



# Case Report: The Effect of Storytelling Frequency at Home on Phonological Awareness and Empathy of Kindergarten Children with Autism

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## Abstract

The current short report aims to share findings that have been revealed in a study which examined the effect of Storytelling frequency at home on the level of phonological awareness and empathy among 30 kindergarten children aged 4 - 6 years diagnosed with autism. Results were based on a quantitative methodology using two questionnaires that were given to the kindergarten teacher and to the parents. The findings have shown a significant correlation between the frequency of reading stories at home and phonological awareness level (syllable recognition and rhyming ability). In contrast, there was no significant correlation between the frequency of storytelling at home and the level of the child's empathy. A plausible explanation for this finding might be related to the way the stories were read; A free reading style in which specific instructions or mediation strategies were not provided. According to these findings, recommendations for further research are discussed.

## Subject Areas

Educational Psychology, Teaching and Learning Technologies

## Keywords

Autism, Storytelling, Phonological Awareness, Empathy

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## 1. Introduction

### 1.1. Autism

Autism is a widespread neurodevelopmental disorder that occurs at a young age

and lasts a lifetime, characterised by difficulties in social communication, repetitive and limited behavior patterns, and atypical responses to sensory stimuli. Children with autism may express difficulties in a variety of areas, including difficulties in the development of social cognition, language comprehension, and sensory modulation (Alkshala, 2017) [1].

Autistic disorders are characterised by deficits in social skills; difficulties in understanding the point of view of others, making their social functioning more difficult. In addition, autism is characterised by deficiency in theory of mind (ToM) (Southall & Campbell, 2015) [2].

## 1.2. Reading Stories in Early Childhood and Its Contribution to the Development of Language, Cognition, and Emotions

Reading books at an early age develops cognitive abilities of the young readers; it enables them to enrich their knowledge, constructing the basis for learning processes. Exposure to different stories contributes to the development of children's generalisation and comparison abilities and enriches their conceptual system. Over time, children can analyze cognitively the stories to which they are exposed to beyond the enjoyment of the reading process itself.

Exposing the child to the language expressed in the book, both by listening to the story and by reading it, contributes greatly to the child's language abilities. The vocabulary in the books is richer than in the spoken language, as it combines both **linguistic** and **syntactic** structures, which are more complex and richer than those in the spoken language (Tov Lee & Frish, 2014) [3]. Research findings have shown that reading books predict the level of vocabulary and general knowledge even at older ages (Kaplan and Revid, 2009) [4].

Exposure to narrative discourse from infancy helps young readers to build and enrich their narrative knowledge, textual knowledge, and linguistic knowledge. All of these contribute significantly to the readers and enable them to progress in the linguistic-cognitive developmental process that they experience. Reading stories in early childhood also contributes to the child's emotional and social development; the story bridges the psychological need of social belonging, and the challenges in acting according to accepted norms and rules. Through reading and hearing stories, the child is given the opportunity to identify with the heroes of the story and to learn from them. Through this identification, the child builds up his self-image. The story enables and legitimises the performance of "as if" games in the story (Tov Lee & Frish, 2014) [3].

## 1.3. Phonological Awareness

Phonological awareness is defined as a linguistic skill that distinguishes phonological in mother tongue's structures. That is the ability to identify those **phonemic units**, individual syllables in language (Torgessen, 1996) [5]. This process is much more difficult than a speech recognition process, a task that requires one action and an immediate response (Yopp, 1988) [6]. Human attention is directed to the reception of meaning and not to the syllables that gather the word

(Adams, Forman, Lundberg & Beller, 2001) [7]. Language development influences the phonological representations, the awareness of syllables and the recognition of them in various phonemes (Ziegler & Gsowami, 2005) [8].

Phonological awareness training includes several components, such as listening (syllable/syllable sequences), rhyme, words and sentences, phonemes, etc. According to Bryant and Brydley (1985) [9] rhyming skills pave the way for written language skills. There is a significant correlation between early rhyming abilities and the development of more abstract phonological skills required for further reading (Adams, 1990) [10].

#### 1.4. Empathy

Kaniel (2013) [11] describes empathy as the ability to feel and understand the other person's world; the emotional state of mind and behavior as if it was our world, but without losing our self. In other words, empathy is a person's ability to "get into the shoes" of the other temporarily, not out of identification and full contact with him but out of understanding of his difficulties and feelings and thus provide him/her with a response of support. This is the ability to interact with other persons, to be sensitive to them without insulting or hurting them, and to be attentive to their feelings, thoughts and behaviors (Kaniel, 2013) [11]. This ability is one of the drivers of moral behavior (Thompson, Laible, & Ontai, 2003) [12].

