Article

The Relationship between Perspective Taking Skills and Language Development in Preschool Children

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Abstract

Perspective taking is a fundamental skill that helps us to understand others' thoughts, feelings and perceptions. Past studies have shown that there were significant relations between young children's perspective taking abilities and age, gender, formal schooling and socioeconomic status. The present study was conducted to investigate the relationship between perspective taking skills and language development in preschool children. The study sample included 98 three to five-year-old children (53 girls and 45 boys) attending six kindergartens located at the city center of Adana, Turkey. Children came from families with similar demographic characteristics. As data collection instruments, Perspective Taking Test for Children (PTC) and Peabody Picture-Vocabulary Test were used. Data were obtained by individual interviews. Firstly, children were presented the PTC. The next day, Peabody Picture-Vocabulary Test wasapplied to the children. The results show that there was a significant and positive correlation between perspective taking skills and language development of the children. These correlations were high value for the age of three years, moderate for four years old and high for five years old. It was also determined that language development of children predicted their perspective taking skills significantly.

Keywords: children's social skills, empathy, language development, perspective taking, theory of mind

Note: This article is produced from Master's thesis of Meltem Emen.

Introduction

As humans, we are social entities and should develop positive relations with other people in order to be successful in social life. We need to understand each other to establish positive relations and in such an understanding, perspective taking ability has a critical role to play. The term of perspective taking comes from Latin (per-spicere) and means seeing through something or seeing clearly (Moll & Meltzoff, 2011). Perspective taking is described as the skill to understand a situation or an event from another person's viewpoint (Şener, 1996). Perspective taking includes the abilities required for a person to differentiate his/her view from another's view and to make a right decision about the view of others based on the present information (Zhao, Wang, Su & Chan, 2010). This is a significant skill since it is related to different developmental areas and is a precursor to the development of several skills in areas such as empathy, prosocial behavior and interpersonal problem solving (Carey & Cassels, 2013; Carlo, Knight, McGinley, Goodvin & Roesch, 2010; Tan-Niam, 2003).

Perspective taking consists of three sub-dimensions: perceptual, cognitive and emotional perspective taking. Perceptual perspective is the ability of a person to make an accurate conclusion about what another person sees from his/her point of view (Kurdek & Rodgon, 1975). Cognitive perspective taking is defined as a skill to estimate correctly what another person thinks in a specific situation (Hinnant & O'Brien, 2007). Emotional perspective taking is described as an ability to estimate how a person feels when s/he is in a certain emotional situation (Laible & Thompson, 1998).

Social interactions play an important role in child's ability to comprehend accurately the perceptions, thoughts and feelings of others. During these interactions, child begins to realize that another person can perceive, think and feel differently from himself/herself (Aslan, 2017). The most basic tool used in this process is language. Through this, children have the opportunity to connect to the social context and to reach the minds of other people (Vygotsky, 1980). Vygotsky also believes that the nature of the mind is social, humans are natural elements of interaction and they use the language as a bridge to interact with the environment (Bodrova & Leong, 2006; Ermer, Guerin, Cosmides, Tooby & Miller, 2006). Thus, it becomes important to understand the relationship between the perspective taking skills and language development.

Literature Review

In developmental literature, the history of studies on children's perspective taking skills dates back to Piaget and Inhelder's (1956) well-known three- mountains experiment. In this experiment, three mountains of different sizes are kept on the table and a doll is kept in different positions near the mountains and the children were asked to visualize how the doll saw the mountain model. It was determined from the study that preschool children were unsuccessful in understanding the perspective of the doll (Phinney & Nummedal, 1973). In addition to these results, they concluded that young children were not able to move away from their own perspectives due to their egocentrism and thus, they could not differentiate their own perspectives from another individual's perspectives. After Piaget and Inhelder, several researchers like Laurendeau and Pinard (1970); Wimmer and Perner (1983) utilized similar methods and found that preschoolers could not take any other perspective. On the other hand, some researchers like Borke (1975); Kurdek and Rodgon (1975); Masangkay, et al. (1974) and Taylor (1988) claimed that Piaget's method was inadequate and investigated perspective-taking skills in children by simplifying the method and questions used by Piaget. They found that preschool children were not as self-centered as Piaget conceived and could take the perspective of others. For instance, Borke (1975) suggested that young children could respond with answers that are more accurate when familiar toys are used instead of the mountain experiment.

