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Research Paper

Development of Pragmatics in Indian Children: A Novel Hindi Video Based Task

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ABSTRACT

Language for communicating in a particular context is denoted as Pragmatics, in typical population pragmatics improve with age. A variety of measures have been developed in order to assess these skills however there is a need for a Hindi task to evaluate the progressing comprehension of pragmatics in north Indian children. This study is an attempt to construct a Hindi pragmatics video-based task (HPVT). An experimental design was utilized in which impact of change in age is studied on pragmatics. The study encompasses creation of novel videos, standardization, administration of task and formulation of a comprehensive checklist for systematic evaluation. The study also explores the relationship between pragmatics and the theory of mind (ToM). **Method:** In order to construct the task scripts were shortlisted based on prior research and children were selected to act in videos. Each video was followed by two memory questions and one target question to map pragmatics development of 5- to 10-year-old children. The performance was scored using a checklist, ToM was assessed using first order false belief story narration with pictures. Parents rated these children on Pragmatic Abilities Questionnaire by Jafari et al. (2019) for establishing concurrent validity and content validity of HPVT. Face validity and inter-rater reliability was stablished using subject matter experts. **Result:** The performance of children in HPVT demonstrated an upward trajectory with age using linear regression b=.80, t (50) =11.11, p <.001. A significant equation was found F(1, 49) = 123.468, p< .000, with an R square of .636. Impactful result demonstrates positive relationship in measured Pragmatics and ToM. The standardization of the task was stablished. **Conclusions:** The HPVT task has some great properties and is unique however it took lengthy amount of time to administer and the questions need to be edited for accurately measuring pragmatics. The task can be used in the educational practices and interventions aimed at enhancing pragmatic language skills in those with Social Pragmatic Disorder (SPD).

Keywords: *Pragmatic Understanding, Child Development, Experimental Approach, Video-Based Tools, Standardization, Subject Matter Expert Ratings*

Pragmatics is the art of tailoring language expression to effectively convey meaning based on the social and situational demands of communication. In order to participate and adequately contribute in a social exchange, it becomes essential to adhere to pragmatic rules (Mctear and Conti Ramsden, 1991).

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Adjusting speech in a way to tailor utterances according to the communicative needs of interlocutors and the situation, taking your role in communication at the right time, displaying correct emotions and feelings in a conversation, staying on topic come under study of Pragmatics (Horton, W. S. & Gerrig, R. J. 2002)

Pragmatic skills are dynamic they differ greatly in how each and every individual uses them from the method sender chooses for delivering the message across to how they interpret the response coming from the receiver there are various ways. One's competence at communicating with his or her people is dictated by finely developed pragmatics skill (Adams, Lloyd, Aldred & Baxendale, 2006). Ambiguous messages result into numerous spaces in knowledge in order to fill which listener should be mindful of the context. (Mey, 2001; Huang, Y, Levinson and Morris, 2017). As we understand that the meaning of the expression changes greatly based on the context hence just on the basis of what are the words in the sentence, what are there meanings we cannot comprehend the exact meaning of the speaker and what are his or her intentions. Based on who is the receiver, the speaker changes his or her spatial, temporal and functional aspects of language.

Inculcation of accurate linguistic, social and cognitive knowledge in speech gives rise to communicative competence which is an indication of developed pragmatics skill (Leinonen, Ryder, Ellis, & Hammond, 2003). Social pragmatic skills include a range of verbal and nonverbal responses (Phelps-Teraski & Phelps-Gunn, 1992) It involves all the aspects that are utilized in human communication in accordance to the situation in which the conversation is taking place. Verbal language such as initiating and maintaining a conversation, turn-taking, semantic, syntactic cohesion and engaging peers in parallel play (Timler, Olswang, & Coggins, 2005). They involve macro pragmatics like speech acts, implicatures and micro pragmatics like non-verbal language, paralinguistics and all figurative languages. There is huge impact of gender on micro pragmatics like gaze pattern. Speakers race and their gender play a key role at the frequency with which individual gazes towards the face of his or her conversational partner (Kendon 1967, Lafrance and Mayo 1976). Gender plays just as important a role as individuals race in their behaviour pattern of how often they keep looking at the other of opposite sex. Women are reported to look less towards their conversational partner face while speaking as compared to the male counterparts (Marcelle, 1976). Other verbal strategies use of which we make in linguistics like apologies, acknowledgements, acts of politeness. Pragmatics is involved in rapport formation for which we need to display proper friendliness, not impose ourselves and draw correct inferences to ultimately respond correctly to the other. There are certain rules and regulations that one needs to be aware of in order to excel in conversational exchange, be an adequate contributor in communicative social participation and strategically use language to one's own benefit (Prutting and Kirchner, 1987; Mctear and Conti Ramsden 1991; Leionen, 2000; Brown, 2005). In 1975 theorist Grice stablished certain pragmatics rules like quantity, quality, relevance and manner of speech to be mindful of in speech.

Influences on Pragmatics

Pragmatics is significantly influenced by a multitude of idiographic factors. The speaker's temperament, past experiences, family dynamics, cultural background and demographic elements such as gender, race, linguistic diversity, socioeconomic status, and psychosocial adjustment contribute to the complexity of pragmatic development. Understanding pragmatics requires consideration of these diverse and interconnected factors, highlighting the intricate interplay between different influences on effective communication. This is also one reason why people living in a particular geographical area inculcate several similarities

in their social communication skills as they attend childcare in same area (Eva and Chambers, 1995). We cannot separate the aspect of culture from the topic of pragmatics. Based on the culture that a person belongs to pragmatics are specifically selected, their utility would only be accurate if the characteristics of that particular culture are kept in mind. For all of these reasons we understand that it is not possible to construct the so-called culture-free pragmatics task, we need culture-fair tasks to assess pragmatics.