It has been assumed that reading books enables children to experience the perspective of the other in a safe manner, without the emotional involvement required in real life. Indeed, the more children are exposed to emotional states through books, the higher their empathic ability level. In addition, the positive interaction between parent and child when reading the story enables him to gain emotional understanding. The more parents talk about emotions and mental states during reading a story, the more they contribute to their children's knowledge of emotional experiences, cultivate their emotional understanding and emotional expression, and develop their children's empathy skills (Aram & Schapira, 2012) [13].

## 2. Method

The sample included 30 kindergarten children in Israel. The children are boys, aged 4 - 6 years, diagnosed with moderate-functioning autism, based on diagnoses of clinical psychologists, relying on DSM-V definitions (APA, 2013) [14]. Two questionnaires were given to the kindergarten teacher and the pupils' parents.

The questionnaire which was given to the pupils' parents included 5 questions related to home-reading frequency, such as "How many times a week do you read a story to your child". The questionnaire which was given to the kindergarten teacher was based on the Italian version of the Empathy Questionnaire (EmQue-I13) (Grazzani, Ornaghi, Pepe, Brazzelli & Caroién Rieffe, 2015) [15].

Each question presents a social situation, and the kindergarten teacher was asked to state the child's reaction in the same situation (For example, "When the child sees other children laughing, he/she starts laughing too" (AOF-EmQue3). Other questions were related to the child's ability to identify rhymes and to name an opening syllable and a closing syllable. The questionnaire showed an acceptable reliability ( $\alpha = 0.61$ ).

Pearson correlation coefficients were calculated to examine whether there are correlations between the frequency of reading books at home and the child's level of phonological awareness and empathy.

#### *Ethics*

The rules of professional ethics were fulfilled throughout the course of the study. Throughout the study, pseudonyms were used to avoid revealing identifying details of the study participants. In addition, the interview recordings were deleted and any identifying details of the framework in which the experiment was conducted were removed.

### 3. Results

The results have shown significant positive correlations between **the frequency of storytelling at home** and 1) **the child's level of phonological awareness** ( $R = 0.30/P < 0.05$ ); and 2) **the child's ability to recognise the rhyme** ( $R = 0.37/P < 0.05$ ) (see **Table 1**). Another significant correlation was found between the frequency of storytelling at home and the child's ability to name an opening syllable ( $R = 0.37/P < 0.05$ ). No significant correlations were found between the frequency of storytelling at home and the child's ability to name a closing syllable and between the frequency of storytelling at home and the child's level of empathy.

### 4. Conclusion

The current study aimed to examine the effect of Storytelling frequency at home on the level of phonological awareness and empathy among 30 kindergarten children diagnosed with autism. *Phonological awareness* has been divided in this

**Table 1.** Pearson correlations between the frequency of reading books at home and the level of phonological awareness and empathy.

	Frequency of storytelling at home	
	r	Sig.
<i>Phonological awareness</i>	0.30	0.049*
<i>Recognising rhyme</i>	0.37	0.047*
<i>Naming an opening syllable</i>	0.37	0.046*
<i>Naming a closing syllable</i>	0.18	0.885
<i>Empathy</i>	0.10	0.572

$p < 0.001^{***}$ ,  $p < 0.01^{**}$ ,  $p < 0.05^*$ .

study into three components: A rhyme, an opening syllable, and a closing syllable. Considering the three components together, a significant correlation was found between the frequency of story reading and these phonological abilities. According to the literature review, phonological awareness is defined as a language related to the phonological structure of the native language (Adams, Forman, Lundberg & Beller, 2001) [7].

While referring to reading stories' contributions to the development of phonological awareness in children, studies have shown positive effects of reading in early childhood literacy abilities such as spoken language skills and vocabulary expansion (Tov Lee & Frish, 2014) [3]. In a previous study that examined the relationship between the frequency of book reading, reading style and the way children choose their books, it has been found that the frequency of reading strengthens the child's linguistic ability (Aviram & Aram, 2004) [16].

*The ability to understand social situations and to respond in an accurate way is a central challenge for children on the autistic spectrum. With reference to the literature review, through the story, children are exposed to a variety of social skills and different accepted modes of action when interacting with the peer group (Aram & Sabag-Shushan, 2013) [17]. As parents engage in more conversations about emotions and mental states during storytelling, they contribute to their children's understanding of emotional experiences and to their empathy skills (Schapira & Aram, 2009) [18].*

In the current study's findings, the correlation between the frequency of reading books and the child's empathic ability was found insignificant. This finding might be explained by a few possible reasons: 1) Research findings in the professional literature as mentioned in the previous chapter were not refer to children with autism; 2) In the current study, the frequency of reading books was examined while other dimensions, such as **mediation**, were not tested; The way the parent reads the child a story (sequential reading, dialogical reading accompanied by emotional discourse, etc.). Suggestion for further research would also address **the way the story is read at home with reference to empathy expressions**.

Suggestions for further research would address other variables, such as literary characteristics and forms (a song/a story), sentences' length, illustrations, mediation, and varied empathy measurement tools.

## Conflicts of Interest

The author declares no conflicts of interest.

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