers. Participants passing the inclusion criteria were only included in the present study.

Material

The review of existing Indian and Western language tools was done. The teachers teaching the age groups 12- 15 years in schools, linguists were also consulted and their suggestions have been incorporated. Two domains were selected which were morphosyntax and semantics. These domains were further divided into 8 subdomains. After reviewing literature it was seen that skills like prefix, suffix, prepositions, interjections, conjunctions and correction of incorrect sentences were achieved prior to 12 years of age and hence these skills were not chosen for the present study. The items were taken from Hindi grammar school books grade 6th to 8th of CBSE Board. Each subdomain divided into equal receptive and expressive items.

Administration

The data was collected during the school hours in quite, empty classroom. The children were made to sit comfortably. Maximum two children were taken at a time. Demographic data and brief history was collected from the children. Informal psychological assessment was done through draw a man test (Phatak, 1987) which was checked by the psychologist in the department. Visual acuity was checked by Snellen's Chart. To check the hearing, audacity generated tones were administered on 4 frequencies (500 Hz, 1 KHz, 2 KHz, and 4 KHz) at 40 dBSPL. Clinician read instructions from the test material and gave separate score sheet to each

child and asked to follow the instructions after the clinician. Instructions were properly explained with examples and repeated on the demand of a child in case of any ambiguity. Answers were taken verbally or in written form depending upon the task. Total score was calculated for each subsection.

Pilot Study

Pilot study was performed in which 16 participants (6 each from 12-13 years and 13-14 years; 4 from 14-15 years) involved. The language tool developed in the present study was administered on each individual; the total scores of each participant were calculated. The pilot study was done to reduce ambiguity and to increase familiarity.

Scoring

The test was evaluated and raw scores were calculated by clinician. Scoring for each item was in 0 for no answer/incorrect answer, 1 for partially correct answer, and 2 for correct answer. Raw scores for each subsection were found out separately. For domain 1 raw score was 48 and for domain 2 raw score was 64. The total score across all the domains was 112.

Statistical Analysis

Inter item correlation was carried out. Score on the finally developed tool was obtained from all the participants. The data was tabulated and statistical analysis using SPSS software version 16 was done. Mean standard deviation were obtained age and gender wise. One way ANOVA was done to compare the age groups separately for genders. The results discussed appropriately in the following chapter.

Results and Discussion

Inter item correlation was performed after collecting whole data. Items which had high correlation with total score were selected. Items with ambiguity, low familiarity and having low correlation with total were deleted. Cronbach's alpha coefficient was found to be (r=0.96) suggests a good internal consistency and reliability between each items with total. Final tool consisted of 102 items.

The descriptive statistics of each subdomain is shown along with ANOVA and post hoc results sequentially.

Domain I: Morphosyntax

I.1. Blending task

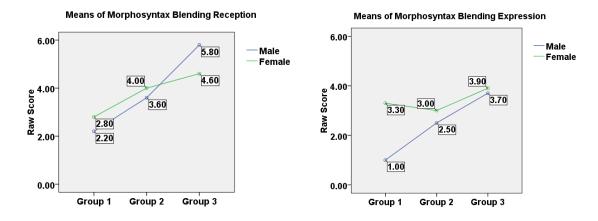


Figure 1: Shows mean of blending task (reception)

Figure 2: Shows mean of blending task (expression)

As shown in figure 1, the overall graph is showing rise pattern. For blending task the scores raised linearly.

As shown in figure 2, Females got higher scores than males and overall graph is showing rising pattern. In both the genders scores inclined linearly as the age increased.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The results showed significant age difference in males for both reception $\{F(2) = 3.506, (p < 0.05)\}$ and expression $\{F(2) = 3.783, (p < 0.05)\}$. In females the difference in mean scores was not statistically significant for both reception and expression.

Table 3: Results of Tukey post hoc across age groups for blending task reception and expression in males.

Blending task	Males	Group 1	Group 2	Group 3
	Group 1			
	Group 2	.570		
Reception	Group 3	.036*	.261	
	Group 1			
	Group 2	.295		
Expression	Group 3	.028*	.452	

^{**} Significance at 0.01 level.

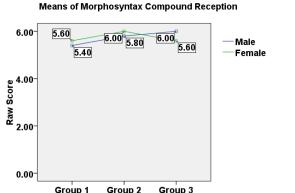
Table 3 shows the post hoc results were significantly different between group 1 and 3 only among males as there was steep rise in the scores obtained by the participants in group 3.

In overall blending task, females performed better than males. The mean scores for reception and expression increased with age. However the linear increment in mean score wasn't equal across genders.

Students in the lower age groups (i.e., 6th and 7th standards) made more errors as compared to those of students in the higher age group (i.e., 8th standard). The present study supports the finding given by Mossing and Courtney (2009) where younger children made more errors than older children in all morphological categories.

^{*}Significance at 0.05 level

I.2: Compound Task



Means of Morphosyntax Compound Expression

6.00

Male
Female

2.00

1.80

1.20

Group 1 Group 2 Group 3

Figure 3: Shows mean of compound task (reception)

Figure 4: Shows mean of compound task (expression)

As shown in figure 3, for compound reception task the scores obtained by all the age groups were almost equal.

As shown in figure 4, in compound expression task variable mean scores were obtained in females across the age groups, whereas in males a linear growth in mean scores was seen with increasing age.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The result showed no significant group difference in males for reception but the difference was significant for expression $\{F(2) = 4.481, (p < 0.05)\}$. Similarly in females the difference in mean scores was not statistically significant for reception but showed significant age difference for expression $\{F(2) = 5.061, (p < 0.05)\}$.

Table 4: Results of Tukey post hoc across age groups for compound expression task in males.

Compound task	Males	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.065		
	Group 3	.026*	.909	

Table 5: Results of Tukey post-hoc across age groups for compound expression task in females.

Compound task	Females	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.018*		
	Group 3	.923	.043*	

^{**} Significance at 0.01 level.

Table 4 shows that post-hoc results were significantly different between group 1 and 3 only among males. This can be attributed as males performed better at 14 years (group 3) of age than compared to the lower age groups (group 1 and 2) students.

Table 5 shows that the post-hoc results were significantly different between groups 1 and 2, groups 2 and 3.

On comparison with the other subdomains and compound reception task, it was seen that students across all age groups performed better and got equally higher scores on compound reception task. This finding suggest that students start understanding compounds before the age of 12 years and that's why there is no significant difference seen in 12 to 15 years age range on reception task. The result on compound is supported by Clark and Berman (1987) on 3 to 9 years aged children. They found that comprehension was better than production of novel compounds in Hebrew.

^{*}Significance at 0.05 level

I.3: Case Markers Task

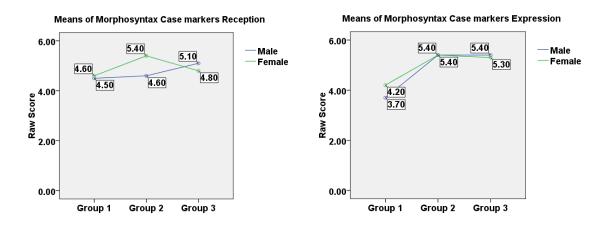


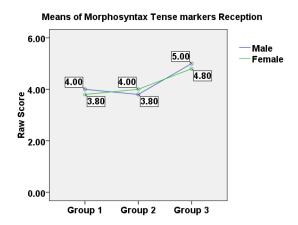
Figure 5: Shows mean of case markers task (reception)

Figure 6: Shows mean of case markers task (expression)

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The result showed no significant age difference in males and females for both reception and expression task.

Case markers reception mean scores are almost equal for all age groups showing that understanding level for case markers is same for 6th standard students as well as for 8th standard students. While in case markers expression task the maximum scores were obtained by group 2 and 3. However none of the age groups achieved 100% scores on both reception and expression task showing that case markers are still developing in 12 to 15 years of age. This finding is supported by a study done by Karbhari-Adhyaru and Vasanta (2004) that the scores obtained for case markers increase steadily from grade V to VIII but the scores did not reach 100% so they concluded that the development for case markers was not completed by grade VIII.

I.4: Tense Markers Task



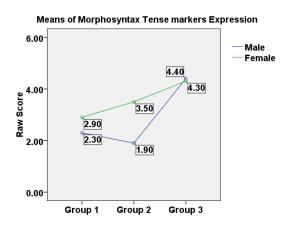


Figure 7: Shows mean of tense markers task (reception)

Figure 8: Shows mean of tense markers task (expression)

As shown in figure 7, the mean scores for both gender were higher for group 3 as compared to other age groups. Overall graph is showing rise and fall pattern.

As shown in figure 8, the graph shows that females performed better on tense markers expression task. The mean scores for both gender were higher for group 3 as compared to other age groups. Overall graph is showing rise and fall pattern.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The result showed no significant age difference in males for reception but showed significant age difference for expression $\{F(2) = 4.534, (p < 0.05)\}$. In females the difference was not statistically significant for both reception and expression.

