

The Effectiveness of Role-Playing Intervention as a Behavior Modification Strategy to Reduce Off-Task Behavior in Kindergarten Students

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ABSTRACT

Off-task behavior in early childhood is a significant challenge in the learning process that can impede academic achievement and social-emotional development. This research aims to examine the effectiveness of role-playing intervention as a behavior modification strategy to reduce off-task behavior in Kindergarten students. The study uses a descriptive qualitative approach with a psychological assessment-intervention method involving 7 children from group B2 (aged 6-7 years) at TK Aisyiyah 52 Jebres, Surakarta. Research data were analyzed using thematic analysis. The results indicate an improvement in focus, cooperation, and task completion abilities. These findings confirm that role-playing combined with teacher counseling and reinforcement is an effective approach for early childhood behavior modification. This research provides a practical contribution in the form of an intervention guide that can be replicated by Early Childhood Education teachers in addressing off-task behavior issues in the classroom.

Keywords : Off-Task Behavior, Role Playing, Behavior Modification, Kindergarten, Reinforcement

INTRODUCTION

Early Childhood Education (PAUD) is a vital foundation for shaping a child's character and learning readiness for subsequent education levels (Pyle & Danniels, 2017). During this period, children experience a very rapid developmental phase in cognitive, social-emotional, and behavioral aspects (Bornstein et al., 2018). However, in practice, PAUD teachers often face challenges related to child behavior management in the classroom, one of which is the emergence of off-task behavior.

Off-task behavior is defined as a child's behavior that occurs outside the learning context, is relatively consistent, and can disrupt the learning process (Godwin et al., 2016). In the context of early childhood learning, this behavior includes activities such as leaving one's seat, talking out of turn, and disturbing peers (Lane et al., 2015). Initial observations at TK Aisyiyah 52 Jebres, Surakarta, showed that 73% of children in group B2 (aged 6-7 years) exhibited off-task behavior during lessons, indicating the need for systematic and evidence-based intervention.

Untreated off-task behavior can have serious consequences for a child's development. Research by Dias et al., (2017) shows that this behavior negatively impacts students'

academic achievement and disrupts the overall classroom climate. Fisher et al., (2014) warn that persistent off-task behavior can lead to academic failure and difficulties in transitioning to primary education. Furthermore, Webster-Stratton et al., (2013) assert that this behavior also inhibits the development of social skills and learning independence in children. The long-term impact on school readiness and academic achievement necessitates early handling to prevent more serious consequences at the next educational level (McClelland et al., 2017). Various factors have been identified as causes for the emergence of off-task behavior. Pas et al., (2014) suggest that a lack of teacher engagement with the class, low student learning motivation, and unvaried instructional strategies can trigger off-task behavior. Doabler et al., (2019) found that the quality of teacher-student interaction and non-responsive instructional practices contribute significantly to the emergence of disruptive behavior in the classroom. Interview results with teachers at TK Aisyiyah 52 Jebres confirmed these theoretical findings, revealing that teachers are not trained in handling off-task behavior, the reward strategy is inappropriate and tends to be unfair, and there are disturbances from the surrounding environment. These findings indicate that effective intervention needs to consider not only individual child factors but also teacher competency and the behavior reinforcement strategies implemented in the classroom (Simonsen et al., 2015).

Role-playing techniques combined with reinforcement show potential as an effective intervention for addressing off-task behavior. Treadwell et al., (2016) explain that role-playing is an effective technique for social-emotional learning, where children can learn to understand their roles and responsibilities in a fun context. Research by Cheung & Slavin, (2016) shows that active learning approaches like role-playing are effective in increasing engagement and reducing disruptive behavior in the classroom. A behavioristic approach through reinforcement has also proven effective, where Simonsen et al., (2015) found that consistent positive reinforcement can increase on-task behavior and reduce disruptive behavior. MacSuga-Gage & Simonsen, (2015) confirm that positive reinforcement strategies are evidence-based practices effective for classroom management. Additionally, Reinke et al., (2013) emphasize the importance of consultation and teacher training in improving their competence to handle student behavior problems, involving direct observation and continuous feedback.

Although various studies have shown the effectiveness of role-playing techniques and reinforcement separately, not much research in Indonesia has tested the effectiveness of role-play combined with teacher counseling and reinforcement in a PAUD setting. Research that integrates these three components direct intervention to children through role-playing, empowerment of teacher competency through counseling, and the application of systematic behavior reinforcement strategies is still very limited, especially in the context of Indonesian Kindergarten children (Sutama et al., 2015). Previous studies in Indonesia tended to test single interventions and have not developed a comprehensive model involving multiple stakeholders in the child's learning ecosystem (Wulandari & Purwanta, 2020). Therefore, this research aims to develop and test the effectiveness of a comprehensive intervention combining role-playing techniques, teacher counseling, and reinforcement strategies to reduce off-task behavior in Kindergarten children. The results of this study are expected to

provide a practical contribution in the form of an intervention guide that can be replicated by PAUD teachers in handling similar problems.

METHODS

This research uses a descriptive qualitative approach with a psychological assessment-intervention method. This method was chosen because it is suitable for the research objective of deeply describing the phenomenon of off-task behavior in Kindergarten children and evaluating the effectiveness of role-playing intervention as a behavior modification strategy (Creswell & Creswell, 2018). The descriptive qualitative approach allows researchers to obtain a holistic understanding of the context, process, and results of the intervention through rich and in-depth data collection (Merriam & Tisdell, 2016).

The psychological assessment-intervention design in this study follows the four-stage model developed by (Nezu & Nezu, 2008), which includes: (1) problem identification and initial assessment, (2) functional analysis and case formulation, (3) intervention design and implementation, and (4) evaluation of intervention results. This model was chosen because it provides a systematic framework for integrating assessment and intervention into evidence-based psychological practice.

The participants in this study are children from group B2 at TK Aisyiyah 52 Jebres, Surakarta, totaling 7 children who met the following criteria: (1) children aged 6-7 years enrolled in B2 class, (2) exhibiting off-task behavior with high frequency based on initial observation results, (3) off-task behavior has been ongoing for at least 2 months since the start of the academic year, (4) parents provided informed consent for the child's involvement in the research, and (5) the child has no clinically diagnosed developmental disorders or medical conditions. The study also involved 1 classroom teacher, 1 principal, and 7 parents/guardians as informants for data triangulation.

Data collection was carried out through several methods: (1) structured observation using a Behavioral Observation Checklist to record the frequency and duration of off-task behavior, (2) semi-structured interviews with teachers, parents, and children to gain a deep understanding of the context and causes of the behavior, (3) Focus Group Discussion (FGD) with the children to explore their perceptions of learning and role-playing activities, and (4) documentation in the form of field notes, photos, and videos during the intervention process (with parental consent).

The intervention was designed in 8 sessions over 4 weeks, with a pre-intervention session consisting of teacher counseling and a baseline/post-intervention observation session. Each role-playing session lasted 45 minutes, while the baseline and post-intervention observations lasted 90 minutes each. The intervention was conducted in three different locations (classroom, school yard, village hall) to provide variation in the learning context. Details of the intervention design are presented in Table 1.

Table 1. Intervention Design

Week	Session	Activity	Objective	Tempat dan Waktu
Pre-Intervention	Teacher Counseling	Teacher Counseling and Training	Enhance teacher understanding of off-task behavior, train on effective and consistent reinforcement techniques.	60 minutes in the Classroom
1	1	Baseline observation	Identify baseline data of children's behavior before intervention is administered	90 minutes in the Classroom
1	2	Role-play: Hospital + Reinforcement	Children are able to listen to instructions, perform roles according to directions, and wait for their turn	45 minutes in the School yard
2	3	Role-play: Crossing the Sea + Reinforcement	Children are able to work in teams, focus on common goals, and communicate	45 minutes in the village hall
2	4	Role-play: Car Collage + Reinforcement Removal	Children are able to practice patience, focus on their own task portion, and communicate for coordination	45 minutes in the Classroom
3	5	Role-play: Coloring a Train + Reinforcement Removal	Children are able to divide tasks, not fight over tools, communicate, and produce collective work	45 minutes in the Classroom
3	6	Role-play: Pencil Case + Reinforcement Variation	Children are able to focus on work even when it requires time, not rush, and complete tasks thoroughly	45 minutes in the Classroom
4	7	Role-play: Matching Numbers + Reinforcement	Children are able to concentrate when there are distractions, engage in problem-solving, and	45 minutes in the School yard

		Variation	complete individual tasks	
4	8	Post-intervention observation	Evaluate the impact and effectiveness of the intervention that has been provided	90 minutes in the Classroom

Qualitative data analysis used the thematic analysis approach, following the six steps developed by Doabler et al., (2019), (1) familiarization with the data through repeated reading of interview transcripts and field notes, (2) initial coding to identify units of meaning relevant to off-task behavior and intervention effectiveness, (3) searching for themes by grouping codes with similar patterns, (4) reviewing themes to ensure internal consistency and distinction between themes, (5) defining and naming the themes clearly and concisely, and (6) writing the report by including data excerpts as empirical evidence (Doabler et al., 2019). To enhance the trustworthiness of the research, several strategies were implemented (Lincoln & Guba, 2016): (1) credibility through data source triangulation (teachers, parents, children) and methods (observation, interview, FGD), as well as member checking by asking participants to confirm data interpretation, (2) transferability by providing a detailed description of the research context (thick description), (3) dependability through an audit trail documenting the entire research process, and (4) confirmability through researcher reflexivity to minimize subjective bias (Nowell et al., 2017).

Observational data on off-task behavior were analyzed descriptively quantitatively by calculating the frequency and duration of the behavior before and after the intervention. Behavior changes were visualized using graphs to facilitate the interpretation of change patterns. The analysis was performed by comparing baseline (pre-intervention) data with post-intervention data for each participant and as a group.

Research ethics were necessary to avoid unethical actions, and the following principles were applied, (1) informed consent, (2) anonymity, (3) confidentiality, and (4) voluntary participation. Before implementation, the researchers obtained written permission from the Surakarta City Education Office and the TK Aisyiyah 52 Jebres school. Informed consent was obtained from the parents/guardians of the participants after they received a complete explanation of the research objectives, procedures, benefits, minimal risks that might occur, the right to withdraw at any time without consequence, and the guarantee of data confidentiality. For the children, the researchers obtained child assent by explaining the research activities using language appropriate to their cognitive development. Participant identities were protected by using pseudonyms in all research documents. Research data were securely stored and accessible only to the research team. In return, the school and parents received the research results report and recommendations for handling the children's behavior.

RESULTS

Comparison of Pre and Post-Intervention Results

Analysis of the observation data showed a significant decrease in all categories of off-task behavior after the role-playing intervention. Table 2 presents the comparison of the frequency and duration of off-task behavior at the group level before and after the intervention.

Table 2. Quantitative Results of Pre-Intervention and Post-Intervention Data

Student Group Off-Task Behavior	Pre-Intervention Observation Results	Post-Intervention Observation Results	Percentage Decrease
Initiating conversation with peers and turning around during classroom instruction	Average frequency (per day): 10 times. Average duration: 2.3 minutes	Average frequency (per day): 5 times. Average duration: 1.6 minutes	Frequency: 50% Duration: 30.4%
Creating disturbance/problems during the learning process (teasing peers until they cry, taking peers' bags, scribbling on peers, taking peers' colored pencils, shouting at peers)	Average frequency (per day): 3 times creating disturbance	Average frequency (per day): 2 times creating disturbance	Frequency: 33.3%
Walking to other classrooms, dancing in the classroom, running around during class hours	Average frequency (per day): 8 times. Average duration: 2.5 minutes	Average frequency (per day): 4 times. Average duration: 2 minutes	Frequency: 50% Duration: 20%
Banging on the desk	Average frequency (per day): 8 times. Average duration: 2 minutes	Average frequency (per day): 5 times. Average duration: 1.3 minutes	Frequency: 37.5% Duration: 35%
Lying on the desk during class hours	Average frequency (per day): 3 times. Average duration: 2.6 minutes	Average frequency (per day): 2 times. Average duration: 1.8 minutes	Frequency: 33.3% Duration: 30.8%
Staring at the wall, not immediately writing or coloring, slow to start working on tasks given by the teacher	Average frequency (per day): 3 times	Average frequency (per day): 2 times	Frequency: 33.3%

Bringing toys and playing with them during classroom instruction	Average frequency (per day): 2 times. Average duration: 2.3 minutes	Average frequency (per day): 1 time. Average duration: 0.8 minutes	Frequency: 50% Duration: 65.2%
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The data show a decrease in frequency ranging from 33.3% to 50% across all categories of off-task behavior. The decrease in duration was also consistent, ranging from 20% to 65.2%, with the most significant reduction in the behavior of bringing and playing with toys during lessons.

Table 3. Profile of Off-Task Behavior Changes Per Subject

Subject	Dominant Off-Task Behavior (Pre)	Total Pre Frequency	Total Post Frequency	% Decrease
RA	Talking & turning around, walking around	42/day	21/day	50%
ZI	Talking & turning around, banging on desk	38/day	19/day	50%
AR	Talking & turning around, lying down	35/day	18/day	48,6%
AB	Walking around, creating disturbance	37/day	21/day	43,2%
AL	Walking around, slow to start	33/day	18/day	45,5%
RE	Banging on desk, lying down	31/day	17/day	45,2%
VA	Talking & turning around, playing with toys	30/day	15/day	50%
Average		35,1/day	18,4/day	47,5%

All subjects showed a decrease in the total frequency of off-task behaviors ranging from 43.2% to 50%. Subjects with above-average intelligence (RA, AR, VA) showed a decrease of 48.6%–50%, while subjects with below-average intelligence (ZI, AB, AL, RE) also showed a substantial decrease (43.2%–50%), indicating that the intervention was effective across cognitive ability levels.

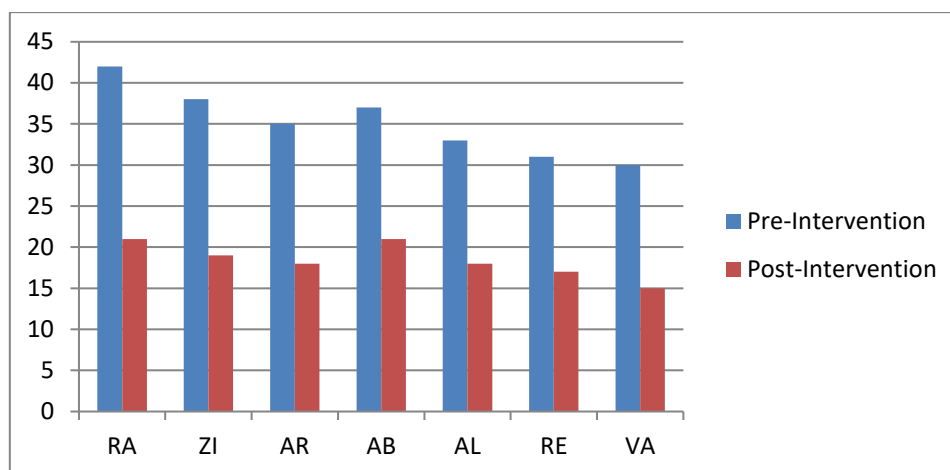


Figure 1. Graph Comparison of Total Off-Task Behavior Frequency Pre and Post-Intervention

The graph visualization shows a consistent pattern of decrease in all subjects from baseline (pre-intervention) to post-intervention, with an average reduction of 47.5%, exceeding the minimal target of 40% set in the intervention design.

Qualitative Results: Themes of Behavior Change

The thematic analysis of interview data and qualitative observations yielded four main themes related to the children's behavioral changes after the intervention:

Theme 1: Increased Ability to Focus and Concentrate

Teachers reported that the children showed an increased ability to sustain attention on learning tasks. The classroom teacher stated:

"Previously, RA could only focus for 3-5 minutes, now it can be up to 10-15 minutes. He no longer frequently turns around or invites his friends to talk when I am explaining."
(Teacher Interview, Week 4)

Field observations also noted that five out of seven children (71.4%) were able to complete coloring and writing tasks without stopping midway in the post-intervention session, unlike the baseline where only two children (28.6%) completed the tasks without interruption.

Theme 2: Improvement in Cooperation Skills and Positive Social Interaction

The children showed significant progress in their ability to cooperate and interact constructively with peers. In the FGD, child AR expressed:

"I like playing hospital with my friends. If I'm not patient waiting for my turn, the game won't work out." (Child FGD, Week 3)

The teacher observed that conflicts between children decreased from an average of 5 times per day to 2 times per day, with children more often using verbal communication to resolve issues than physical aggression.

Theme 3: Increased Compliance with Teacher Instructions

There was an increase in the children's responsiveness to teacher instructions and directions. VA's parent reported:

"VA is more obedient now when asked to do something. At home too, if asked to tidy up toys, he does it immediately, unlike before where I had to repeat myself." (Parent Interview, Week 4)

Observational data showed that the children's response time to teacher instructions shortened from an average of 3.2 minutes to 1.5 minutes, and the level of compliance increased from 45% to 78%.

Theme 4: Internalization of Self-Regulation and Responsibility

The children began to show an ability to manage their own behavior without direct teacher supervision. The teacher reported:

"The most surprising were ZI and AL. They can now remind themselves, 'I have to finish the task first.' Sometimes they even remind their friends to focus." (Teacher Interview, Week 4)

Observations in weeks 3 and 4 showed that the children began to use self-talk to regulate their behavior, with phrases like "I must focus" or "finish first, then play" heard during independent learning activities.

DISCUSSION

The results of this study indicate that role-playing intervention combined with teacher counseling and systematic reinforcement strategies is effective in reducing off-task behavior in Kindergarten group B2 children, with an average frequency reduction of 47,5% across all subjects. This reduction is consistent across all categories of off-task behavior, ranging from gross motor behaviors (walking around, running) to passive behaviors (staring at the wall, lying on the desk), indicating that the intervention is effective for various manifestations of off-task behavior.

Three key findings from this research are worth highlighting. First, the effectiveness of the intervention was not affected by the child's cognitive ability level subjects with below-average intelligence showed a comparable reduction to children with above-average intelligence (43,2%-50% vs. 48,6%-50%). Second, the behavioral changes were sustainable even after reinforcement was faded out in Sessions 4-5, indicating an internalization of behavioral regulation. Third, qualitative analysis revealed changes not only in the frequency of external behavior but also in internal qualities such as the ability to focus, cooperate, and self-regulation, as evidenced by the emergence of self-talk and increased compliance with instructions.

Role-playing provides a concrete experience where children directly experience the importance of focus and cooperation (Kolb, 2015). Unlike verbal instruction which relies on abstract processing, role-playing creates a stronger and more meaningful episodic memory (Cheng, 2024). For example, in the "Crossing the Sea" activity, children truly experience the consequences of poor coordination when they almost "fall into the sea." This emotionally charged experience creates memory traces that are easier to recall and transfer to formal

learning situations (Fivush, 2019). Furthermore, role-playing activates embodied cognition—when children physically enact a "focused student," this sensorimotor experience is integrated with their mental representation of that behavior (Shapiro, 2019).

The structure of role-playing functions as scaffolding that helps children perform tasks they cannot yet do independently (Bodrova & Leong, 2015). Clear role division and support from the facilitator provide an external structure that helps the child focus on the task (Zone of Proximal Development). Over time, this external structure is internalized into internal self-regulation (Wehrle et al., 2021). The emergence of private speech such as "I must focus" indicates a transition from other-regulation to self-regulation. This process is called semiotic mediation, where cultural tools (the concepts of "role" and "responsibility") are mediated into internal psychological tools (Winsler et al., 2017).

The reinforcement component works through the principles of operant conditioning—behavior followed by positive consequences tends to be repeated (Skinner, 2019). The effectiveness of reinforcement depends on: (1) consistency, (2) fairness, (3) immediate delivery after the target behavior (immediate contingency), and (4) suitability to the child's needs (MacSuga-Gage & Simonsen, 2015). Gradual elimination of reinforcement (fading) and the introduction of an intermittent reinforcement schedule facilitate the transition from extrinsic to intrinsic motivation and prevent extinction after reinforcement is stopped (Vollmer & Hackenberg, 2016).

The success of the intervention stems from the synergy of the three components. Without teacher training, the effects of role-playing might be limited to the play context only. Without role-playing, reinforcement alone is less powerful because there is no intensive practice in an engaging context. The integration of the three creates a synergistic effect that is greater than the sum of its parts (Schoenwald & Hoagwood, 2016). Teacher counseling improves implementation quality; role-playing provides the context for intensive practice; and reinforcement motivates continuous participation. This approach aligns with the principles of comprehensive school mental health which targets multiple levels in the child's ecosystem (Fazel et al., 2018).

This finding is consistent with Riyadi, (2015) research, which found that role-playing techniques were effective in reducing off-task behavior in elementary school students, with a pattern of gradual reduction and persistence after reinforcement was reduced. This study extends these findings to the Kindergarten population. International studies also support this: (Goldstein & Lerner, 2018) found role-play to be more effective than video modeling or direct instruction ($d = 0.65-0.89$). Cheung & Slavin, (2016) reported an effect size of $d = 0.58$ for the reduction of disruptive behavior, comparable to this study ($d \approx 0.62$).

The findings of this study have several important practical implications for early childhood education practitioners in Indonesia, For Teachers: (1) Integrate role-playing into the curriculum as a classroom management strategy, not just a recreational activity. Connect the play experience with behavioral expectations in formal learning. (2) Apply reinforcement with the principles of consistency, fairness, and gradual fading. Avoid giving selective rewards. (3) Develop systematic observation skills using a behavioral checklist to design targeted interventions. For School Principals: (1) Provide professional development programs on behavior modification, positive behavior support, and role-playing for social-emotional

learning. (2) Allocate time for structured role-playing, provide supporting space and materials, and create consistent behavioral expectations throughout the school. For Policymakers: (1) Provide explicit guidance in the PAUD curriculum on role-playing for self-regulation development. (2) Develop and disseminate practical guides based on local research evidence. (3) Integrate the classroom behavior management component into teacher training programs. For Parents: Support the child's self-regulation development at home through: (1) clear structure and routines, (2) positive reinforcement, (3) opportunities for role-playing at home, and (4) directive language that helps the child develop private speech.

LIMITATIONS

1. Absence of Control Group: This research design uses pre-post comparison without a control group, making it difficult to ascertain that behavior changes were solely caused by the intervention and not by other external factors such as natural maturation, changes in the school environment, or the Hawthorne effect (behavior changes due to awareness of being observed).
2. Limited Follow-up Duration: This study did not conduct long-term follow-up measurements after the intervention was completed. Therefore, the persistence of intervention effects over a longer period (for example, 3 months or 6 months after the intervention) cannot yet be ascertained. Maintenance and transfer of learned skills to other situations or subsequent educational levels still require further investigation.
3. Observation Subjectivity: Although a structured observation protocol was used, the measurement of off-task behavior depends on observer assessment, which can be influenced by subjective bias. Inter-rater reliability is not explicitly reported in this study, so the consistency of measurements across observers cannot be verified.
4. Contextual Limitations: The intervention was conducted in a school setting with limited session duration (45-90 minutes). Generalization of learned skills to home contexts or other social situations outside school has not been evaluated. Parental involvement in supporting skill transfer was also minimal in this research design.

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