Since the findings that young children could take other's perspectives have emerged, many studies have focused on the factors that influence the perspective taking skills of preschool children. The findings of these studies have shown that there is a significant relation between the children's perspective taking skills and pro-social behavior (Strayer & Roberts, 1989; Underwood & Moore, 1982), attachment styles (Laible & Thompson, 1998), mother and child interaction (Dunn, Brown, Slomkowsky & Tesla, 1991), mother's attitude (Farrant, Devine, Maybery & Fletcher, 2012; Taumoepeau & Ruffman, 2006), cultural structure (Gauvain & Monroe, 2014), intelligence (Schwenck, et. Al, 2014) and preschool attendance (Şahin & Aslan, 2018).

On the other hand, perspective-taking ability is considered not only as a social skill, but also as a social cognitive skill. Both Piaget and Vygotsky pointed out that the child's interactions with others are influential on cognition.

On these interactions, Vygotsky emphasized language (Miller, 2017). According to Vygotsky, social interaction is a requirement for understanding other individuals' thoughts. Language is the most important instrument in this interaction (Bodrova & Leong, 2006). Children internalize both nonverbal and related language in their communication and communicate with their minds through language (Miller, 2017). In order to maintain communication with individuals and prevent conflicts, the child needs to understand the perspective of the related individual. It is imperative to use language for such an understanding, because language is the backbone of thought (Astington & Jenkings, 1999). Acquisition of language structure leads the child to elaborate about cognition. Furthermore, this allows children to interpret and evaluate their own and others' thoughts (Lohman & Tomsello, 2003).

Past studies demonstrate that children's language skills could be differentiated based on age and gender (Ege, Acarlar & Güleryüz, 1998). Studies also show that language abilities of children are associated with their social status (Ergin, 2012), peer relationships (Justice, Petscher, Schatschneider & Mashburn, 2011), emotional perspective-taking (Hofer, 2006), cognitive development abilities such as intelligence and Theory of Mind (Milligan, Astington & Dack, 2007). When language skills are considered with perspective-taking skills, it was found that language skills is not the only factor in comprehending others; however, it may improve the comprehension level and resolve related problems (Astington & Jenkins, 1999). There are several studies on theory of the mind, which are considered as the cognitive dimensions of perspective- taking skills, and language (Lohman & Tomsello, 2003; Milligan, Astington & Dack, 2007). These studies usually were on the impact of language development on theory of mind. The findings of these studies showed that the progress in language development affects the theory of mind ability.

Related literature shows that a very limited number of research directly focuses on the relation between children's perspective-taking skills and language development. Hofer (2006), for instance, examined the relationship between children's emotional perspective-taking skills and language development. She found that young children's language development predicted their emotional perspective-taking skills. In another study, Han and Lee (2013) found out that bilingual children performed better on emotional perspective taking than monolingual children. On the other hand, these studies focused on only emotional dimensions of perspective

taking and there has not been any study concerning relation between perspective taking skills with all aspects and language development. Considering these findings about the perspective-taking skills and language development, the objective of the present study was to investigate the relationship between the children's perspective-taking skills and language development. The research questions are:

1. Is there a significant relationship between the children's perspective-taking skills and language development?
2. Do the children's language development predict their perspective-taking abilities?

Methodology

This research study followed a correlational design in terms of investigating the relationship between language development and perspective-taking skills of children. In relational studies, relationships between two or more variables are investigated without having any influence on them. Correlation coefficient is used when these relationships are revealed (Fraenkel, Wallen, & Hyun, 2012).

Sample

The study sample included 98 three to five-year-old children attending six public kindergartens in the city center of Adana, Turkey. In sample selection, firstly researchers determined the kindergartens where middle-income children attend in the city center of Adana. Then they created a list of children whose parents had a bachelor's degree, similar income levels and family structure. A total of 98 were chosen randomly by using random numbers.

