

## The effectiveness of storytelling in enhancing empathy in bilingual kindergarten students

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<b>Keyword :</b> Language; empathy; storytelling; students; kindergarten; experiment.	<b>Abstract</b> The primary objective of this research was to investigate the influence of storytelling as a pedagogical approach on the development of empathy in a group of bilingual kindergarten students. To achieve this, an experimental research design was employed, utilizing a one-group pretest-posttest comparative methodology. The study involved 12 bilingual kindergarten students; all of them were part of the experimental group. An initial examination of descriptive statistical data revealed that the average pretest score was 43.08, which increased to 45.00 in the post-test, indicating a notable improvement in the student's scores. Further statistical analysis, specifically the Wilcoxon test, confirmed the significance of the impact of storytelling on the students' empathy levels. The test resulted in a significance value of $p = 0.002$ ( $p < 0.01$ ), providing compelling evidence that storytelling as a teaching method had a substantial and positive effect on enhancing empathy in bilingual kindergarten students. These findings suggest that incorporating storytelling into the curriculum can be a valuable tool in nurturing empathy in young learners, with potential implications for enhancing their social and emotional development.		
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### INTRODUCTION

In the age of technology, it has been discovered that meaningful storytelling can drastically increase empathy. According to Shushkevich & Cardiff (2019), to learn how to make meaningful connections and achieve our goals, it is crucial to understand how stories can act as a bridge between people. The importance of words serves as the foundation upon which we attempt to comprehend others, especially their emotions, through stories as explained by Hardy (2017). By keeping this concept in mind, we can start designing better conversations that will lead to better relationships.

Empathy is an important ability that allows individuals to understand and feel the emotions and thoughts of others. It plays a significant role in social functioning by promoting prosocial behavior, improving interpersonal relationships, and even influencing the number of friends one has. Thus, it is worth exploring whether interventions targeted at improving empathy can have a positive impact on social functioning. Previous research has shown that empathy can be "trained" through targeted interventions, as evidenced by two areas of literature. In the context of Indonesian kindergartens, it is important to consider the cultural and societal factors that may influence the development of empathy in children. Research on the benefits of sign-supported materials in Indonesian kindergartens highlights the importance of proactive approaches to facilitate

inclusive practices Rofiah et al. (2021). Moreover, the role of educators, particularly kindergarten teachers, is crucial in promoting empathy among children. It has been suggested that changing kindergarten teachers' mindsets toward children can help overcome compassion fatigue and enhance their motivation for empathy Chen et al., (2023). Additionally, empathy should be an essential component of early childhood teacher education programs to build relationships between teachers and families, especially in the context of vulnerability and disadvantage Roberts, (2017).

This research offers a significant advantage for children's education in Indonesia, particularly among bilingual kindergarten students. In the realm of education, storytelling emerges as a potent tool for nurturing children's social and emotional competencies. Therefore, there is a pressing need for educational innovation to foster holistic development in children. Drawing from this research's findings, it is recommended that kindergarten educators integrate storytelling techniques into their teaching practices to bolster students' empathy skills effectively. Future studies could benefit from expanding sample sizes and intervention durations to ensure more precise comparisons. While prior research, such as "Effectiveness of Listening to Quranic Recitations on Decreasing Depression Levels in the Elderly" Amanah & Esterlita Purnamasari (2015) underscores the positive impact of auditory experiences on mental health, this study delves into storytelling's potential to cultivate empathy and social adeptness in bilingual kindergarten students.

There is a pressing need for ongoing innovation and expansion of learning methodologies to facilitate holistic development in children. Future research endeavors should aim to broaden sample sizes and intervention durations to ensure more robust comparative analyses. Furthermore, building upon the success of methodologies such as the "Effectiveness of Glass Analysis Method to Improve Early Reading Skills in Children with Reading Difficulties in Grade III Elementary School" Komarudin & Widyana (2016), This study proposes that exposure to diverse narratives can also enrich children's ability to interpret social-emotional cues. By immersing themselves in stories encompassing varied perspectives and values, children can cultivate a deeper understanding of human emotions and experiences, thereby fostering empathy and strengthening social connections. Consequently, the present study seeks to evaluate the efficacy of storytelling as an innovative approach to nurturing empathy development within the unique context of a bilingual kindergarten classroom, while also exploring the distinctions between the two research methodologies.

In Ong (2021) study, the implementation of a bilingual curriculum in early childhood education is explored. This approach involves using two languages to teach young children, which allows them to learn their mother tongue and an additional language. Learning a second language is not only about linguistic understanding, but also involves mastering its didactics, as highlighted by Rojas et al. (2023). This trend is rapidly growing due to its positive outcomes, including better proficiency in both languages and a richer understanding of other cultures and environments Temiz (2019). However, despite the many benefits, several challenges need to be addressed for successful implementation.

Bilingual learning has many benefits, but it can also affect the development of empathy in kindergarten children. Studies conducted by Burns et al. (2019) indicate that bilingual children may have difficulty understanding the thoughts and feelings of others as they mainly focus on learning new language and

vocabularies. Additionally, according to Ziff et al. (2017), the use of a second language may make children more defensive and less likely to show empathy toward others.

The findings from research by Jensen & Pedersen (2017) showed that increased empathy can help students make better decisions, including in social situations and interactions with others, which contributes to their development as caring and thoughtful individuals in deciding their actions in everyday life. Experimental research in laboratory settings has provided preliminary evidence that increased empathy is a possibility, although only in the short term Jospe et al. (2020). One method that has been used is to ask individuals (perceivers) to take the point of view of another individual (target), which often has a positive impact on the level of empathy towards that target, Li & Edwards (2021). In addition, such techniques have also been shown to encourage prosocial actions, such as motivation to help stigmatized individuals and members of groups that feel excluded Zaki & Cikara (2015).

Numerous studies have shown that storytelling can have a crucial role in enhancing empathy. Petty (2021) suggested that stories can help people connect emotionally with others. According to Ihamäki & Heljakka (2021), stories are more effective than facts alone in eliciting an emotional response from the listener. Hagarayu (2022) found that storytelling activities can enhance empathy in children aged 5-6 years, while Temiz (2019) demonstrated that storytelling interventions can improve the narrative skills of bilingual children. Ayuni et al. (2013) explored the effect of storytelling on empathy in second-grade students, while Banerjee et al. (2021) suggested that introducing empathy through storytelling in bilingual kindergarten students can help them better understand other individuals' emotional experiences.

While several studies have supported the effectiveness of storytelling in enhancing empathy in bilingual kindergarten students, there is limited research exploring narrative genres in this context. Previous research by Pérez-Rosas et al. (2017), Khanpour et al. (2017), Otterbacher et al. (2017), Sharma et al. (2021), Hosseini & Caragea (2021), Buechel et al. (2018), and Wambsganss et al. (2021) have found that storytelling can be effective in promoting empathy in bilingual kindergarten students. However, there is limited research on the effectiveness of storytelling to increase empathy in a clinical case. A study conducted by Kagawa et al. (2023) found an increase in empathy in health students in Japan after listening to storytelling.

Research suggests that storytelling activities hold significant potential for fostering social-emotional development, particularly empathy, in young children (Kurki, 2017; Westlund, 2019). This is especially relevant for bilingual kindergarten students who navigate diverse social and emotional landscapes. By engaging with fictional narratives, children gain a safe space to explore and understand complex emotions (Kurki, 2017). As Westlund (2019) noted, key elements within storytelling, such as character engagement and emotional exploration, align with research on social-emotional learning.

Picture books, as highlighted by Westlund (2017), serve as ideal tools for introducing young children to a range of emotions in an accessible and engaging format. Through story enactment which allows children to actively participate in recreating the narrative, they gain firsthand experience in recognizing, expressing, and responding to various emotions and social situations. This active engagement fosters empathy development as children learn to step into the shoes of different characters and understand their perspectives (Bateman, 2020).

The opportunity to practice and rehearse appropriate emotional responses within the safe confines of the story world further strengthens their social-emotional competency.

Therefore, incorporating storytelling, particularly through enactment and engagement with picture books, into the bilingual kindergarten curriculum presents a promising approach to cultivating empathy and enhancing social-emotional development in these young learners.

In research study developed by Radjack et al. (2020) emphasized the importance of pre-school teachers' competence to convey empathy through stories by creating a fun and supportive classroom atmosphere where students can learn effectively and have positive experiences at school. This research design was a highly context-based experiment, where interventions and methods can differ drastically from the problem under study Gray et al. (2022). Based on previous experimental research used to test the abovementioned relevant theories, the purpose of this study was to prove the effectiveness of storytelling during the teaching and learning process to increase empathy in a bilingual kindergarten.

## **METHOD**

This study aimed to test the theory that storytelling can increase empathy. To do so, experimental research methods were used. The study adopted a single-group pre-posttest comparative design in which measurements were taken before (pretest) and after (posttest) treatment was given to one experimental group. The experimental group was exposed to storytelling treatment by listening to two different stories face-to-face at different times on separate days, located at TK Rising Star School Yogyakarta. On April 4, 2023, the first story entitled "Monkey and Elephant" was read, and on April 6, 2023, the second story entitled "Bekal Jojo" was read.

As part of the research project, the Rising Star School Yogyakarta selected 12 kindergarten students (4 male and 8 female) as participants. To measure empathy in children, the researchers used the Empathy Questionnaire (EmQue) adapted from a questionnaire developed by Rieffe et al. in 2010. The study measured three key dimensions of empathy: emotional contagion, attention to others' feelings, and prosocial actions. Inter-factor correlations confirmed the interrelatedness of these dimensions (Emotional Contagion x Attention to Others' Feelings:  $r = .29, p < .01$ ; Emotional Contagion x Prosocial Actions:  $r = .24, p < .01$ ; Prosocial Actions x Attention to Others' Feelings:  $r = .40, p < .01$ ), supporting the conceptualization of empathy as a multi-faceted construct. Analysis of the relationship between age and empathy revealed significant positive correlations with both prosocial actions ( $r = .54, p < .01$ ) and attention to others' feelings ( $r = .17, p < .05$ ), suggesting developmental advancements in these domains across the age range of 12 to 60 months. Notably, emotional contagion did not demonstrate a significant correlation with age ( $r = .04, p > .05$ ). Further investigation into age-related differences revealed varying predictive roles in recognizing and understanding others' emotions, highlighting the nuanced development of empathic abilities in early childhood. This understanding of empathy development provides a foundation for exploring the potential of storytelling interventions in fostering empathy among bilingual kindergarten students.

As the participants were children, the parents/guardians of the students were asked to fill out an informed consent form explaining the research process and ensuring the confidentiality of their children's data. Before the commencement of the experiment, a preliminary test was conducted by administering the empathy scale to the teacher. This was deemed necessary due to the possibility that the kindergarten children might not be able to complete the scale accurately. Following the completion of the preliminary test, the experimental and control groups were then determined based on the results obtained. Those with low scores were included in the experimental group. A few days after the experiment was conducted, a posttest was conducted by administering the empathy scale to the teacher again. The objective of this evaluation was to ascertain the impact of the experiment on the level of empathy of the kindergarten children.

The experimental and control groups were selected based on the screening results and then both were given a pretest. This aimed to find out the initial state of the subjects before given treatment.

**Table 1.** Experimental Group

Group	Pretest	Treatment	Posttest
Experiment	Q1	X	Q2
Control	Q2	-	Q4

Q1 = Empathy score at pretest EG  
 Q2 = Empathy score at posttest EG  
 Q3 = Empathy score at pretest CG  
 Q4 = Empathy score at posttest CG  
 X = Storytelling treatment on GE

Given the focus on empathy development, the study employed a more suitable approach. To assess the effectiveness of the storytelling intervention in enhancing empathy among bilingual kindergarten students, a Wilcoxon Signed-Rank Test was conducted. This non-parametric test was chosen due to the ordinal nature of the empathy data collected through the EmQue and the relatively small sample size that this study had. The analysis compared pre- and post-intervention empathy scores to identify whether or not statistically significant differences were found. In particular, it sought to determine whether empathy scores increased following the storytelling intervention. A significant increase in the post-intervention scores would support the hypothesis that storytelling effectively enhances empathy in bilingual kindergarten students.

**RESULTS AND DISCUSSION**

The data were analyzed using SPSS 25 following the results of the hypothesis testing using descriptive statistical analysis.

**Table 2.** Descriptive Statistical Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	12	35	51	43.08	4.461
Posttest	12	36	54	45.00	4.862

The classroom setting provides an opportunity for students to develop empathy, which is crucial in overcoming language and meaning-related challenges, as outlined by Nguyen et al. (2018). The descriptive

statistics table indicates that the average pre-test and post-test scores were 43.08 and 45.00, respectively, evidencing an increase in the average score following the treatment. This finding aligns with prior research conducted by Guillén (2020). These results suggested that bilingual kindergarten students who partook in storytelling activities experienced heightened levels of empathy. Therefore, it can be concluded that storytelling activities has a positive impact on the development of empathy in students. Such activities can significantly improve students' ability to understand and relate to the experiences of others, which is an essential component of effective communication and professional relationships.

Two studies conducted by Nearchou et al. (2018) and Adamson et al. (2018) investigated a storytelling approach to enhance empathy skills in bilingual kindergarten students. They used an immersive storytelling method, which has been suggested by prior research to provide students with a better understanding of the cultural and emotional experiences of others. The results indicated that this activity was effective in improving empathy skills among bilingual students.

**Table 3. Wilcoxon Signed-Rank Test**

<b>Ranks</b>		<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>
Posttest - Pretest	Negative Ranks	0 <sup>a</sup>	.00	.00
	Positive Ranks	12 <sup>b</sup>	6.50	78.00
	Ties	0 <sup>c</sup>		
	Total	12		

According to the data provided in the table above, all 12 research participants experienced an increase in empathy after attending the storytelling session, resulting in 12 positive data points (N). The increase in empathy reached a value of 6.5, with the number of positive ratings reaching 78.00. In the context of this study, empathy is defined by Bacca-Acosta et al. (2023) as a capacity that allows individuals to connect with other people's experiences at a deeper level. Huayamave (2018) highlighted the importance of empathic communication in the horizontal communication process and emphasized that teachers have a significant role in facilitating the growth of students' empathy through communication that aims at developing interpersonal relationships.

**Table 4. Z-Score Test**

	<b>Posttest – Pretest</b>
Z	-3.108 <sup>b</sup>
Asymp. Sig. (2-tailed)	.002

According to the data analysis, the Z value was -3.108, with an Asymp. Sig (2-tailed) of 0.002. This means that  $p < 0.05$ , or in other words,  $p = 0.002$ . These findings indicated a significant difference between the level of empathy before and after the bilingual kindergarten students participated in the storytelling activities, which suggests that storytelling positively influences the level of empathy in this group. This conclusion is supported by empirical models showing that individuals who use positive coping strategies, such as asking for help, have better ability to manage empathic stress, better empathy, and better prosocial actions. The study makes a valuable contribution to our understanding of the role of storytelling in second language

learning and empathy development in bilingual preschool-aged children, as demonstrated by (Burgess et al., 2022).

**Table 5.** Pre-Test and Post-Test Result and Categorisation

<b>Participants</b>	<b>Pretest Score</b>	<b>Posttest Score</b>	<b>Category</b>
P1	41	44	Moderate
P2	36	37	Low
P3	42	44	Moderate
P4	47	48	Moderate
P5	43	44	Moderate
P6	45	48	Moderate
P7	43	47	Moderate
P8	47	48	Moderate
P9	35	36	Low
P10	43	45	Moderate
P11	51	54	High
P12	44	45	Medium

The students' post-test results were categorized after calculated based on the predetermined criteria. The results of this calculation helped classify the students into three categories: low, moderate, and high, based on their post-test scores and measure the extent of the impact of storytelling activities on the students' empathy and understanding. The findings from the study by Powell (2020) provide relevant context, suggesting that engaging students in fictional situations where they interact with characters and experience prosocial situations can be an effective method of enhancing their empathy, which is in line with the aim of our experimental study to strengthen the bilingual kindergarten students' empathy through the storytelling approach. According to research by Aue et al. (2021), cognitive empathy is described as more important for students. This concept of cognitive empathy can be connected to our research, as through the storytelling approach, the bilingual kindergarten students can develop a deeper understanding of others' feelings and perspectives, which in turn can enhance their ability to empathize in everyday situations.

Based on the pretest categorization results, there were 2 (two) participants in the low category, 9 (nine) participants in the moderate category, and 1 (one) participant in the high category. Based on the study of the accuracy of empathy in the design of (Chang-Arana et al., 2020) seems to support the theory and concept empathy in psychology, as well as proposing the measurement method of this experiment. Then based on the categorization of the level of empathy after the treatment (posttest), the same categories were found, namely there were 2 (two) participants in the low category, 9 (nine) participants in the moderate category, and 1 (one) participant in the high category. According to Neshor Shoshan & Wehrt (2021), the long duration of storytelling will also cause students to be less than optimal in capturing the meanings that exist as a stimulus for their empathy. Students need to expend effort on the cognitive side, as well as creativity because they have to engage emotionally and cognitively with fictional characters, thus leading to increased creativity and understanding of empathy as a form of cognitive behaviour Kokkola & Rydström (2022).

**Table 6.** Pre-Test Result

Low	$X < M - SD$ $X < 43.08 - 4.461$ $X < 38.6$
Moderate	$M - 1SD \leq X < M + 1SD$ $43.08 - 4.461 \leq X < 43.08 + 4.461$ $38.6 \leq X < 47.5$
High	$M + 1SD \leq X$ $43.08 + 4.461 \leq X$ $47.5 \leq X$

Based on the study findings, some students (with empathic understanding levels ranging from 38.6 to 47.5) already possessed a moderate level of empathic understanding before participating in the storytelling activity. Meanwhile, the others (with levels below 38.6) were still at a lower level of empathic understanding. However, a noteworthy number of students (with levels above 47.5) already displayed a high level of empathic understanding beforehand. Empathy-based methods generally aim to cultivate an understanding of empathy, as studied by Surma-aho & Hölttä-Otto (2022). This understanding typically stems from cognitive principles and can be derived from personal experiences, including those involving embodiment, or projected user experiences.

According to a study conducted by Guasp Coll et al. (2020), certain psychological traits can impact an individual's relationship with nature and inspire them to take part in environmental conservation efforts. The objective of this research was to employ a storytelling technique to raise empathy levels among bilingual kindergarten students. This method can aid students in forging a stronger bond with nature and motivating them to engage in activities that promote environmental stewardship, as indicated by the findings of Dobbins (2022). These findings offer a preliminary understanding of the empathy levels of bilingual pre-schoolers and establish a framework for developing and assessing the efficacy of listening and storytelling exercises to enhance empathy at all stages of comprehension, including those requiring significant improvement. Finally, categorization was carried out for each participant.

**Table 7.** Post-Test Result

Low	$X < M - SD$ $X < 45.00 - 4.862$ $X < 40.1$
Moderate	$M - 1SD \leq X < M + 1SD$ $45.00 - 4.862 \leq X < 45.00 + 4.862$ $40.1 \leq X < 49.9$
High	$M + 1SD \leq X$ $45.00 + 4.862 \leq X$ $49.9 \leq X$

The findings from Table 3.2 reveal the extent to which the students' empathy levels have improved following their participation in the storytelling activities. The results were divided into three categories: low, moderate, and high. Most students displayed a moderate level of empathic understanding (a score between 40.1 and 49.9) post-activity, signifying a significant increase in empathy. Bratitsis (2016) highlighted that



storytelling is a powerful tool to instil moral and ethical values in children and can be a valuable resource. Nonetheless, some students (with a score less than 40.1) still exhibited a low level of empathy even after engaging in the activity, while the others (with a score above 49.9) demonstrated a high level of empathy and understanding. Therefore, the post-test outcome indicated that storytelling activities were effective in enhancing the students' understanding of empathy, particularly in groups that initially had a moderate or high level of understanding.

Smirnov et al. (2019) studied how the synchronization of feelings of storytellers and listeners is reflected in brain activity using a pseudo-hyperscanning approach. This illustrates the effectiveness of this activity in increasing empathy in bilingual preschool students, as well as highlighting the importance of designing appropriate learning strategies for students with lower levels of empathic understanding through cultural products that include oral stories, stage plays, novels, films, and other narratives common today. Empathy is filtered, modified, and enhanced by Smith et al. (2020). After the researchers had obtained the criteria according to the calculation results, the next step is to categorize each participant.

## **CONCLUSION**

The results of the data analysis indicate that the proposed hypothesis has been validated. Specifically, the hypothesis posits that storytelling can effectively enhance empathy in bilingual kindergarten students. Following this objective, the current experimental study seeks to enhance empathy levels in bilingual kindergarten students by focusing on the power of storytelling. Based on the data analysis results, the mean score had increased from the pretest to the posttest, resulting in a statistically significant difference between the two sets of results. It was observed that a small number of research participants exhibited an increase in empathy following the storytelling activities.

This research has positive implications for early-childhood education in Indonesia, especially for bilingual kindergarten students. In education, storytelling can be an effective method for improving children's social and emotional skills. Therefore, education should continue to innovate and expand learning methods that can help children develop holistically. Based on the results of this study, it is recommended that kindergarten teachers integrate storytelling method into learning activities to improve students' empathy skills. Future researchers are expected to expand the number of samples and duration of intervention to get more accurate results.

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