Interplay Pragmatics, Theory of Mind (ToM)

Even though holding a conversation at the face level might seems like a very simple act however the human cognition has to work in its full glory and all the dynamic ways to be able to achieve this activity. The development of language is primarily a cognitive process which is turn contribute significantly for establishment of diverse pragmatic abilities.

ToM is a fascinating aspect of cognition that involves our ability to infer the mental states of others, allowing us to interpret and predict their knowledge, intentions, beliefs, emotions, and desires (Baron-Cohen, 1989). Research indicates that ToM development begins in preschool, progressing steadily through childhood. Milestones, such as 6-year-olds passing second-order ToM tasks, highlight the complexity of these cognitive processes. The intersection of pragmatics and ToM unveils a crucial link between understanding speaker intentions and the broader social cognitive ability to grasp the mental states of others, with ToM serving as a predictor of social competence. While a link between pragmatic skills and ToM is recognized, comprehensive studies are lacking. Carotenuto et al. (2018) reported a relationship, but their study focused on a limited subset of ToM concepts. Future research should explore this relationship more thoroughly, employing established ToM tests.

Developmental Milestones

Preschoolers achieve an early pragmatic milestone through narrative creation by the time they enter preschool, developing the ability to role-play and modify their language based on the listener's age, as noted by Preece (1987) and Guralnick MJ (1989), respectively. The accepted method for assessing their pragmatic skills involves checklists, observing their interactions in play with friends and family, offering valuable insights into their social communication abilities. Pragmatic language development in children undergoes significant milestones from the age of 3 to 11. At 3 years old, children may lack long communicative interactions but show improvement in problem-solving using language. By age 4, they exhibit the ability to detect ambiguous messages and display ironic gestures. Notably, they can understand metaphorical meaning if the situational context supports it. At 5 years old, children demonstrate sensitivity to discourse context, understanding literal meanings, and suggesting alternative words. Imitation becomes a developed skill, aiding in deeper comprehension. However, emotional climaxes in narratives may still pose challenges. At 6, children closely observe non-verbal cues and decode messages, including irony. Their ability to infer psychological angles improves, leading to more frequent ironic replies by age 7. By 8 years old, children comprehend metaphors in stories but struggle with anaphoric links in conversations. Around 9, they excel in clear communication, initiating long conversations with adults and navigating triadic interactions. Pragmatic language development generally concludes by age 10, with metaphoric skills comparable to adults. At 11, children learn complex speech acts like commissive, such as promising. Full acquisition of idiom comprehension takes around 17 years. Older children show enhanced ability to choose pragmatics markers, with increasing complexity. Cross-cultural influences make comparing developmental norms challenging, emphasizing the need for culture-specific research, particularly in North Indian contexts.

Assessments for Pragmatic Language

The Pragmatic Revolution in the 1970s marked a significant advancement in understanding pragmatic language skills, particularly in the assessment domain (Duchan, 1984). Traditionally, the assessment of pragmatics involved two steps: identifying detected pragmatic markers and describing them. Naturalistic conversation analysis and narrative analysis have been instrumental, offering an ethnographic, inductive approach to capturing patterns in conversations. These methods assess pragmatic markers like coherence, reference, presuppositions, and figurative language. Standardization processes, however, are crucial to ensure reliability. Chapman (1981) demonstrated the efficacy of simple assessments by using statements such as "Hey Jim, find the red ball. okay?" to tap into various pragmatic markers like initiating conversation, guiding attention, asking questions, assigning tasks, and expressing concern. While these assessments provide valuable insights, comprehensive tools like the Comprehensive Assessment of Spoken Language (CASL) and the Prutting's Pragmatic Protocol have been developed to offer a nuanced understanding of pragmatic language abilities. Phelps Terasaki and Phelps Gunn introduced the Test of Pragmatic Language (TOPL) in 1922, later updating it to TOPL 2. The tool featured a booklet with cartoon scenarios where characters engaged in conversations. TOPL faced limitations, such as a lack of variety in context and an inability to capture subjects' creativity or individuality. Tool like the Children's Communication Checklist (CCC) gathered second-hand data from caregivers. Where limitations such as potential for unreliable reporting emerged. Efforts continued with tools like ALICC (Analysis of Language Impaired Children's Conversation) (Adams & Bishop, 2002), which engaged children in dyadic interactions within contextual backgrounds, albeit criticized for its time-consuming nature. Recent developments include the Clinical Assessment of Pragmatics (CAPS) by Adriana Lavi in 2016, introducing video scenarios to assess pragmatic understanding. However, limitations related to cultural applicability and moralistic questioning persist. Context-specific tools, like those developed in Arab cultures and Egypt, addressed verbal and non-verbal markers to enhance cultural sensitivity of the task. Despite numerous tools, there's yet to be one, meeting all criteria for eliciting, measuring, and analysing pragmatic behaviours efficiently. Researchers strive for innovative tools that balance spontaneity, reliability, and cultural relevance, an ongoing goal practitioners eagerly anticipate.