Table 1
Demographic Information of Participants and Their Families

	Group	f	%
Age	3 years old	28	28
	4 years old	33	34
	5 years old	37	38
Gender	Girl	53	52
	Boy	45	48
Number of children in the family	Single child	18	18
	Two children	70	72
	Three children	10	10
Child's birth order	First	33	34
	Second	60	61
	Third	5	5
Mother occupation	Official	10	10
	Teacher	32	32
	Banker	33	34
	Nurse	10	10
	Accountant	4	5
	Others	9	9
Father occupation	Official	38	39
	Teacher	16	16
	Banker	14	14
	Nurse	8	8
	Accountant	3	3
	Others	19	19

Table 1 presents the demographics of the participants and their families. Of the 98 children, 28 were three years old (Range = 36-44 months, $M = 42$ months), 33 were four years old (Range = 48-54 months, $M = 51$ months) and 37 were five years old (Range = 60-65 months, $M = 62$ months). All parents had a bachelor's degree and similar income levels. In addition, all families were nuclear families. These standards were adopted to examine the relationship between perspective taking and language development more clearly and to minimize the number of disruptive variables, because it is known that socioeconomic level affects both variables. For instance, Jersild (1979) determined that children with low socioeconomic level and

typical intelligence had lower vocabulary development when compared to children with high socioeconomic level and typical intelligence. A study conducted by Öztürk (1995) concluded that in general, receptive language levels of children with high socioeconomic level were higher than that of the children in lower socioeconomic levels. For this reason, participants were selected from only nuclear families with parents who lived in the same household, and spoke Turkish language.

Instruments

General Information Form. A general information form designed by the researchers to identify the demographic information about the children and their families was used in the study. This form included questions querying the age, gender, school attendance, order of birth, parents' educational and income levels, number of siblings, order of siblings, family status (parents living together or separated), family structure (nuclear family, extended family), monthly family income and parents' profession.

Perspective taking Test for Children (PTC). In the study, 'Perspective taking Test for Children' (PTC) developed by Aslan and **Köksal** Akyol (2016) to measure the perspective taking skills of three, four and five-year-old children was used. PTC is an illustrated measurement instrument that includes 24 items in three theoretical dimensions, namely, perceptual perspective taking, cognitive perspective taking, and emotional perspective taking. The perceptual perspective-taking dimension includes four items. In each item, the task of the children is to predict accurately what the main character observes at the current position. The cognitive perspective-taking dimension also includes four items. In each item, 4-5 pictures that describe an event are presented. For each item, initially the cards are presesnted to the children and the event is explained. Then, the picture that contains the critical point of event is omitted and the child is asked what s/he thinks about the reason of the event. Finally, the emotional perspective-taking dimension which includes 16 pictures that reflect the moods of the children may be experienced in their daily lives (happiness, sadness, anger, fear). The pictures do not include the facial expressions of the protagonists. The situation depicted in the picture is explained to the child and the child is asked to predict the emotions of the protagonist in such a situation. They receive 1 point for each correct answer and 0 for each incorrect answer. The maximum score a child can receive in PTC is 24. For internal consistency and reliability of the scale, the KR-20 coefficient was recalculated and found as .76.

Peabody Picture-Vocabulary Test. The Turkish language form of Peabody Picture-Vocabulary Test, developed by Dunn (1972) and adapted by Katz, Önen, Demir, Uzlukaya and Uludağ (1974) was used for the study. The Peabody Picture-Vocabulary Test measures the vocabulary development. The test includes questions that aim to determine the vocabulary (concept) development through pictures. The test contains 100 cards which has four pictures on each card. The child is expected to point out the picture that matches with the word that was verbally communicated to her or him from among the four pictures on the card. Each correct answer is awarded with 1 point. This raw score is converted into receptive language age using the Receptive Language Age Chart based on the child's predetermined residence, for example, village, city and area. This test is related to receptive language development.

Data Collection

In data collection process, initially legal permission was obtained from the local authorities. Then, the researchers held a meeting with the administrators of the selected schools and the objectives of the study were explained. The researchers also met with classroom teachers and gave some information about the objectives and the data collection procedure of the study. The information form was sent to the parents and parents' approval for the participation of their children in the study was obtained. The schedule was planned for the interviews, which would be conducted with children who were allowed to participate in the study. Before the interviews, the researchers met with the children and participated in an activity with the children to initiate communication. After the activity, the children were informed that they would participate in a game with pictures. The measurement instruments were applied to children by the researchers in a quiet room in the school. Firstly, PTC was presented to the children. The day after this application, Peabody Picture-Vocabulary Test was applied to the children. Application of both tests took about 15 minutes each.

