

Improving Children's Understanding Of Rules Through The Number Game 1-10 With The Theme Of Self In Students In Group A

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Abstract

This study aims to improve children's understanding of rules through number games 1–10 with the theme "Myself" among Group A students (aged 4–5 years) at TK Cendekia Insani in the academic year 2025/2026. The research employed Classroom Action Research (CAR) using the Kemmis & McTaggart model, conducted in two cycles. Each cycle consisted of planning, implementation, observation, and reflection. The research subjects were 15 children (8 boys, 7 girls). Data collection techniques used observation and documentation, with instruments in the form of rule-understanding observation sheets (indicators: following instructions, waiting for turns, not grabbing, stopping when signaled). The theme "Myself" was integrated through games such as "Guess the Body Parts," "Roll the Dice," "Number Jump," and "Number Relay," linked to the number of eyes, noses, fingers, and age. The results showed significant improvement: in the pre-cycle, only 5 children (33.3%) reached the category of Developing as Expected (BSH). After the action in Cycle I, it increased to 8 children (53.3%), and in Cycle II it increased to 13 children (86.6%). The performance indicator (75% achieving BSH) was met in Cycle II. The number games with the "Myself" theme were effective because the concrete material was close to children's experiences, in accordance with Kohlberg's theory of moral development (pre-conventional), Vygotsky's ZPD (scaffolding), and Piaget's pre-operational stage. In conclusion, number games 1–10 with the theme "Myself" can improve rule understanding in children aged 4–5 years.

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1. INTRODUCTION

Education is a deliberate and systematic process designed to create a learning environment and learning activities. The goal is to encourage students to actively explore and develop their potential, fostering spiritual and religious strength, self-management skills, a more mature personality, intelligence, noble character, and skills that are beneficial to themselves, their community, the nation, and the state (Ministry of Education, Culture, Research, and Technology, 2022).

Early childhood is a crucial phase for maximizing a child's development. This is the ideal period for laying the foundation for the development of physical skills, language, social-emotional skills, self-identity, art, and moral and religious values. Early childhood refers to the age group of children between zero and six years old who require guidance in various areas (Kusumaningrum et al., 2022; Mundir et al., 2022). Early childhood education (PAUD) plays a crucial role in fostering various aspects of a child's development. One skill that needs to be instilled early is an understanding of rules.

Understanding rules helps children behave in an orderly, disciplined manner and interact positively with their surroundings. Children aged 4-5 years are at a critical stage in their early social, emotional, and moral development, including the ability to understand and follow rules both at school and at home. In the school environment, the ability to obey rules is evident in children's behavior when following teacher instructions, waiting their turn, cooperating, and adhering to class agreements (Nurpadilah et al., 2024).

According to Kohlberg's theory of moral development, early childhood generally experiences preconventional moral reasoning. At this stage, children have not yet fully internalized moral values. Their understanding of right and wrong is still heavily influenced by external factors, namely rewards and punishments (Hamdani & Ismaraidha, 2025). Therefore, instilling discipline and an understanding of rules requires media and methods that are concrete and engaging for children.

Based on initial observations conducted in Group A of Cendekia Insani Kindergarten, it was found that the average child's understanding of rules was still relatively low. Children often had difficulty waiting their turn during play and learning activities, frequently disobeyed teacher instructions, snatched friends' toys, and were inconsistent in adhering to simple rules. Pre-cycle data showed that only 33.3% of children were in the Developing According to Expectations (BSH) category. This indicates that the learning strategies used previously were not fully capable of capturing children's attention and instilling compliance with the rules.

Several interrelated factors appear to underlie this low initial understanding of rules. First, prior learning activities in the classroom relied predominantly on verbal instruction and worksheet-based tasks, which offered limited opportunities for children to physically practice turn-taking, waiting, and responding to stop signals in a repeated, embodied manner. Second, classroom rule enforcement tended to be reactive rather than proactive, with teachers correcting rule violations as they occurred rather than embedding rule practice into structured, game-based routines that make expectations explicit and predictable. Third, the abstract nature of the rules themselves—framed as general classroom norms rather than being tied to concrete, personally meaningful content—made it difficult for children at the pre-operational stage to connect the rule to a tangible referent (Pratama et al., 2024). Finally, with 15 children under the supervision of a single teacher, individualized reminders and immediate reinforcement were difficult to sustain consistently, which likely contributed to the inconsistent rule-following observed during the pre-cycle stage (Nurpadilah et al., 2024). These converging factors informed the design of the intervention, which deliberately combined repeated embodied practice, immediate and consistent reinforcement, and thematic content close to children's own bodies and identities.

One approach that can be used to improve understanding of rules is through play. The 1-10 number game is a learning medium that not only helps children's cognitive development in recognizing numbers but can also be used as a means to practice compliance with rules. Referring to the success of using the 1-10 number game in improving cognitive abilities (Lidiawati et al., 2024; Masruroh et al., 2024; Paramansyah et al., 2022; Desti Survia & Desmiati Mulanirum, 2023), learning can be modified so that the number game not only emphasizes the counting aspect but is also designed as a social rule-based game.

According to Vygotsky's (1978) Zone of Proximal Development (ZPD) theory, educational play plays a crucial role in early childhood. Number games 1-10 serve as scaffolding, where teachers provide initial guidance until children become independent in understanding rules (Fitriani & Susanti, 2022). Furthermore, Piaget emphasized that pre-operational children's understanding of rules relies heavily on direct manipulation of physical objects (Pratama et al., 2024).

In this study, researchers modified the 1-10 number game by integrating the theme of 'Self'. This theme was chosen because the concept of body parts (such as 2 eyes, 1 nose, 5 fingers) is very concrete and close to children's daily lives. Through structured games such as number relays and dice throwing, children are trained to understand and implement rules such as waiting their turn, obeying instructions, and not disturbing friends (Asih et al., 2025). This study aims to

describe the improvement in children's understanding of rules through the 1-10 number game in group A students at Cendekia Insani Kindergarten in the 2025/2026 academic year.