Novel Hindi Video Pragmatic Assessment for Indian Children

Current strides in pragmatics research emphasize the adoption of video-based tools as the new standard for assessing pragmatic language skills in children. These videos, portraying everyday social scenarios, provide a real-life-based assessment that captures the intricacies of social interactions. This multimedia approach surpasses traditional methods, offering a dynamic, engaging, and effective means of understanding human behaviours.

To ensure the effective construction of the video-based assessment, the researchers employed a multi-faceted approach, including naturalistic observation to collect data. The advisors stressed the significance of mindful language in assessment, emphasizing the need for scriptwriters to be exceptionally sensitive to content. To address this, the researcher conducted interviews with children's story writers and performed a qualitative text analysis of Hindi storybooks for children aged 3 to 13 years. Both approaches were designed to identify relevant pragmatic language markers, ensuring that the construction of an robust assessment tool was only post understanding of pragmatics nuances. Drawing from these comprehensive strategy an Hindi Pragmatic Language Story Narration Task (HPSN) was constructed which can be found documented in the authors previous paper (Afreen, F. 2022)

post identification of limitations researcher transformed the HPSN into a video-based format in order to enhance engagement and interactivity in the assessment process.

It was made sure that the video task had clear audio, uniform video length, and scrutiny for potential modifications based on expert feedback. Reliability analysis involved a test-retest method, inter-rater reliability method using Fleiss kappa procured from Subject Matter Expert (SME) ratings, crucial in evaluating the assessment's appropriateness for the specified age group and culture. The results of the reliability analysis, indicating moderate agreement among raters, supported the overall usability of the task. Thirty scripts were shortlisted, with child actors, aged 5 to 15 years, dialogues ensure precise pragmatic representation in the videos. Each video was accompanied by three questions focusing on memory, actor intention, meta-pragmatic skills, aiming to assess participants' comprehension and their ability to decode emotional nuances and indirect expressions. Videos were edited using iMovie, presenting questions after each clip to maintain participants' engagement and focus. A checklist of pragmatic markers was developed through the rating of 28 videos by three research scholars. Valuable feedback from experts led to video modifications, refining the task for pilot studies and a comprehensive investigation into the pragmatic language skills of Indian children.

Despite moderate reliability, this research underscores the potential of video-based assessments in capturing the dynamic nature of pragmatic language skills in children and sets the stage for a broader examination of pragmatic development in diverse cultural contexts, emphasizing the importance of innovative assessment methodologies.

Research Questions:

1. How do Pragmatic language skills operate in Hindi language for North Indian children in the age group of 3 to 13 years?
2. What would be the process to design and construct a standardized, Indian culture specific, age-appropriate Hindi task for the assessment of Pragmatic Language Skills in children belonging to the age group of 5 to 10 years?
3. Do pragmatic skills development have a statistically significant stable upward trajectory as age increases?
4. Does Gender have an effect Pragmatic language skill?
5. How can Hindi Pragmatic language skills be assessed while eliminating limitations learned from all previously researched standardized tools.
6. What is the nature of relationship between Pragmatics skill and the construct Theory of Mind?
7. What are the factors influencing Pragmatic language skills?
8. What role does the environment play in the development of Pragmatics skills?
9. What can be determined about personality of the children when qualitatively analysing responses of children on Pragmatics task?
10. What all motivations and needs can be studied from the responses of children on Pragmatic language video task?

Rationale:

The study was prompted by significant gaps in the available literature. We wanted to examine the development of pragmatics in the Hindi language within the context of Indian culture. As western tools could not be adopted, there arose a clear need to develop a Hindi video task for assessing pragmatic language skills.

The study aimed to utilize this task to study the pattern of development in pragmatic language skills among children aged 5 to 10 years. Additionally, we wanted to study how theory of mind and pragmatics are associated in the Indian culture context.

METHOD

To map the developmental pattern of pragmatics in children from the age of 5 to 10 years while using data from newly developed HPVT and achieve an understanding of north Indian child's social communication in everyday context.

***Objective*:**

1. To map the developmental pattern of Pragmatics Skill in children of 5 to 10 years by using HPVT.
2. To examine the relationship between Pragmatic language Skills and the construct of ToM.

Variables: The following are the independent and dependent variables in the study.

- Independent variable: Age.
- Dependent variable: Pragmatic Language Skills, Theory of Mind.

***Hypothesis*:**

1. We predicted that there will be a difference between the groups of the independent variable Age in relation to the dependent variable performance on novel HPVT.
2. We predicted that the newly constructed HPVT will have a statistically significant positive correlation with Pragmatic Abilities Questionnaire by Jafari et al. (2019).
3. We predicted that the newly constructed HPVT will have a statistically significant positive correlation with the ToM.

Participants:

For the selection of subjects, ecological variables known to have potential effects on Pragmatic Language Skills, as indicated by prior research, were considered and controlled. To ensure strategic control over certain factors, variables such as the child's socioeconomic status, the type of educational institution they attended, and the languages spoken in their household were kept uniform. All the selected participants were typically developing Hindi-speaking children.

These groups were drawn from families residing in the Delhi National Capital Region (N.C.R) and enrolled in age-appropriate grades at Private English medium schools. Data was collected regarding the number of family members and total monthly income. Following B.G. Prasad's per capita income classification, originally published in 1961 and modified in 2021, families belonging to the second social class, indicating a higher middle socioeconomic status, were selected. In addition to their socioeconomic status, children in the sample predominantly used one standard language within their home. They possessed normal hearing abilities and had no history of speech or language-related issues. The sampling method employed was purposive, targeting on conveniently accessible children in parks and schools located near the researcher.

