



The Influence of Fables on The Theory of Mind for Children Aged 5-6 Years

Devi Rusli^{1*}, Rindang Ayu², Nikmah Hayati³, Ali Arben⁴.

Abstract

Animal stories called fables are learning media used to introduce various experiences about people's mental states to preschool children. Generally, children need to interact with others, particularly with their peers. The theory of mind (ToM) which is regarded as the understanding of people's emotions helps children to adjust and be easily accepted while playing with their friends. To prove the effect of fables on ToM development, this study was conducted on 44 preschool children including 23 boys and 21 girls. The participants are divided into one control group and two experimental including fables and non-fiction. Based on the analysis results, there is an average difference between the groups. It was discovered that fables had a high ToM score than the non-fiction and control group with a significant value of $p < 0.05$ ($X^2 = 7.07$, $p = 0.029$). This shows that animal stories influence the development of ToM.

DOI Number: 10.48047/nq.2022.20.19.NQ99020

NeuroQuantology2022; 20(19):219-226

Introduction

A study on understanding mental states has continued to be a concern since Premack and Woodruff (1978) discovered the concept of false belief. Also, the ability to understand these emotions including thoughts, desires, beliefs, and feelings become popular through the theory of mind (ToM). According to Wellman *et al.* (2001), Callaghan *et al.* (2005), and Slaughter & Perez-Zapata (2014), ToM is rapidly developed in preschool children aged 3-5 years. Wellman and Liu (2004) showed that this theory has five stages including diverse desire and belief, knowledge access, false belief, as well as hidden emotion. Sequentially, ToM is developed from the easiest to the most difficult stage.

The theory of mind contributes to various competencies that are indispensable in daily life. Therefore, children who tend to understand people's opinions and emotions can sympathize, help and resolve disputes, as well as understand the rules of the game (Kanske *et al.*, 2015; Schurz *et al.*, 2020; Singer & Tusche, 2014; Hoffman, 2000; Hay & Cook, 2007; Dunfield, 2014; Imuta, Henry, *et al.*, 2016; Slaughter *et al.*, 2002; Cutting & Dunn, 1999; Lalonde & Chandler, 1995; Wellman, 2018, 2020). According to Yirmiya *et al.* (1998), Shaked & Yirmiya (2004), Senju (2012), Kimhi (2014), and Leekam (2016), children who failed to understand others' views, desires, and feelings are regarded as an autistic spectrum.

219

Corresponding author: Devi Rusli, Rindang Ayu, Nikmah Hayati, Ali Arben.

Address:^{*} Faculty of psychology and health, Psychology Department, Universitas Negeri Padang, 25131, Sumatera Barat, Indonesia.

³Faculty of Educational Sciences, Departement of Educational Science Administration, Universitas Negeri Padang, 25131, Sumatera Barat, Indonesia. ³Faculty of Law, Universitas Sumatera Barat, Indonesia.

E-mail : devirusli@fip.unp.ac.id, rindangayu@fip.unp.ac.id, emailku.nikmahhayati@gmail.com, arben_ali2004@yahoo.com



This makes children have behavioral disorders, difficulty in understanding people's points of view, and even affects their academic achievement (Anastassiou-Hadjicharalambous & Warden, 2008; Poletti & Adenzalo, 2013; Flavell & Miller, 1998; Cutting & Dunn, 1999; Lecce *et al.*, 2011; Lecce, Caputi, & Pagnin, 2014). Leslie and Thaiss (1992) and Scholl and Leslie (1999) believed that ToM is acquired naturally. According to Foote & Holmes-Lonergan (2003), Ruffman *et al.* (1998), Ruffman *et al.* (1999), and Slaughter *et al.* (2007), the theory is developed through social interactions with the environment.

Several studies are seeking environmental factors that can stimulate the acquisition of fiction reading. This is because literary fiction improved ToM's performance (Kidd & Castano, 2013; Kidd, Ongis & Castano, 2016; Black & Barnes, 2015; Mar *et al.*, 2006, 2009; Kuijk, Verkoeijen, Dijkstra & Zwaan, 2018). Mar and Oatley (2008) emphasized that reading fiction makes an individual gain social knowledge and cognition skills. Moreover, it is linked to mental activity (Tamir, Bricker, Dodell-Feder, & Mitchell, 2016). Byom and Butlu (2013) discovered fiction readers perceive and interpret the events experienced by the characters in the story. Furthermore, they feel the sadness, anger, joy, confusion, and thoughts that the characters expressed (Nurgiyantoro, 2018).

Kidd and Castano (2013) explained that the literary fiction genres affect ToM in adults. Also, Wulandini *et al.* (2017) analyzed the influence of these genres on ToM among children aged 9-10 years. These literary fiction genres affect the first-order and second-order abilities of school-age. It is only a few studies have examined the influence of these genres on ToM in preschool. Mar *et al.* (2010) and Rusli *et al.* (2020, 2021) analyzed the effect of storybook media exposure on this theory. However, the study directly tested certain fiction genres to show ToM development.

