

DEVELOPMENT OF COGNITIVE GUIDANCE MODEL USING PICTURE STORYBOOK MEDIA TO DEVELOP SOCIAL COGNITION IN CHILDREN AGED 5-6 YEARS AT KYOMOON GRACE KINDERGARTEN

Putri Tania Natalia^{1*a}, Kadek Suranata^{2b}, Dewi Arum Widhiyanti Metra Putri^{3c}

Faculty of Education, Universitas Pendidikan Ganesha, Indonesia

^aE-mail: nathaniapasaribu24@gmail.com

^bE-mail: kadek.suranata@undiksha.ac.id

^cE-mail: arum-widhiyanti@undiksha.ac.id

(*) Corresponding Author

nathaniapasaribu24@gmail.com

ARTICLE HISTORY

Received : 20-05-2026

Revised : 07-06-2026

Accepted : 30-06-2026

KEYWORDS

Early Childhood
Education, Social
Cognitive, Picture
Storybooks

ABSTRACT

Early Childhood Education (PAUD) plays a vital role in supporting children's cognitive, emotional, and social development. At the age of 5–6 years, children begin to distinguish appropriate and inappropriate behaviors, understand rules, share, and show empathy. Social cognitive development refers to children's ability to understand, process, and respond to social interactions. This study aimed to examine the effectiveness of a cognitive guidance model using picture storybooks in developing social cognitive skills among children aged 5–6 years. The study employed a quantitative approach using a Single Subject Design (SSD) with a Multiple Baseline Across Subjects model, consisting of baseline and intervention phases. The research was conducted at KYOMOON GRACE Kindergarten involving five children aged 5–6 years who demonstrated the greatest need for social cognitive development based on initial observations and pre-test results. Data were collected through pre-tests, post-tests, observation rubrics, and interviews. The findings revealed that the picture storybook product achieved a feasibility score of 95%. The intervention was highly effective, as indicated by the non-overlapping data percentage, with average scores increasing from 56.8 (pre-test) to 114.0 (post-test). The greatest improvement was observed in the sharing/taking turns indicator. These findings suggest that picture storybooks effectively enhance young children's social cognitive skills.

This is an open access article under the CC-BY-SA license.



INTRODUCTION

In accordance with government regulations that support Early Childhood Education as part of human resource development, PAUD itself is essentially designed to facilitate the development of various aspects in children,

including thinking skills, motor skills, and social interactions (Taufiqurokhman et al., 2023). In the age range of 5-6 years, children are in a developmental phase where they begin to be able to distinguish between desirable and undesirable behaviors, as well as show the ability to understand simple rules, share, and empathize (Sulaiman et al., 2021). Based on data from the Ministry of Education, Culture, Research, and Technology of Indonesia, in 2022 approximately 8.1 million early childhood children have been registered in PAUD institutions, but only 56% of PAUD institutions meet national education standards, which includes the provision of teaching materials that support the cognitive and emotional development of children (Kemendikbud, 2023).

Social cognition is the child's ability to understand, process, and respond to social relationships around them (Ningsih, 2023). According to (Yanuardianto, 2019), social cognitive theory is a theory that highlights the idea that most human learning occurs in a social environment. According to the Social Learning theory from Albert Bandura (1986) in (Nabavi, 2012), the development of a child's social cognition occurs through the process of observation and imitation. According to Jean Piaget (1932) in (McLeod, 2024), the ability to share only begins to develop when children begin to understand the perspectives of others. According to Erik Erikson (1963) in (Erskine, 2019), empathy grows when children feel cared for and valued, which helps them recognize the emotions and needs of others. Lev Vygotsky (1978) emphasized the important role of scaffolding, which is support provided by adults or more skilled peers to help children learn new skills, including working together. Social cognition is one of the important foundations in the formation of a child's character (Rohmalimna et al., 2022). According to Santrock (2011) in (Cardona, 2021), strong social skills at an early age are an important predictor of a child's success at the next level of education. Playing with peers in the school or home environment is a natural way for children to practice their social skills (Zosh et al., 2020).

A report published by UNICEF in 2021 noted that children aged 5-6 years who are exposed to interactive visual media, such as picture storybooks, show a 27% increase in cognitive abilities and social understanding compared to children who only rely on conventional learning (Adeyemi, 2025). According to (Nazhifa et al., 2023) who explains that picture storybook media can increase children's imagination through images that are artistic in nature. Based on the theory of cognitive development by Jean Piaget (as cited in Ibda, 2015), it states that children aged 2-7 years are in the preoperational stage, where they learn better through symbols and visualization rather than abstraction. According to (Billa et al., 2023) a picture book is a product that combines design, illustration and text, and is also a document that reflects social, cultural, historical aspects and experiences for children. Adipta et al., (2016) explained that picture storybooks are books with easily understood language, perfected with attractive picture illustrations, allowing children to understand cause-and-effect relationships, distinguish characters, and separate reality from fantasy (Billa et al., 2023).