The sample was divided into five age groups, as follows:

- Group 1: Children aged 5 to 6 years
- Group 2: Children aged 6 to 7 years

- Group 3: Children aged 7 to 8 years
- Group 4: Children aged 8 to 9 years
- Group 5: Children aged 9 to 10 years

Each group consisted of 10 number of children, details are provided in the table below.

Table 1 Sociodemographic Characteristics of Participants

Characteristics	**N**	**%**
AGE		
5 - 6	10	100
6 – 7	10	
7 - 8	10	
8 - 9	10	
9 -10	10	
GENDER		
Male	25	50
Female	25	50
TYPE Of SCHOOL		
Private	50	100
Socio-Economic Status		
Upper middle class	50	100

For Administration of novel Hindi Pragmatic Language Video Based Task (HPVT): -
Establishing rapport with child participants was a critical initial step in the data collection process. The researcher took the time to introduce the study and explain the procedures, ensuring that the children felt comfortable and at ease. The children were acquainted with the process through statements like:

- "We're going to look at some short videos of social situations."
- "आपको ध्यान से सुनना होगा, वीडियो देखने के बाद आपसे कुछ सवाल पूछे जाएंगे."

Before the final assessment, each child received two practice videos. These practice videos ensured that they provide a clear understanding of the tasks involved. The assessment process involved showcasing the child participants a structured set of 28 videos in which traditionally dyadic communication happened between two child actors. After each clip, three questions, two descriptive a third target inferential question, were asked to determine the child's comprehension of the video content. Data collection involved recording both the child's audio and video responses through the laptop's camera, which also served for presenting the task. This approach was deemed necessary for a comprehensive understanding of the task's practicality. During this data collection process, the researcher's role was minimal, primarily focusing on recording the child's answers without undue interference (Symonds and Dietrich 1941).

For Administration of Theory of Mind Task (TOM): -
First order theory of mind false belief was tested using cartoon pictures and narration of stories. One story is the Sally-Anne unknown location task which was narrated along with display of relevant cartoon pictures followed by four questions like “Sally ne marble kis dabbe mein rakhi hai?” and “Ab marble kahan hai?” which depict the protagonist having a false belief in contradiction to real events.

Another first-order false-belief task is the unexpected content task by Perner et al. (1987). A standard chocolate box which is familiar to child participants in sample is shown here the twist is that instead of containing chocolates the box is filled with other random objects like the ones that can be used for the purpose of medical aid. The picture is displayed followed with four questions like “Iss box ke andar kya hai ?” and “Agar main aapke friend ko class mein se bulake yeh box dikhaun, to wo kya sochega iske andar kya hai ?” that involves attribution about other's false belief with regard to real events. Each questions correct answer would be given 1 marks otherwise incorrect answer would be given mark of 0. The task can be found in the appendix.

For Administration of PAQ (Pragmatic Abilities Questionnaire by Jafari et, al. (2019):
In this parent/teacher report each item is measuring a pragmatic marker. it is unidimensional, like the item “She/He uses eye contact while talking and/or listening” taps gaze behaviour on the other hand the item "She/He requests more information when not understanding the topic" measures pragmatic marker of asking for clarification on which parent can rate their child from 0 (never) to 5 (always). There are a total of 40 questions out of which 5 are to be scored negatively.

Once the parents were explained the ethical standpoint of the research. The data on the Questionnaire was collected by either handing over the form to the parents, by forwarding them a link of the online google form or by the researcher asking the questions and getting scores on them in a face-to-face interview.

Scoring the Hindi Pragmatic Language Video Based Task (HPVT): -
The most appropriate scoring system depends somewhat on the form of the available data. The audio and video of the child performing the tasks was recorded and analysed for scoring. The assessment of typically developing children aged 5 to 10 involved the use of the Pragmatic marker’s checklist developed by the researcher based on the markers being elicited in each video. In this comprehensive evaluation process, the checklist was used to determine if the children could effectively decode various elements, including facial expressions, voice tone, body gestures, politeness, lies, context, reference and many other within the provided context (Nunnally, 1978). The scoring criteria were established in consultation with the raters. A score of 0 was assigned when there was either no response from the child or when the response provided was inaccurate. In contrast, a score of 1 was given when the child responded to the question accurately. This checklist comprised a total of 400 pragmatic markers which were relevant to each of the 28 videos respectively. A sample of the checklist for the first 10 videos can be found in the appendix.

RESULTS

The following is the table of descriptive statistics for variable Age, Theory of Mind, Pragmatic Abilities Questionnaire and HPVT. The total number sample is provided with mean and respective standard deviation.

Table 2 Descriptive Statistics

	N	Mean	St. Deviation	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
Age	50	8	1.70	-.124	.285	-1.235	.563
Theory of Mind	50	7	.8	-.105	.285	220	.563
Pragmatic Abilities Questionnaire by Jafari et al. (2019)	50	102.5	13	-.135	.285	242	.563
Hindi Pragmatic Language video-based Task	50	313.08	33.23	-.131	.285	217	.563

In terms of their performance on the HPVT, the participants achieved an average score of 313.08, with a standard deviation of 33.23, indicating the variability in their task performance. The skewness and kurtosis values of the score distribution was determined, and both fell within the normal range. This suggests that the distribution of scores exhibited a symmetrical and typical pattern (Tabachnick & Fidell, 2019).