Table 6: Results of Tukey post-hoc across age groups for tense marker expression task in males.

Tense Markers	Males	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.895		
	Group 3	.065	.024*	

^{**} Significance at 0.01 level.

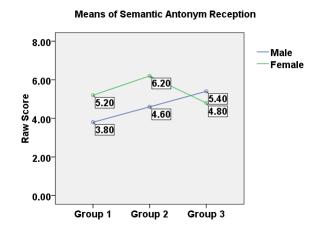
Table 6 shows that the post-hoc results were significantly different between group 2 and 3 only among males as there was steep rise in the scores obtained by the participants in the group 3 (8th standard).

Suchitra and Karanth (1990) found that the grammatical sensitivity for tense markers was least as compared to other grammatical categories within the age range of 6 to 10+ years. However in the present study maximum mean scores were obtained by group 3, i.e., 8th standard (14 years) students. This can be because the tense markers are more focused topic in the curriculum of 8th standard students.

^{*}Significance at 0.05 level

Domain II: Semantics

II.1: Antonym Task



Means of Semantic Antonym Expression 8.00 Male Female 6.00 6.20 6.00 9 0 4.00 3.80 4.60 3.80 3.60 2.00 0.00 Group 1 Group 2 Group 3

Figure 9: Shows mean of antonym task (reception)

Figure 10: Shows mean of antonym task (expression)

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The results showed no significant age difference in males for reception but showed significant age difference for expression $\{F(2) = 4.200, (p < 0.05)\}$. In females the difference was not statistically significant for both reception and expression.

Table 7: Results of Tukey post hoc across age groups for antonym expression task in males.

Antonym task	Males	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.974		
	Group 3	.037*	.060	

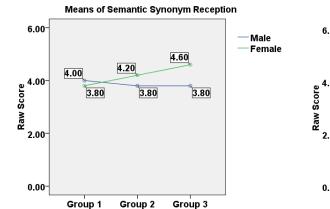
^{**} Significance at 0.01 level.

^{*}Significance at 0.05 level

Table 7 shows that the post hoc results were significantly different between groups 1 and 3 among males. This indicates that the higher group performed better than lower age groups and scores inclined linearly as age increased.

The scores are showing improvement but they are not fully achieved so we can say that antonym is still developing curriculum wise in school age children of 12 to 15 years.

II.2: Synonym Task



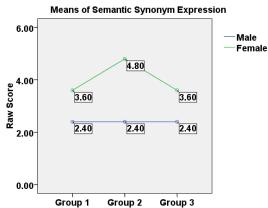


Figure 11: Shows mean of synonym task (reception)

Figure 12: Shows mean of synonym task (expression)

As shown in figure 11, the mean scores in males are almost same for all age groups. Graph is showing flat pattern. In females mean scores are inclined with increase in age showing rising pattern of graph.

As shown in figure 12, the mean scores in males are same for all age groups showing flat pattern of graph. In females graph is showing rising falling pattern due to variability in the mean scores.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The results showed no significant age difference in males and females for both reception and expression.

II.3: Homonym Task

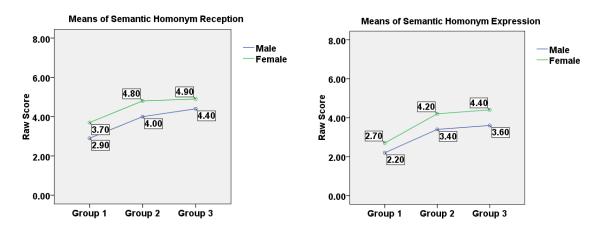


Figure 13: Shows mean of homonym task (reception)

Figure 14: Shows mean of homonym task (expression)

As shown in figure 13, both gender showed increase in mean scores as age increased, however female performed better than males. Overall graph is showing rising pattern.

As shown in figure 14, the mean scores for homonym task (expression) inclined linearly as the age increased in both genders. Overall graph is showing rising pattern.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The results showed no significant age difference in males for reception but the difference was significant for expression $\{F(2) = 4.943, (p < 0.05)\}$. In females the difference in mean scores was not statistically significant for both reception and expression.

Table 8: Results of Tukey post-hoc across age groups for homonym expression task in males.

Homonym task	Males	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.526		
	Group 3	.012*	.130	

^{**} Significance at 0.01 level.

Table 8, showed the post-hoc results were significantly different between group 1 and 3 only among males. This showing that group 3 (8th standard) students performed better on homonym expression task than other age group students.