2. RESEARCH METHOD

This research uses a qualitative and quantitative approach with the Classroom Action Research (CAR) type. The CAR model used is the Kemmis & McTaggart model, which consists of four stages in each cycle: (1) planning, (2) acting, (3) observing, and (4) reflecting. This research was conducted in two action cycles.

To facilitate replication by other researchers, each stage of the CAR cycle was implemented following a consistent procedural template. During the planning stage, the researcher and classroom teacher jointly developed the Daily Learning Implementation Plan (RPPH), selected and prepared the game media (dice, number cards, body-part props, star stickers), and finalized the specific rules and consequences to be applied (e.g., loss of turn for grabbing or forcing one's way). During the acting stage, the teacher opened each session by explicitly explaining and modeling the game rules before play began, then facilitated the number game itself (e.g., 'Guess the Body Part,' 'Roll the Dice,' 'Number Jump,' or 'Number Relay') while applying the agreed consequences and reinforcements in real time. During the observing stage, the researcher used the rule-understanding observation sheet to record each child's behavior against the four indicators (waiting for turns, not grabbing, listening to instructions, stopping on signal) during the session, supported by photographic documentation. During the reflecting stage, the researcher and teacher met after each cycle to review the observation data, identify recurring rule violations and their likely causes, and jointly determine specific modifications to be carried into the next cycle—for example, the decision to introduce smaller group sizes and more frequent positive reinforcement in Cycle II was a direct outcome of this reflective discussion following Cycle I. Each cycle consisted of two learning sessions conducted on separate days, allowing the observation data to capture both immediate responses and short-term retention of the rules across sessions.

Time and Place: This research was conducted in the even semester of the 2025/2026 Academic Year at Cendekia Insani Kindergarten located in Tanak Song Hamlet, Jenggala Village, Tanjung District, North Lombok Regency. The research subjects were 15 Group A students (aged 4-5 years), consisting of 8 boys and 7 girls.

The data collection techniques used in this study included observation and documentation. Observation was used to directly observe children's ability to understand the rules during the 1-10 game, with the following indicators: (a) children were able to wait their turn, (b) did not grab or force their way forward, (c) listened to instructions, and (d) stopped the activity when given a signal. Documentation was used to collect data in the form of RPPH, activity photos, and school profile data.

Data analysis was conducted using descriptive qualitative and quantitative methods. Quantitative data in the form of observation scores were calculated as a percentage to determine classical completion. The assessment criteria were divided into four: Not Yet Developing (BB), Starting to Develop (MB), Developing as Expected (BSH), and Developing Very Well (BSB). The success indicator for this study was determined if the percentage of classical completion (children who met the minimum BSH criteria) reached $\geq 75\%$.

3. RESULTS AND DISCUSSION

A. Research Results

The research was conducted starting from the pre-cycle stage to determine initial conditions, followed by Cycle I and Cycle II. The main focus of observation was children's understanding of the rules when participating in a self-themed number game activity with numbers 1-10.

1. Pre-Cycle Description

Before the intervention, observations showed that the children's rule-understanding skills were still relatively low. Of the 15 children, most still had difficulty

waiting their turn and frequently interrupted their peers. Only five children reached the completion criteria (BSH), resulting in a classical completion percentage of 33.3% in the pre-cycle stage.

No	Child's Name	Score	Criteria
1	Faqih	10 (MB)	Not yet finished
2	Rizki	15 (BSH)	Completed
3	Abi	12 (MB)	Not yet finished
4	Alwino	13 (BSH)	Completed
5	Dilan	11 (MB)	Not yet finished
6	Syaquil	9 (MB)	Not yet finished
7	Adam	11 (MB)	Not yet finished
8	Maulana	10 (MB)	Not yet finished
9	Elza	13 (BSH)	Completed
10	Mariska	12 (MB)	Not yet finished
11	Vania	10 (MB)	Not yet finished
12	Kaysha	9 (MB)	Not yet finished
13	Chika	15 (BSH)	Completed
14	Chayra	14 (BSH)	Completed
15	Aina	9 (MB)	Not yet finished

Table 1. Child Completion Data in Pre-Cycle

2. Implementation of Cycle I

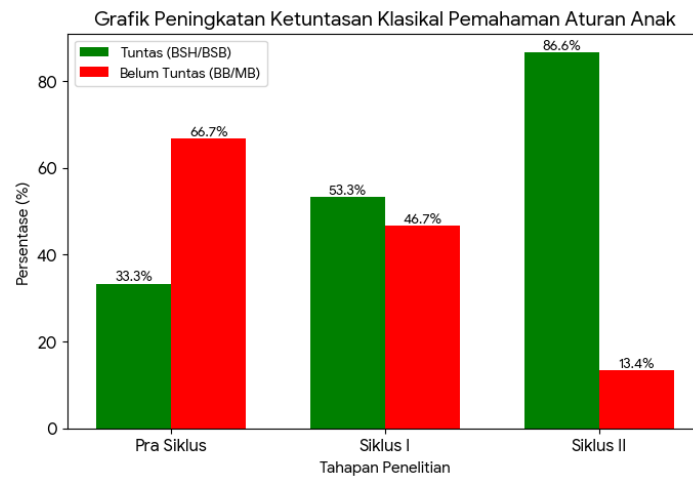
In Cycle I, the teacher began implementing self-themed number games 1-10, such as 'Guess the Body Part' and 'Roll the Dice'. The teacher explained the rules of the game before the activity began and imposed a penalty of losing a turn for children who violated the rules. