

Investigating How Peer Interaction Dynamics Shape Children's Cognitive Problem-Solving Abilities

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Abstract. Early childhood is a pivotal stage in the developmental process, including cognitive and social development. At this stage, their high curiosity encourages them to start interacting with their peers. This interaction plays a pivotal role in helping children understand their environment while developing their thinking skills, especially in problem solving. This study aims to determine the effect of interaction with peers on children's thinking in problem solving. The study uses a qualitative method with an observational approach, observing children's behaviour when playing alone and with peers. The focus of observation includes how children play, interact, and respond to problems. The results of the study show significant differences between children who actively interact with peers and those who interact less. Children who frequently interact tend to understand mistakes more quickly and are able to solve problems appropriately. Conversely, children who rarely interact show difficulty in understanding mistakes and solving problems in ways that are less in line with the teacher's instructions.

Keywords: *Early Childhood, Interact, Interaction with peer, Solve problem*

Abstrak. Tahap awal tumbuh kembang anak merupakan fase krusial dalam perkembangan kognitif dan sosialnya. Karena pada tahap ini, rasa ingin tahu yang tinggi mendorong mereka untuk mulai berinteraksi dengan teman sebayanya. Interaksi ini memainkan peran penting dalam membantu anak memahami lingkungannya sambil mengembangkan kemampuan berpikirnya, terutama dalam memecahkan masalah. Penelitian ini bertujuan untuk mengetahui pengaruh interaksi dengan teman sebaya terhadap kemampuan berpikir anak dalam memecahkan masalah. Penelitian ini menggunakan metode kualitatif dengan pendekatan observasional, mengamati perilaku anak saat bermain sendiri dan dengan teman sebayanya. Fokus pengamatan meliputi cara anak-anak bermain, berinteraksi, dan merespons masalah. Hasil penelitian menunjukkan perbedaan yang signifikan antara anak-anak yang aktif berinteraksi dengan teman sebaya dan mereka yang kurang berinteraksi. Anak-anak yang sering berinteraksi cenderung memahami kesalahan lebih cepat dan mampu memecahkan masalah secara tepat. Sebaliknya, anak-anak yang jarang berinteraksi menunjukkan kesulitan dalam memahami kesalahan dan memecahkan masalah dengan cara yang kurang sesuai dengan instruksi guru.



Kata Kunci: *Anak usia dini, Interaksi, Teman sebaya, Menyelesaikan masalah*

Introduction

Early childhood is a crucial period in an individual's developmental process. At this stage, children begin to show a high level of curiosity and a desire to learn about new things around them (Suardi et al., 2021). This developmental process not only includes physical aspects, but also cognitive, linguistic, social-emotional, moral, and spiritual development (Ilham et al., 2024; Iqbal et al., 2023; Oskar et al., 2025). Each of these aspects interacts with one another and contributes pivotally to the formation of children's personalities and thinking abilities in the future (Khalsiah et al., 2025). Therefore, understanding the dynamics of early childhood development is important, especially in the context of their social interactions.

One of the prominent aspects of development during this period is social development. Children begin to learn to interact with the people around them, whether in the family, school, or wider community. This interaction serves as a means of social learning that enables children to develop communication skills, cooperate, and understand social norms (De Felice et al., 2023). According to Syaodih (2005:32), early childhood is a social being who needs the presence of others to grow optimally and has a strong desire to be accepted by their environment, including their peers.

Peers play a pivotal role in shaping children's social and cognitive abilities. They are individuals of the same age range and relatively similar developmental levels. (Safitri et al., 2024) states that interactions with peers usually occur in school and home environments and are an important forum for shaping children's social character. Helm & Turnner (Fadhilah & Mukhlis, 2021) identify four main dimensions in children's social behaviour in peer interactions, namely: cooperating, altruism, sharing, and helping others.

Based on this explanation, it can be assumed that interaction with peers not only has an impact on social aspects but also has the potential to influence the way children think, especially in facing and solving problems. Problem-solving skills are a pivotal part of cognitive development that must be acquired from an early age (Almulla & Al-Rahmi, 2023; Suwanto & Rahman, 2022). Therefore, this study was conducted to observe and analyse the influence of peer interaction on children's thinking in solving problems. In addition, this study also aims to explore the forms of support and the positive and negative impacts of such interactions on children's cognitive abilities.

Method

This study uses a qualitative approach with observation as the main data collection technique. Observations were conducted directly on children's behaviour in the context of social interaction with their peers in the school environment (Booren et al., 2012; Muzari et al., 2022). The research subjects were children in one of the TK-B classes at RA Atta'awun, located at Komplek Pilar Biru, Jl. Pilar Barat, Jl. Pilar Biru Raya No. 15, Cibiru Hilir, Kabupaten Bandung. The researcher conducted observations by directly participating in children's activities, such as playing together, and observing the children's responses when given tasks by the teacher in the classroom. Through this approach, the researcher was able to establish a close relationship with the children so that the interactions observed took place naturally. During the observation process, the researcher focused on the children's behaviour when interacting with their peers, including forms of communication, cooperation, and the strategies used by children in solving problems that arose during play and learning activities.

Results and Discussions

After conducting observations for one day over a period of five hours, the researcher obtained sufficient data to analyse the research question. From the observations, the researcher observed children interacting with their peers. These interactions were observed while the children were participating in learning activities and while they were playing.



Fig 1. The girl started colouring.

In Figure 1, the researcher observed that girls felt comfortable and happy when sitting with friends they knew. When doing assignments, the children did not object or refuse to do them. The children also did not fight over the coloured pencils given by the

teacher. This could happen because the children began to understand other people; they no longer saw things only for themselves but also thought about their friends. This attitude shows that the child wants to get closer to her friends. She wants to build friendships so that they can trust each other and engage in social activities and become closer to one another (Batinah et al., 2022). However, because the child only wants to play with one friend, she displays egocentric behaviour, becoming upset and angry if other friends want to join in playing or doing tasks together. In addition to girls who often interact with their peers, the researcher also found girls who did not really like interacting with their peers (Prastika Damayanti et al., 2021).



Fig 2. The girl is colouring the letters.

Girls who did not really want to interact with their friends can be seen in Figure 2. In the picture, there is a piece of paper that has been coloured but seems irregular. At that time, the teacher asked the child to find one word within the crossword boxes and instructed the child to connect each letter by colouring them to form a word. The researcher attempted to assist the child in identifying each letter and guiding them, but the child could recognize each letter yet was unable to connect one letter to another. This proves that communication and social interaction skills in children are pivotal aspects of child development (Nurlatifah & Andini, 2022). It also proves that children who lack interaction with their peers have a slightly slower understanding than children who often interact with their friends (Imran et al., 2023). Researchers observed that girls who interacted less with their peers still had a stronger desire for themselves than girls who interacted with their peers. Without encouragement from their peers, children do not

understand whether their actions are appropriate or not. Meanwhile, children who interact with their peers can receive encouragement/support from their peers.



Fig 3. The boy is colouring

Unlike girls, boys tend to get bored easily and appear to rush through tasks given by teachers. Researchers observed that boys always want to finish quickly and want to play quickly. However, by completing tasks hastily and hurriedly, boys can complete tasks well and correctly. Additionally, boys tend not to be selective about their friends; they can play with anyone. Researchers observed that boys are more willing to share toys and help each other. Boys do not argue much about toy ownership because they each have their own favourite toys. In addition, the encouragement/support among these male friends can be seen from the way they wait for each other when someone has not finished. Boys will try to help their friends who have not finished their tasks by approaching them and telling them the answers. Boys are also more active than girls.



Fig 4 dan 5. The children enthusiastically colour the pictures.

Figures 4 and 5 show boys and girls focusing on colouring the pictures given by their teacher. The children carefully draw according to the picture patterns and colour all the shapes in the picture. The children who are colouring are not distracted by the activities of their peers. They will finish colouring first before playing (Dewi, 2023; Pratiwi & Nurlaili, 2024). This shows how children solve problems. Children do the activities given by the teacher and then do the activities they like. Children also understand that colouring is done to develop their colouring skills so that they do not feel bored or annoyed when asked by their teacher.

Conclusion

From the results of observations conducted by researchers, it can be concluded that there are differences between children who interact with their peers and those who do not interact with their peers. Children who interact with their peers can understand instructions and commands given by teachers. Children also find it easier to complete assigned tasks quickly. Encouragement/support from friends can assist children complete their tasks. However, arguments between friends can still occur, especially over toys. Meanwhile, children who interact less with their peers will have difficulty understanding instructions and commands given by teachers. Children will do activities according to their own wishes rather than following the teacher's instructions. In

addition, these children are also more shy and rarely talk to others. Due to the lack of encouragement/support from peers, children become less active in speaking.

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