Table 3 Correlation between Variables

	Theory of Mind	Pragmatic Abilities Questionnaire by Jafari et al. (2019)	Hindi Pragmatic Language Video Based Task
Theory of Mind	1.000	.879**	.873**
Pragmatic Abilities Questionnaire by Jafari et al. (2019)	.879**	1.000	.864**
Hindi Pragmatic Language video-based Task	.873**	.864**	1.000

$^{*}p < .05.$ $^{**}p < .01.$

In a Pearson correlation statistical analysis, it was found that Theory of mind was significantly positively correlated with Pragmatic Abilities Questionnaire by Jafari et al. (2019), r(50) = .879, p =<.001 it was found that Theory of mind was significantly positively correlated with Hindi Pragmatic Language Video Based Task, r(50) = .873, p =<.001.

It was found that Hindi Pragmatic Language Video Based Task was significantly positively correlated with Pragmatic Abilities Questionnaire by Jafari et al. (2019), r(50) = .864, p =<.001.
Impactful result demonstrates a positive correlation between all the reported variables.

Table 4 Linear Regression curve fit

R	R Square	Adjustd R Square	Std. Error of the Estimate
.801	.641	.636	20.040

The independent variable is Age of the Children.

A linear regression was calculated to predict performance on Hindi Pragmatic Language video-based Task on Age of the children, b=.80, t (50) =11.11, p <.001.

Table 5 ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	49586.219	1	49586.219	123.468	.000
Residual	27711.274	49	401.613		
Total	77297.493	50			

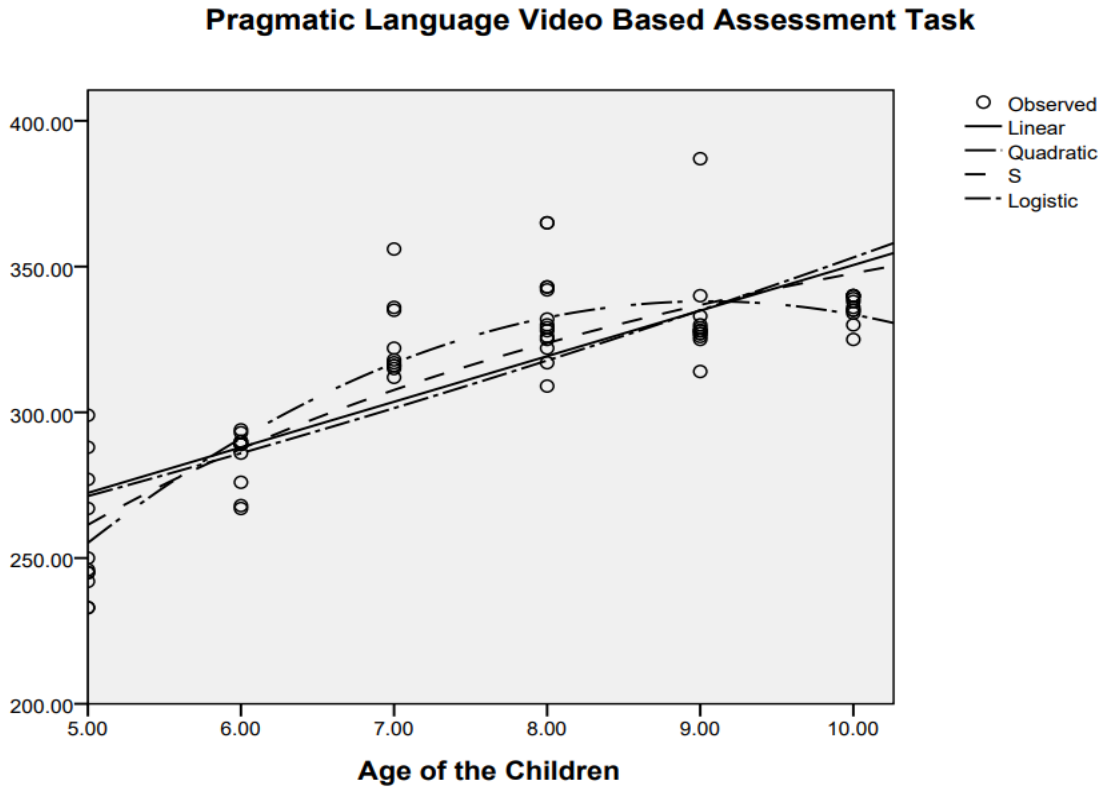
The independent variable is Age of the Children

Table 6 Coefficients

	Unstandardized coefficents		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age of the Children	15.631	1.407	.801	11.112	.000
(constant)	194.203	10.960		17.719	.000

A significant regression equation was found F(1, 49) = 123.468, p< .000, with an R square of .636.

Graph 1



The regression graph most impactful result demonstrates an incline in the development of Pragmatics skills demonstrated by scores on the Hindi Pragmatic Language video-based Task along with age.

DISCUSSION

The testing of HPVT proved successful in stablishing its efficiency and utility with the participants of the study and further for the identification of problems that needed to be worked upon in the task. After reliability and validity testing, HPVT emerged as an effective measure of pragmatic language skills in children. It demonstrated correlation with PAQ and

meaningful connections with participants performance on ToM affirming its significance and highlighting that similar cognitive processes are essential for both understanding pragmatics and ToM. In data the expected trend emerged, pragmatic skills of children in the age group of 5 to 10 years improved with age which serves in achieving one of the objectives of the study.

The novel HPVT faced several drawbacks during its administration for data collection, it proved to be challenging in a variety of ways which need to be addressed. Firstly, the lengthy process, requiring more than 30 minutes of participant time, led to many dropouts as children became bored and lost focus. Additionally, the two stories in the Theory of Mind (TOM) task were long and cognitively demanding, especially at the beginning of the assessment. Secondly, issues arose with the formulation of questions following each video, prompting the need for a review and edit to ensure consistency with the research objectives. Thirdly, the resource and time-consuming video recording of the child participants performing the task deems unnecessary. It can be done in the future when more effective methods of analysis like advanced technologies for facial recognition and AI are available. Fourthly, scoring pragmatic markers in each of the 28 videos proved challenging and time-consuming, highlighting the limitations of the scoring method used to assess children's performance. The complexity of the scoring process emphasized the need for a simpler and more efficient approach to utilize the collected data more effectively. There is a need for a more streamlined and comprehensive scoring approach. Lastly, regression is an incorrect statistical analysis method used to test the hypothesis where a two way ANOVA should be the statistical method of choice in order to get accurate results its important to use appropriate tools for meaningful data insights.

Nevertheless, this study made an important contribution by stablishing the effectiveness of HPVT and also served as an important trial study to understand the improvement that can be made for improving the task. This study contributes to the area of child development and language acquisition and provided information is valuable to the assessment of pragmatic language skills in Indian children, it enriches the existing literature on the topic. However, there were certain limitations in the task.

CONCLUSIONS

The newly developed HPVT emerges as a robust instrument for assessing pragmatic language skills in North Indian children, supported by reliability and validity testing. This initiative aimed to address a critical gap in existing literature by providing a comprehensive tool for assessing pragmatic language skills in children aged 5 to 10. The task demonstrates associations with related constructs, concurrent validity, and satisfactory interrater reliability, making it a reliable and versatile tool for different assessors. Notably, it shows potential in establishing norms for typically developing children and can be incorporated into school curricula for training purposes. The task's adaptability as a projective technique, considering children's personal experiences, opens avenues for future research and applications. Beyond assessment, this research holds promise in diagnostic settings and interventions for improving children's pragmatic language abilities, especially for those with social communication disorders. In the broader context, it contributes to developmental, cognitive, and cross-cultural psychology, fostering positive change in interpersonal communication and understanding mental states. Ultimately, it aspires to enhance effective communication and mutual understanding in society.

Limitation and Future Directions

Even though the HPVT is statistically proved to be a good measure. It had several different limitations. The task with 28 videos was lengthy and consuming long period of time for administration. Some of the videos needed to be removed from the task in order to make it short. The recommendations from advisors is to be considered in order to remove certain videos as some of them are either not of good audio quality, has ambiguous context or are repeatedly assessing the same pragmatic domain. The questions in the video also need to be changed as they are either ambiguous or not correctly eliciting that domain of pragmatics. The scoring procedure used in the pilot study was very time consuming hence simplification is demanded here so that the task data could be precisely analysed. There is also caution needed in scoring as the judgement of one researcher may not adequately represent the child's frame of reference, thus decreasing the validity of the task. Another major concern was related to the theory of mind task where criticism was followed regarding incorrectly administration, multiple memory questions proved to be unnecessarily cognitively demanding.

After identifying the challenges in the novel Hindi Pragmatic Language Video-Based Task assessment there was need to stablish the future direction for the same several professors and research scholars were addressed. To tackle lengthy administration time, recommendations included discarding some videos that weren't well-video graphed or didn't align with the assessment's aims. To streamline analysis, one main pragmatic domain for each video was selected. The questions after videos were edited for simplicity and targeting specific pragmatic domains. Valuable recommendations included audio-recording the entire assessment for consistency hence in the future a decision was made to record only audio of children's responses to questions and transcribe this data. A two-way ANOVA model was recommended for accurate data analysis, incorporating age and gender as independent variables. This improved version constructed would adequately be able to serve the purpose of pragmatics assessment of north Indian children in Hindi.

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APPENDIX

HPVT Sample 10 video Questions

Video 1
Theme Lie
Q1 Pheli ladki nae kya bola ?
Q2 usnae kesae kesae ishaarae kiyae ?
Q3 uska esa kehnae ka kya matlab tha ?

Video 2
Theme Metaphor
Q1 Pheli ladki nae kya kaha ?
Q2 Uss ladkae nae kya kaha ?
Q3 Ladkae ka kya matlab tha ?

Video 3
Theme Sarcasm
Q1 Bheti hui choti bhen is scene mae kya kar deti hai ?
Q2 iss baat pae badi bhen nae kya bola ?
Q3 Esa kehnae sae bhen ka kya matlab hai ?

Video 4
Theme Metaphor
Q1 Badi ladki kya keh rahi hai ?
Q2 Samnae bheti choti ladki kya kehti hai ?
Q3 Badi ladki nae use “tota kyun bola” ?

Video 5
Theme Communicative Intent
Q1 Choti bhen kya kar rahi hai ?
Q2 Bhai uska kya jawab deta hai ?
Q3 Choti bhen baar baar bhai ko disturb kyun kar rahi hai ?