Though mean scores are increasing with age but in 12 to 15 years of age range homonyms are not fully developed as none of the age group scored 100%. The probable reason could be increasing size of vocabulary. In a similar study done by Suchitra and Karanth (1990) it was seen that maximum scores were not obtained even by the oldest age group studied (i.e., 10+ years) on homonym, synonym, antonym and semantic similarity.

II.4: Figurative Task

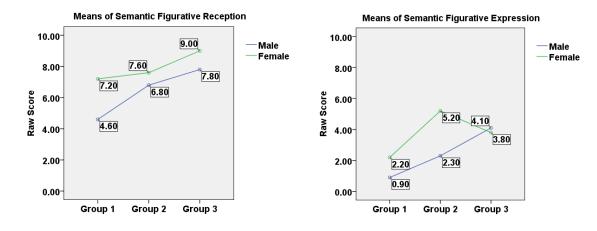


Figure 15: Shows mean of figurative

task (reception)

Figure 16: Shows mean of figurative

task (expression)

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^{*}Significance at 0.05 level.

As shown in figure 15, in both the genders scores inclined linearly as the age increased. Female performed better than males.

As shown in figure 16, the mean scores for figurative task (expression) raised linearly except in females there was downfall in mean scores after group 2. Overall graph showed variable pattern.

To see whether the difference in mean scores was significant across age one way ANOVA was carried out. The results showed no significant age difference in males for reception but showed significant age difference for expression $\{F(2) = 6.322, (p < 0.01)\}$. Similarly in females the difference in mean scores was not statistically significant for reception but showed significant age difference for expression $\{F(2) = 3.880, (p < 0.05)\}$.

Table 9: Results of Tukey post-hoc across age groups for figurative expression task in males.

Figurative task	Males	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.284		
	Group 3	.004**	.133	

^{**} Significance at 0.01 level.

Table 10: Results of Tukey post hoc across age groups for figurative expression task in females.

Figurative task	Females	Group 1	Group 2	Group 3
	Group 1			
Expression	Group 2	.025*		
	Group 3	.314	.408	

^{**} Significance at 0.01 level.

^{*}Significance at 0.05 level

^{*}Significance at 0.05 level

Table 9 shows that the post hoc results were significantly different between groups 1 and 3 in males.

Table 10 shows that the post-hoc results were significantly different between groups 1 and 2 only in females.

On figurative language task, the reception scores were better than expression which shows that students start comprehending figurative language during 12 to 15 years of age range. The current finding of better scores in comprehension of figurative language supports the study done by Karuppali and Bhat (2013). They found predominant figurative interpretations between the 12 to 14 years and also observed developmental trend in the comprehension of idiomatic phrases.

Summary and Conclusion

Curriculum based language learning is more formal and is acquired at various linguistic levels across the curricular grades. There are considerable differences in the forms used in oral language and the forms learnt in curricular language. Hence there was need to check this development difference between oral language and curriculum based language and there was need to develop a curriculum based language test which will help to assess language development in school going children. Due to the lack of such standardized tests in Indian context, there is no sufficient data on adolescents to mark their linguistic growth across different linguistic sub domains. Hence, the present study was planned with the aim to explore the curriculum based language skills in Hindi for students between 12 to 15 years of age. Tool to check the curriculum based language was developed in this study. Total 60 participants were included in the present study within the age range of 12-15 years (30 M & 30 F). Scores obtained by each child was statistically analyzed. Mean standard deviation were obtained age and gender wise. One way ANOVA was done to compare the age groups separately for genders. Among males the significant difference was present at Blending Reception, Blending Expression, Compound Expression, Tense Expression, Antonym Expression, Homonym Expression, and Figurative Expression.

In females the significant difference was present at Compound Expression and Figurative Expression. Though there was increase in mean scores with the increase in age, but none of the skill achieved ceiling effect showing that skills like blending, antonym, homonym and figurative language were still developing in 12 to 15 years of age. Better reception scores on compound, case markers showed that these skills are already achieved before the age of 12 years.

Standardization & validation of the present tool can be done on larger population which will be useful in highlighting the language development in secondary school years. This study has implications on early identification and remediation for children who are at risk for academic failure. The study has an important impact in Indian context since the materials available in assessing curriculum based language are very limited. This can also be used as a measure of child's progress following intervention. Validation of this tool can be done on clinical population like SLI, dyslexia, LLD, Hearing Impairment, Delayed in Speech and Language, children with misarticulation.

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