Methodologically, this study is different from the previous one (Kidd & Castano, 2013; Black & Barnes, 2015; Kuijk *et al.*, 2018; Wulandini *et al.*, 2017; Rusli *et al.*, 2020, 2021).

This is because it aims to examine the influence of the literary fiction genres on ToM in preschool. Wulandini *et al.* (2017) emphasized that school-aged children can read, while those in preschool are still unable to read story books. Therefore, the fiction/non-fiction reading group needs to be read by the experimenter known as the teacher. In this study, fables or animal stories become the literary fiction genres used for the analysis. Nurgiyantoro (2015) explained that fables are animal stories grouped in traditional literary fiction. In this story, animals are used as characters who can talk and behave like humans. Fables help to create a ToM mechanism since they are simple, easy to understand, and contain social messages, true/false conflicts, as well as moral messages. ToM occurs in preschool because the teacher conveys fables by reading.

Methods

Research Subject

A total of 44 preschool children in West Sumatra comprises of 23 boys and 21 girls aged 5-6 years were selected as the participants. Also, the selection is based on good communication skills because it is used to examine children's understanding of reading and working on ToM assignments. Data were analyzed using a random assignment sampling method. Therefore, all eligible children were randomized and divided into one control group and two experimental including fables and non-fiction.

Theory-of-Mind

Wellman and Liu developed five stages used to measure ToM, and Kuntoro *et al.* (2013) adapted them to the Indonesian language and culture. These five assignments include stories to determine children's understanding of diverse desires (DD), beliefs (DB), knowledge access (KA), false belief (FB), and hidden emotion (HE). On the scale, ToM tasks consist of control and target questions. This control aspect aims to determine the storyline's understanding, while the target one measures the understanding of each concept. The story is retold when the child cannot answer the control questions. Meanwhile, the target question is not repeated when children failed to answer it correctly. The ToM test was only provided to all experimental and control groups undergoing four treatments for four consecutive days. Children get healthy food and drinks when they complete the experiment. Approximately, the ToM test is carried out for 10 minutes.



Fable Fiction, Non-Fiction, and Control Group Experiment

In this study, the participants are categorized into one control and two experimental groups. Children in the experimental group are those that the teacher told a fable storybook titled "The Mouse Deer and the Kind Buffalo" as well as a non-fiction series of fruits and vegetables called "I am the Carrot".

Meanwhile, children in the control group are allowed to play with puzzles and lego, as well as draw. The activities in both experimental and control classes were carried out individually for 10 minutes. In the experimental group, teachers ask about the children's understanding of animal stories and vegetables when they finished reading. The teacher also asked about the mental state of the Mouse Deer and the Buffalo. Furthermore, the teacher tells the feelings and thoughts in the reading when children failed to understand them. This treatment is performed four times for four consecutive days to obtain the maximum influence.

Results

A total of 44 preschool children in Pariaman City, West Sumatra comprises of 23 boys and 21 girls aged 5-6 years were selected as the participants. Table 1 shows the general description of both age and gender, while Table 2 indicates the age and gender description of each study group. The average age of the participants was 64 months or 5.5 years (N = 44, SD = 3.53). About 52% and 48% of the respondents are male and female respectively. Participant descriptions show that age and gender have been controlled by the study design.

Table 1.
Overview of Participants' Age and Gender

Characteristics	N	%	M	SD
			(Month)	
Age (months)				
5-6 years (50-72 months)	44	100	65	3.53
Gender				
Male	23	52		

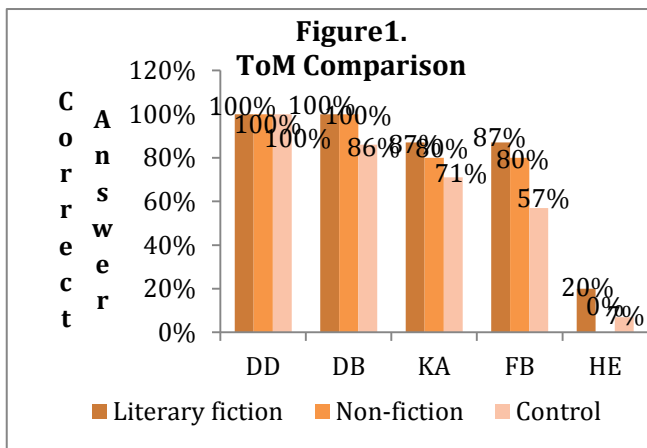
Female	21	48
Total	44	100

Table 2.
Age and Gender Description of Each Research Group

	Characteristics	N	%	M	
				SD	(Month)
Fable fiction	Age (50-72 months)	15	100	65	3.91
	Gender	6	40		
	Male	9	60		
	Female				
	Total	15	100		
Non-fiction	Age (50-72 months)	15	100	65	3.48
	Gender	7	47		
	Male	8	53		
	Female				
	Total	15	100		
Control	Age (50-72 months)	14	100	64	2.88
	Gender	8	57		
	Male	6	43		
	Female				
	Total	14	100		

Table 2 shows that the average age and standard deviation in each study group were almost equal. The fables, non-fiction, and control groups had a mean age of 65, 65, and 64 months with SD = 3.91, 3.48, and 2.88 respectively. Figure 1 shows that DD, DB, KA, FB, and HE are 100%, 95%, 80%, 66%, and 9.1%. Therefore, the order of ToM development is DD > DB > KA > FB > HE. In each group, this performance also has the same order as the overall ToM.