The use of picture storybook media has proven effective in helping children understand social concepts, because interesting stories and illustrations can convey moral messages in a way that is easy to understand (Hidayati, 2022). Research conducted by (Halim & Munthe, 2019) found that visual media, such as picture storybooks, can help increase children's understanding of positive values. In line with that, (Ratnasari & Zubaidah, 2019) in their research showed that picture storybooks can increase children's understanding of positive values, as well as help reduce excessive competitive behavior through an approach that involves narrative stories and visual images.

METHOD

The type of research used in this study is Research and Development (R&D), using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. The implementation stage is carried out using an experimental research method, namely Single Subject Design (SSD), specifically the Multiple Baseline Across Subjects model. The main key in the Multiple Baseline Across Subjects Design is that the Intervention Phase is not

given simultaneously to the 5 subjects. The new intervention will be given to the next subject after there is a positive and stable behavioral change in the previous subject.

This research was conducted at TK KYOMOON GRACE. The subjects of this study were children registered at TK KYOMOON GRACE in the 2024/2025 academic year. The determination of the subjects uses a purposive sampling technique, where the subjects are selected based on the criteria: children aged 5-6 years (late preoperational), obtained permission from parents, and actively participated in learning activities. This research was conducted on 5 subjects who were identified as having lacking Social Cognition. The variables of this research are the Cognitive Guidance Model with Picture Storybook Media as the independent variable and the Child's Social Cognitive Development as the dependent variable.

According to (Sugiyono, 2017), data collection techniques are the most strategic step in research, because the main goal of research is to obtain data. The data collection techniques used in this study include Observation, Tests (Pretest and Posttest), and Interviews. The data collection instruments were designed in accordance with the development research approach using the ADDIE model combined with the Single-Subject Research (SSR) design, specifically multiple baseline across participants. The main instrument in this study is the Children's Social Cognitive behavior observation sheet which uses a rubric-shaped rating scale with four categories (1–4). The second instrument is a validation sheet given to experts, namely PAUD experts, counseling guidance experts, and learning media experts in the form of a questionnaire with a Likert scale of 1-4.

The Data Analysis Technique used in this research is Quantitative Descriptive Analysis. Expert validation is carried out to assess the feasibility of the product from the aspects of content, language, presentation, and graphics before the product is implemented to research subjects (Borg & Gall, 2003 in Sugiyono, 2019). Hypothesis Testing uses Percentage of Non-Overlapping Data. Data analysis of children's social cognitive observation results based on a single subject design was carried out with visual graph analysis and simple calculations such as Percentage of Non-overlapping Data (PND).

RESULTS AND DISCUSSION

Based on the initial observations conducted in January 2025, it showed that out of 5 Kindergarten B students, there were a number of problems related to children's social cognitive development. From the needs analysis results, researchers concluded that a cognitive guidance model integrated with picture storybook media is needed as an innovative solution to support the social cognitive development of children aged 5–6 years. This approach is in line with Bandura's (1986) social learning theory which emphasizes the importance of observation, modeling, and reinforcement in the children's learning process (Nabavi, 2023).

The design of the picture storybook was created by paying attention to the developmental characteristics of 5-6 year old children who are in the preoperational stage according to Jean Piaget (1952), where children more easily understand concepts through symbols and visualization rather than verbal abstraction (Ibda, 2015). During implementation, the teacher reads the picture storybook to the children, followed by guided discussion using questioning techniques that have been designed in the teacher's guide. This approach aligns with Vygotsky's (1978) view on the Zone of Proximal Development (ZPD), where interaction between the teacher and child in a structured context can push children's cognitive and social development more optimally (Gilang, 2023).

Table 1. Results of Practicality Test by TK B Teachers

No.	Practicality Aspect	T1	T2	T3	Average	Category
1	Guidance guide is easy to understand	4	4	3	3.67	Very Practical
2	Guidance session flow is clear and structured	4	3	4	3.67	Very Practical

3	Session time (30 minutes) matches children's ability	3	4	4	3.67	Very Practical
4	Storybook attracts children's attention	4	4	3	3.67	Very Practical
5	Teacher's instructions are easy to implement	4	3	4	3.67	Very Practical
6	Observation rubric is easy to fill out during activities	4	4	3	3.67	Very Practical
7	Questioning techniques in the guide are effective	3	4	4	3.67	Very Practical
8	Children are enthusiastic during guidance sessions	4	3	4	3.67	Very Practical
9	Story is relevant to children's lives	4	4	3	3.67	Very Practical
10	Model can be implemented without special training	3	4	4	3.67	Very Practical
11	Guidance material is appropriate for Kindergarten B age	4	3	4	3.67	Very Practical
12	Product is useful for classroom learning	4	4	3	3.67	Very Practical
Overall Average		45	44	43	3.67	Very Practical

All 12 practicality aspects assessed by three teachers obtained an average score of 3.67 out of a maximum score of 4, or equivalent to a percentage of 91.7%. This value is in the "Very Practical" category, indicating that the cognitive guidance model based on picture storybooks can be implemented easily by teachers without requiring special training.

Table 2. Results of Practicality Test by Subject Parents

No	Name	P1	P2	P3	P4	P5	Total	% Score
1	Parents of BM	4	4	3	4	3	18	90%
2	Parents of DS	3	4	3	3	4	17	85%
3	Parents of AM	4	3	3	4	4	18	90%
4	Parents of JS	4	4	4	4	4	20	100%
5	Parents of SS	4	4	4	4	4	20	100%
AVERAGE PARENT RESPONSES		Very Practical					18.60	93.0%

In addition to teacher assessments, parents' responses gathered through a questionnaire showed an average score of 18.6 out of a maximum score of 20, or equivalent to 93%, with the "Very Practical" category. The results of the Percentage of Non-Overlapping Data (PND) analysis for all data of the 5 subjects in the Intervention Phase were above the highest score in the Baseline Phase. The obtained PND value was 100%, thus falling into the Very Effective Category for Children's Social Cognitive development.

Table 3. Descriptive Statistics of Pretest and Posttest Scores of Children's Social Cognition

Parameter	Pretest	Posttest
Number of Subjects (N)	5	5
Mean (Average)	56.8	114.00
Median	57.00	114.00
Std. Deviation (SD)	1.70	4.10
Variance	3.00	17.00
Minimum Score	54	107
Maximum Score	59	119
Range	5	12

An increase is seen in all descriptive statistical indicators from pretest to posttest. The average score of children's social cognition increased from 56.8 during the pretest to 114.0 during the posttest. The average difference between the pretest and posttest is 15.65 points or equivalent to an increase of 9.78 percentage points. The standard deviation which decreased from 32.13 to 27.82 indicates that the distribution of scores on the posttest is more homogeneous compared to the pretest, meaning there is a better equitable distribution of development among all children after the guidance intervention is implemented.

Table 4. Individual Pretest and Posttest Categories

No	Subject	Pre-test Score	Description	Post-test Score	Description	Change	Status
1	BM	59	Poor	107	Good	+48	Increased
2	DS	57	Poor	114	Good	+57	Increased
3	AM	54	Poor	117	Good	+63	Increased
4	JS	58	Poor	113	Good	+55	Increased
5	SS	56	Poor	119	Good	+63	Increased

The Individual Pretest and Posttest Categories for the 5 subjects are shown. Subject 1 (BM) obtained a Pre-test Score of 59 with the Poor Category, after the Intervention obtained a Post-test Score of 107 so it increased by +48. Subject 2 (DS) obtained a Pre-test Score of 57 with the Poor Category, after the Intervention obtained a Post-test Score of 114 so it increased by +57. Subject 3 (AM) obtained a Pre-test Score of 54 with the Poor Category, after the Intervention obtained a Post-test Score of 117 so it increased by +63. Subject 4 (JS) obtained a Pre-test Score of 58 with the Poor Category, after the Intervention obtained a Post-test Score of 113 so it increased by +55. Subject 5 (SS) obtained a Pre-test Score of 56 with the Poor Category, after the Intervention obtained a Post-test Score of 107 so it increased by +63.

Table 5. Average Score per Social Cognitive Indicator

No.	Social Cognitive Indicator	Pre (Average)	Post (Average)	Difference	% Post	Post Category
1	Sharing / Taking Turns	11	23.6	+12.6	73.75%	Good
2	Empathy / Prosocial Response	12.4	24.2	+11.8	75.63%	Good
3	Cooperation	11.4	22.6	+11.2	70.63%	Good
4	Rule Compliance	10.2	21.2	+11	66.26%	Fair
5	Social Problem Solving	11.8	22.4	+10.6	70.01%	Good
Total Average			11.36	22.8	11.44	72.60%

The highest increase occurred in the Sharing/Taking Turns indicator with a difference of +12.60 points (from 11.0 to 23.60), followed by the Empathy/Prosocial Response indicator with a difference of +11.80 points (from 12.40 to 24.20). Both of these indicators reached the "Good" category on the posttest. The Cooperation indicator increased by +11.40 points, and Rule Compliance increased by +11.0 points. Meanwhile, the Social Problem Solving indicator experienced a small decrease of +10.60 points, which is likely caused by group dynamics and quite high individual variability in this aspect.

The results of validation by three experts showed that the cognitive guidance model based on picture storybooks developed in this study obtained an average feasibility percentage of 95%, which is in the "Very Feasible" category. This finding indicates that the developed product has a high conformity between the content of the material and the guidance objectives, media design and early childhood characteristics, as well as implementation guidelines and applicable counseling guidance principles. This high feasibility percentage cannot be separated from the suitability between the story content and the cognitive developmental stages of children aged 5–6 years. In accordance with Jean Piaget's theory of cognitive development, children in this age range are in the preoperational stage, where they more easily understand concepts through symbols and visualization rather than verbal abstraction (Ibda, 2015). Therefore,

the use of picture storybooks as a guidance medium is very appropriate because it combines simple narratives with attractive visual illustrations, thus allowing children to understand social values through the experiences of characters in the story (Sari & Fitrisia, 2022). This is in line with the findings of Halim and Munthe (2019) who concluded that picture storybooks developed by paying attention to character values and children's developmental stages can achieve very high validity.

The results of the practicality test involving three teachers and 5 parents showed that the cognitive guidance model based on picture storybooks is in the "Very Practical" category with a percentage of 91.7% for teacher assessments and 93% for parent responses. This high level of practicality indicates that teachers can implement the model without requiring special training that takes a long time, and that children show high enthusiasm during the guidance sessions. The practicality of the model is also supported by the structure of the guidance guide which is designed systematically and comprehensively. This guide contains a clear session flow, specific questioning techniques, and an easy-to-use observation rubric. According to Nieveen (1999 in van den Akker et al., 2006), a product is considered practical if the intended users can use it easily according to the developer's intentions. This finding is in line with research by Black et al. (2021) which found that a structured picture storybook-based intervention is effective for implementation by teachers in the context of early childhood education.

Overall, the cognitive guidance model based on picture storybooks developed in this study proved to be valid (95%), practical (91.7%), and practically gave a real positive impact on the improvement of social cognition of children aged 5–6 years at TK KYOMOON GRACE. This finding strengthens the argument that a guidance approach based on interactive visual media is one of the relevant and effective strategies in supporting the socio-emotional development of early childhood, as also emphasized by Unicef (2021) that stimulation through visual media can improve children's communication and empathy skills.

CONCLUSION

The cognitive guidance model based on picture storybooks to develop the social cognition of children aged 5–6 years at TK KYOMOON GRACE has been successfully developed using the ADDIE model which includes the stages of needs analysis, product design, prototype development, trial implementation, and evaluation. The resulting product consists of a picture storybook with five story themes, a guidance guide for teachers, a rubric-based observation sheet, and a guidance session design of 10 sessions with a duration of 30 minutes per session. The developed cognitive guidance model based on picture storybooks has a very high level of validity. The results of validation by three experts, namely PAUD material experts, counseling guidance experts, and media experts, show an average feasibility percentage of 95% with the "Very Feasible" category. This shows that the developed product has good conformity from the aspects of content, language, presentation, and graphics to be used in guidance activities in the kindergarten environment.

The developed model has a very good level of practicality. Teacher assessment of the model's practicality reached 91.7%, while parent responses showed a figure of 93%, both in the "Very Practical" category. This means teachers can implement the model easily without special training, and children show high enthusiasm during the guidance process. The application of the cognitive guidance model based on picture storybooks gives a positive impact on the improvement of the social cognition of children aged 5–6 years. The average social cognitive score increased from 11.36 on the pre-test to 22.80 (72.60%) on the post-test, with a difference of 11.44 points. The most significant increase occurred in the Sharing/Taking Turns Indicator +12.6 points.

REFERENCES

Adeyemi, V. (2025). The impact of digital technology on child's cognitive and social development: Implications for education. *Psychology*, 2, 100006.