Video 6
Theme Sarcasm
Q1 Iss scene mae kya ho raha hai ?
Q2 White uniform wala ladka kya kehta hai ?
Q3 Mummy kae “Sunday do din pheli hi a gaya” kehnae ka kya matlab hai ?

Video 7
Theme Sarcasm
Q1 White frock wali ladki nae kya kaha ?
Q2 jo ladki Pink pant phene hui hai kya kehti hai ?
Q3 Pink pant pheni ladki nae jo bola uska kya matlab tha ?

Video 8
Theme Mockery, Stylistic Variation / Dramatic Play
Q1 Iss scene main kya ho raha hai ?
Q2 Vo ladki unsae sae kya Kehti hai ?
Q3 Phir do dost hasnae kyun lagti hain ?

Video 9
Theme Indirect Request
Q1 Badi Bhen kya Keh rahi hai ?
Q2 Choti bhen kae hat mae kya cheez hai ?
Q3 Badi bhen ka esa kehnae ka kya matlab hai ?

Video 10
Theme Communicative Intent
Q1 Phele bolnae wali ladki nae kya kaha ?
Q2 doosri ladky nai kya bola ?
Q3 White Kurti vali ladki ese kyun bol rahi hai ?

HPVT Checklist of 10 Video-Based Pragmatic Markers
Rating Children's Performance on
"Hindi Pragmatics Language Video Based Task"
Instructions:

Rate 1 when there is marked evidence of that behaviour across conversation; maybe very frequent or it dominates the conversation. Makes a strong impact on the interaction.
Rate 0 when the marker is never observed and the behaviour doesn't display it otherwise.

Ratings notes:
-Consider each row as an individual behaviour and rate your judgement of that behaviour, even if you feel the behaviour, you are observing relates to more than one row.
-Then rate the other rows in the same way. So it may be that one conversational exchange prompts ratings across several rows.
-Try to give an instinctual rating based on your immediate observations rather than to take an analytical approach.

Where you are unsure of your rating, choose the lower value.
1st of the assessment

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Humour	
Lies	
Askes/Answers Questions	

NON-VERBALMARKERS

Comprehension Based Communicative Intent	Score 0 OR 1
Literal Meaning	
Accurate/Inaccurate Reasoning	
Direct/Indirect Request	
Reference	
Inferencing	
Context	

VERBAL MARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Positive/Negative Affect	
Humour	
Askes/Answers Questions	
Additional inputs	
Request clarification	

2nd of the assessment
NON-VERBALMARKER

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	

Comprehension Based Communicative Intent	Score 0 OR 1
Literal Meaning	
Accurate/Inaccurate Reasoning	
Reference	
Inferencing	
Context	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Positive/Negative Affect	
Sarcasm	
Humour	
Instruction	
Accusations	
Askes/Answers Questions	
Stylistic Variation/ Dramatic play	

3rd of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	
Tone of voice	
Comprehension Based Communicative Intent	
Literal Meaning	

Accurate/Inaccurate Reasoning	
Request	
Context	

4th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Facial Expressions	
Body Posture	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Accusations	
Askes/Answers Questions	
Stylistic Variation/ Dramatic play	
Comprehension Based Communicative Intent	
Literal Meaning	
Accurate/Inaccurate Reasoning	
Request	
Context	

5th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Positive/Negative Affect	
Askes/Answers Questions	
Agreement/ Disagreement	
Interruptions	

Comprehension Based Communicative Intent	Score 0 OR 1
Direct/Indirect Request	

Presupposition	
Reference	
Inferencing	
Context	

6th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Instruction	
Agreement/ Disagreement	
Interruptions	

Comprehension Based	Score 0 OR 1
Communicative Intent	
Accurate/Inaccurate Reasoning	
Direct/Indirect Request	
Context	

7th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers	
Turn Taking	
Positive/Negative Affect	
Sarcasm	
Instruction	
Accusations	
Askes/Answers Questions	
Request clarification	
Agreement/ Disagreement	
Stylistic Variation/ Dramatic play	

Comprehension Based Communicative Intent	Score 0 OR 1
Literal Meaning	
Reasoning	
Inferencing	
Context	

8th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Facial Expressions	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Positive/Negative Affect	
Sarcasm	
Irony	
Humour	
Stylistic Variation/ Dramatic play	

Comprehension Based Communicative Intent	Score 0 OR 1
Literal Meaning	
Reasoning	
Inferencing	
Context	

9th of the assessment
NON-VERBALMARKERS

Markers	Score 0 OR 1
Body Posture	
Facial Expressions	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Turn Taking	
Positive/Negative Affect	
Askes/Answers Questions	
Request clarification	