The results of this study indicated the average mean for each group is different. Table 3 shows that fables had the highest average ToM compared to the non-fiction and control groups. The Kruskal-Willis test was used to indicate the difference in the mean value. It was discovered that reading genre affects ToM with a p-value < 0.05 (p = 0.029). Also, the Mann-Whitney U test was carried out to indicate a difference between the fictional and the control groups with U and p = 56 and 0.02 respectively. There was a difference between the fables and the non-fiction group with U and p-value = 67 and 0.03. Meanwhile, the mean of the non-fiction is not different from the control group because they have U and p = 91.5 and 0.56 respectively.

Group	N	Mean	SD
Fable Fiction	15	3.93	0.88
Non-Fiction	15	3.29	0.83
Control Group	14	3.07	1.14
Total	44	10.29	2.85

Discussion and Conclusion

The results showed that fables mostly affect ToM in children aged 5-6 years. This literary fiction becomes the genre that highly supports ToM's performance compared to non-fiction. Kidd and Castano (2013) emphasized the influence of literary fiction on ToM in adults. Also, Wulandini *et al.* (2017) showed its influence on children in primary school. The results support replication studies by extending the subject to preschool children. Nurgiyantoro (2005) explained that emotions and intellectuals tend to be awakened through fables. According to Byom & Mutlu (2013), the understanding of

mental state can occur when a person perceives the characters' feelings and events. It was discovered that fables are a predictor of ToM performance in preschool.

Based on the results, the order of obtaining ToM is as follows DD>DB>KA>FB>HE. This pattern of development is similar to that of children in western and Asian countries such as the United States, Australia, Italy, Germany, Korea, Hong Kong, and Indonesia (Wellman & Liu, 2004; Kristen *et al.*, 2006; Peterson *et al.*, 2005; Vinden, 2001; Rusli *et al.*, 2020, 2021). The results indicated that cultural diversities failed to cause differences in mental state understanding. In several Asian countries such as Iran, Turkey, and China, ToM development is in a different order (Shahaeian *et al.*, 2011; Selcuk *et al.*, 2018; Zhang *et al.*, 2016). This difference becomes interesting to examine the factors behind the theory.

On the diverse desire (DD) concept, the percentage of correct answers is high for all experimental and control groups. There is a ceiling effect for the concept because the task is too easy for 5-6 years children. Also, fables had a higher percentage of correct answers than the non-fiction and control groups. This shows that the literary fiction genre is superior in influencing ToM (Kidd & Castano, 2013). Meanwhile, the hidden emotions (HE) concept was the most difficult task for each group. This is similar to the study of Rusli *et al.* (2020, 2021). HE requires preschoolers to understand the complex mental states of others (Peterson & Wellman, 2012). Therefore, the HE concept is expected to be easily answered by children aged 7-8 years.

In this concept, the control group has a higher percentage of correct answers than the non-fiction. Dromey (2010, in Wulandini *et al.*, 2017) explained non-fiction story failed to facilitate children's ToM because it aims to acquire natural, social science, and other knowledge. In the control group, children's mental state experience due to their interactions with parents, siblings, and peers affect the acquisition of the HE concept (Melzi *et al.*, 2011; Taumoepeau & Reese, 2013; O' Brien *et al.*, 2011; Suwayet *et al.*, 2012). The average score for the non-fiction was higher than the control group despite not having a significant difference in ToM. Generally, non-fiction genres help to support children's cognitive development.

The limitations of this study are related to the participant's selection that only comes from the middle economy therefore, they are not representative of all children aged 5-6 years. This



selection makes the HE concept be answered correctly by a few children. Also, the number of participants who are still small in each group tends to influence these results.

In this study, the experimental method needs to be designed in line with the actual learning situation at school. For instance, the teacher tells stories to children using various fiction and non-fiction genre titles with reasonable intensity and not for four consecutive days. There is also a need for the choice of popular genres, including comics, to determine how it differs from literary fiction while influencing ToM. Moreover, it is necessary to select the right fiction reading, which has much vocabulary that contains mental states. Kidd and Castano (2013) suspected the number of emotional vocabulary influences ToM.

It is suggested that this study needs to be conducted on children aged 5-6 or 7-8 years with upper and lower economic backgrounds. Furthermore, there needs to be an increase in the number of participants. It is also necessary to restrain other variables such as limiting children's social interactions that expose the control group to mental states. Further studies need to rigorously examine the selection of literary fiction. It is also recommended to select readings that contain more mental state vocabulary. Further studies need to include popular genres (comics) while influencing ToM. To get the right reading, it is necessary to involve other disciplines, such as linguists and literature experts in the selection process.

Acknowledgments:

The authors are grateful to the Institute for Research and Community Service (LP2M) Padang State University, West Sumatra, which has financed this study with contract number No : 996/UN35.13/LT/2022.

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