- Al Etivali, A. U. (2019). Pendidikan anak usia dini. *Jurnal Penelitian Medan Agama*, 10(2).
- Billa, Y. S., Rakimahwati, R., Mayar, F., & Yaswinda, Y. (2023). Media Buku Cerita bergambar berbasis inkuiri untuk mengembangkan kreativitas anak. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 7(6), 7965–7976.
- Black, J. E., Barnes, J. L., Oatley, K., Tamir, D. I., Dodell-Feder, D., Richter, T., & Mar, R. A. (2021). Stories and Their Role in Social Cognition. *Handbook of Empirical Literary Studies*, 229–250.
- Cardona, M. A. (2021). Supporting Child and Student Social, Emotional, Behavioral, and Mental Health Needs. *U.S. Department of Education*, 1–99.
- Chen, M., & Huang, Y.-C. (2023). Analysis on the Role of Picture Books in Children's Cognitive Development Education. *Educational Administration: Theory and Practice*, 30(1), 125–140.
- Erskine, R. (2019). Child development in integrative psychotherapy: Erik Erikson's first three stages. *International Journal of Integrative Psychotherapy*, 10, 11–34.
- Gilang, P. (2023). *Teori Vygotsky Terkait Perkembangan Kognitif Anak dan Belajar Sosial!* Gramedia Blog. <https://www.gramedia.com/literasi/teori-vygotsky/>
- Halim, D., & Munthe, A. P. (2019). Dampak Pengembangan Buku Cerita Bergambar Untuk Anak Usia Dini. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 9(3), 203–216.
- Hidayati, R. (2022). PENGGUNAAN MEDIA BUKU CERITA BERGAMBAR DALAM PEMBENTUKAN KARAKTER GEMAR MEMBACA ANAK USIA 5-6 TAHUN DI TK TERATAI GUNUNG SULAH BANDAR LAMPUNG. *Jurnal Magister Pendidikan Islam Anak Usia Dini*, 4(5).
- Ibda, F. (2015). Perkembangan Kognitif: Teori Jean Piaget. *Intelektualita*, 3(1), 242904.
- Kemendikbud. (2024). *PENDIDIKAN ANAK USIA DINI (PAUD)*. Kementerian Pendidikan, Kebudayaan, Riset, Dan Teknologi.
- McLeod, S. (2024). *Piaget's Theory and Stages of Cognitive Development*. Simply Psychology, 5(4). <https://www.simplypsychology.org/piaget.html>
- Nabavi, R. T., & Bijandi, M. S. (2012). Bandura's social learning theory & social cognitive learning theory. *Theory of developmental psychology*, 1(1), 1-24.
- Nazhifa, R., Soraya, N., Dewi, K., & Murtopo, A. (2023). Pengembangan Media Buku Cerita Bergambar Untuk Menanamkan Nilai-Nilai Agama Anak 4-5 Tahun Di Raudhatul Athfal Melati Ogan Komering Ulu. *Jurnal Pendidikan Dan Konseling*, 5(2).
- Ningsih, E. F. (2023). Teori sosial kognitif dan relevansinya bagi pendidikan di Indonesia. *Humanika*, 23(1), 21–26.
- Ratnasari, E. M., & Zubaidah, E. (2019). Pengaruh Penggunaan Buku Cerita Bergambar Terhadap Kemampuan Berbicara Anak. *Scholaria: Jurnal*
- Rohmalimna, A., Yeau, O., & Sie, P. (2022). The Role of Parental Parenting in the Formation of the Child's Self-Concept. *World Psychology*, 1(2), 36–45.
- Sari, P. R., & Fitrisia, D. (2022). The Effectiveness of Using Picture Books to Strengthen Students' Performance in Reading Comprehension. *Universitas Syiah Kuala, Banda Aceh*, 2(4), 48–59.
- Schoppmann, J., Severin, F., Schneider, S., & Seehagen, S. (2023). The effect of picture book reading on young children's use of an emotion regulation strategy. *PLoS ONE*, 18(8 August), 1–21.
- Unicef. (2021). *UNICEF 2017 Report on Communication for Development (C4D)*.
- Yanuardianto, E. (2019). Teori Kognitif Sosial Albert Bandura (Studi Kritis Dalam Menjawab Problem Pembelajaran di Mi). *Auladuna : Jurnal Prodi Pendidikan Guru Madrasah Ibtidaiyah*, 1(2), 94–111.
- Zosh, J. M., Hassinger-Das, B., & Laurie, M. (2020). *Learning Through Play and the Development of Holistic Skills Across Childhood*. www.LearningThroughPlay.com