Data Analysis

The data obtained in the study were analyzed with descriptive statistics based on the normality test results. Shapiro-Wilk Test was used to assess the normality test since the study group included more than twenty subjects. The fact that Shapiro-Wilk Test revealed no significant difference between children's

scores in the PTC and Peabody tests scores demonstrated that the data had normal distribution (Büyüköztürk, 2017). PTC and Peabody Picture-Vocabulary Test descriptive statistics and normality test results are presented in Table 2.

Table 2
Normality tests of PTC and Peabody Picture-Vocabulary Test

Group	$\bar{x}$	SD	Median	Min	Max	Skewness	Kurtosis	Shapiro-Wilk
PTC (Total)	16.72	3.27	17	9	23	-.279	-.512	.060
Peabody (Total)	56.41	11.34	56	26	81	-.153	-.056	.559
PTC (3 years old)	14.14	2.82	14	9	20	.151	-.515	.806
Peabody (3 years old)	47.28	8.96	49.5	26	62	-.759	.232	.144
PTC (4 years old)	16.96	2.88	17	9	22	-.432	.525	.402
Peabody (4 years old)	56.27	8.37	55	37	77	.137	.747	.692
PTC (5 years old)	18.45	2.68	19	13	23	-.450	-.456	.120
Peabody (5 years old)	64.18	9.87	64	37	81	-.521	.383	.555

Table 2 shows the results of descriptive statistics and normality test for the scores that the children received in PTC and the Peabody Picture-Vocabulary Test. The scores obtained in the PTC and the Peabody Picture-Vocabulary Test demonstrated normal distribution. In addition, the PTC and Peabody Picture-Vocabulary scores of three, four and five-year olds also demonstrated normal distribution.

Since the scores obtained by the children in the PTC and Peabody Test exhibited normal distribution, the data were analyzed with parametric tests. The Pearson Correlation Coefficient was calculated to determine whether there was a significant correlation between the PTC and Peabody Picture-Vocabulary Test scores. Regression analysis was carried out to test whether the Peabody Picture-Vocabulary Test scores predicted the PTC scores of children.

Findings

In this section, findings obtained in the present study that aimed to investigate the relationship between perspective taking skills and language development in preschool children are presented.

Table 3
Correlation between PTC and Peabody Picture-Vocabulary Test

		Peabody Picture- Vocabulary Test
Perspective Taking Test (PTC) (Total)	Pearson Correlation	.763
	P	.01
	N	98
		Peabody Picture- Vocabulary Test
Perspective Taking Test (PTC) (3 years old)	Pearson Correlation	.584
	P	.01
	N	28
		Peabody Picture- Vocabulary Test
Perspective Taking Test (PTC) (4 years old)	Pearson Correlation	.784
	P	.01
	N	33
		Peabody Picture- Vocabulary Test
Perspective Taking Test (PTC) (5 years old)	Pearson Correlation	.780
	P	.01
	n	37

Table 3 shows the correlation between children's Perspective taking Test and Peabody Picture-Vocabulary Test scores based on age groups. There was a medium level of positive and significant correlation between the PTC and Peabody Test scores of the children in three years old age group (r= .584, p= .01). The correlation between the PTC and Peabody Test scores of the children in the four-year-olds was also positive, significant, albeit moderate (r= .784, p= .01). There was also a high level of positive and significant correlation between the PTC and Peabody Test scores of the children in five years old age group (r= .780, p= .01). Finally, analysis of the scores of the whole sample demonstrated that there was a highly significant and positive correlation between PTC and Peabody scores of the children (r= .763, p= .01)

Table 4
Predictors of Perspective Taking Achievement

Model	Predictors	B	SH_B	B	ΔR^2
1	Constant	3.957	1.066		
	Peabody	.225	.018	.78	.608*
2	Constant	2.313	1.720		
	Age	0.014	.043	.036	.015
	Gender	.389	.443	.060	
	School attendance	.726	.781	.101	

*p≤.05

Table 4 demonstrates the results of the linear regression analysis. Initially, the conditions for regression analysis were provided (normal distribution, multi-collinearity control). Afterwards, linear regression analysis was applied with the perspective taking achievement as the dependent variable and language development, age, gender, school attendance as the independent variables. The independent variables, except language development, were found to play an insignificant role in explaining the dependent variable. On the other hand, language development explained 60% of the variance in perspective taking achievement (ΔR2= .60), as measured by the PTC.

Discussion

The objective of the present study was to investigate the correlation between the perspective taking skills and language development of children. In this section, the findings about the research questions were discussed based on both theoretical information and the results of past studies.

The first research question was whether there was a significant relation between children's perspective taking skills and language development. The findings of the study demonstrated that there was a significant positive correlation between the perspective taking skills and language development of the children beginning from three years of age. Although it is not possible to conclude that there was a definite causality, the findings exhibited that children with better

language development are better in understanding others' perceptions, cognition and emotions. Vygotsky stated that language is not only a communication tool, but also a tool that shapes thought. As language skills increase, children engage in social interactions more often and a result of these interactions they improve their cognitive skills and better understand that others can percept, think or feel differently (Bodrova & Leong, 2006).

In the related literature, the relation between perspective taking skills and language development is usually scrutinized based on the cognitive perspective taking dimension and within the context of the theory of mind (Astington & Jenkins, 1999; Charman & Shmueli-Goetz, 1998). Preschool period is a time when the theory of mind begins to develop in children. It is also an important stage in language acquisition. This simultaneous development has led to the investigation of the relationship between the theory of mind and language development (Gopnik, 1990). In the related literature, some researchers, especially Piaget, think that language is important for the theory of mind skills; however, the theory of mind theory is not based on language development. (Astington & Jenkins 1999). Baron-Cohen (1995) found that children with autism were not able to solve the problems of the theory of mind although they acquire the language. This is supported by Apperly, Samson, Carroll, Hussain and Humphreys (2006); Astington and Jenkins (1999); and Carley (1998).

On the other hand, it is not possible to ignore the contributions of the social experience that the child acquires with language to thought. Vygotsky notes that language is very important in mental development and is the essence of mental functions (Bodrova & Leong, 2006). According to the socio-cultural description of theory of mind, children acquire theory of mind in social life and this occurs through language use. Thus, the role of language in understanding others' thoughts and emotions is decisive. Similarly, the findings of the present study seems closer to this theoretical position.

In addition to the theoretical discussion, various studies investigating the relationship between cognitive perspective and language skills also have findings that support the results of this study. For instance; studies conducted by Cutting and Dunn, (2006) and Dunn and Brophy (2005) showed that children who were raised in families where mental state and feelings were shared and who participated in

such conversations were more successful in assessments on recognition of the mind and emotions. Similarly, Ornaghi, Pepe, Agliati and Grazzani (2018) found that children with high language ability were talented emotional regulation. Milligan, Astington and Dack (2007) conducted a meta-analysis on 104 studies that examined the relationship between false beliefs and language skills in children and found that the false belief performance was associated with language skills. In another study, Charman and Shmueli-Goetz (1998) examined the correlation between language development and theory of mind skills and found a high level of correlation. Granti (2004) conducted a study with 3-6 years old children to investigate the correlation between the theory of mind and comprehension and use of noun clauses and found that the progress in language development predicted the achievements in the theory of mind. Furthermore, Guajardo and Carwrigt (2016) found that there was a significant correlation between language development of children and their theory of mind skills starting from the early age of 31 months in a longitudinal study.

The second research question was whether the language development of children predicted their perspective-taking skills significantly. It was found that children's language development significantly predicted their perspective taking skills. This result shows that the direction of the relationship between perspective-taking ability and language development is from language development to perspective-taking. Similarly, Astington and Jenkins (1999) assessed three-year-old children in a longitudinal study to examine the relationship between the theory of mind and different components of language. They found that the language development in three-year-old children was significantly associated with theory of mind skills. They also found out that early age language performance predicted the theory of mind performance in future years. In another Study, Karakelle and Ertuğrul (2012) found that language skills predicted the theory of mind ability in children of five years of age.

Consequently, although there are different views and studies in the related literature, current relationship between variables and direction of relationship point out that the children's language development at an early age is important in terms of understanding and adapting others.

Conclusion and Recommendations

As a result of this research study examining the relationship between language development and pre-school children's perspective taking skills, there was a positive and significant correlation between perspective taking skills of children and their language development starting from the age of three. Furthermore, children's language development significantly predicts their perspective-taking skills. In light of the results, it is recommended that parents and teachers should support children's language development to improve their perspective-taking skills. For future studies, it is recommended to develop a language-oriented program to improve perspective-taking skills and to investigate the effectiveness of the developed program on children's perspective-taking skills. Finally, in the current research a cross-sectional method was used. In the future, longitudinal studies should be used to investigate the relation between children's perspective-taking skills and language development.

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