Stylistic Variation/ Dramatic play	
Interruptions	

Comprehension Based Communicative Intent	Score 0 OR 1
Request	
Context	

10th of the assessment
NON-VERBALMARKERS

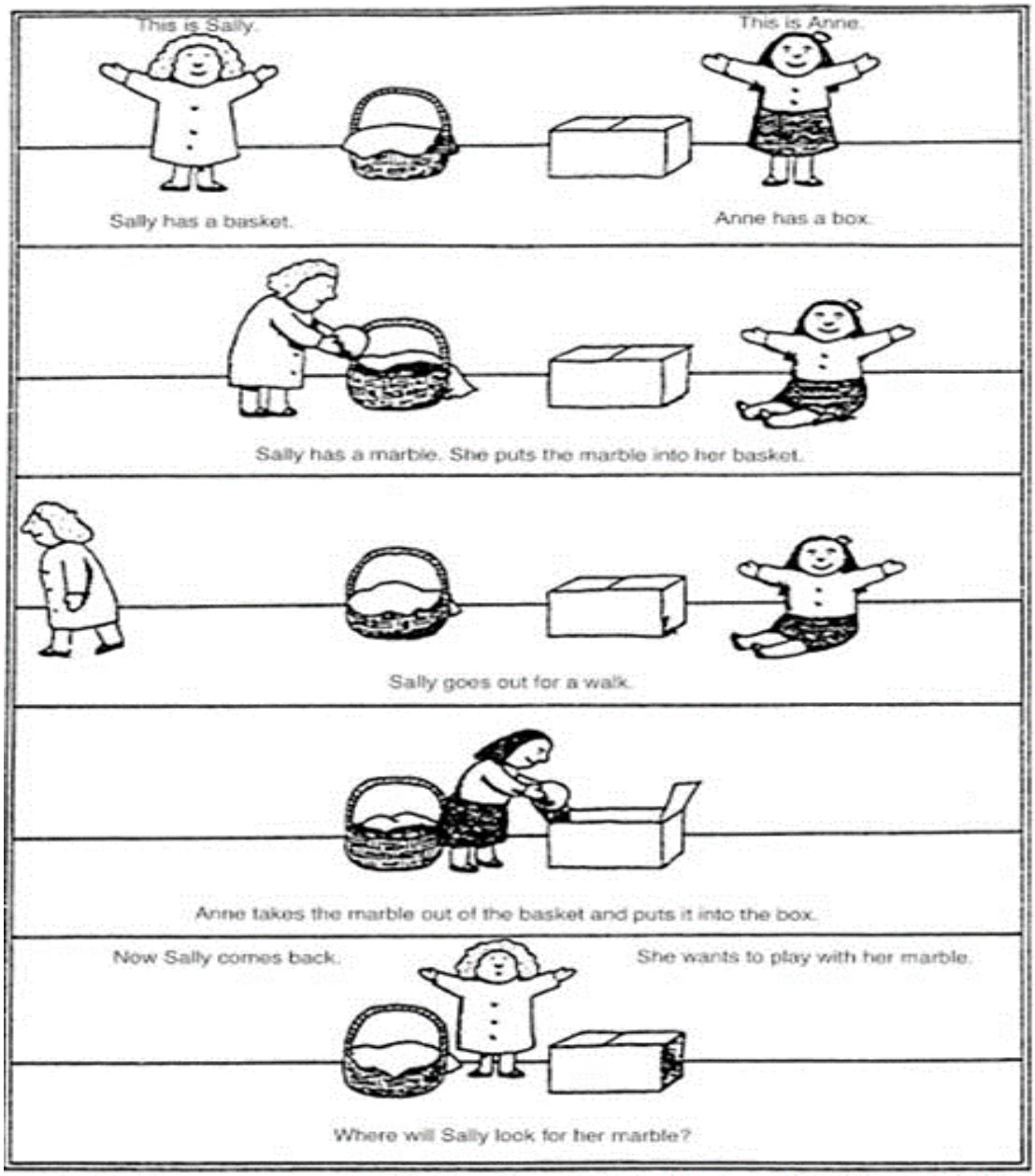
Markers	Score 0 OR 1
Body Posture	
Hand gestures	
Tone of voice	

VERBALMARKERS

Markers	Score 0 OR 1
Displayed Behavioural Markers Positive/Negative Affect	
Askes/Answers Questions	
Additional inputs	

Comprehension Based Communicative Intent	Score 0 OR 1
Literal Meaning	
Direct/Indirect Request	
Context	

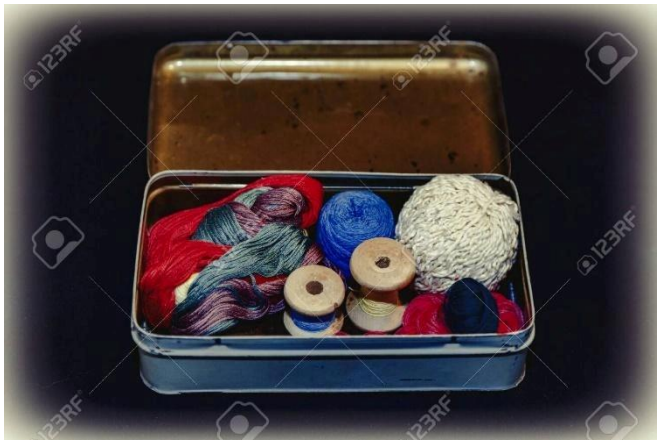
Theory of Mind Task



“sally ne marble kis dabbe mein rakhi hai?”
“Ab marble kahan hai?”
“sally apna marble sabse pehle kahan dhundhegi?”
“Usse kaise pata chalega ki marble dabbe mein hai?”

A.

B.



1. Iss box ke andar kya hoga ?
2. Show picture. What is inside this box ?
3. Agar main aapke friend ko class mein se bulake yeh box dikhaun, to wo kya sochega iske andar kya hai ?
4. Friend kyun sochega ki chocolate hai/Friend ko kaise pata chalega ki andar sui, dhagha hain ?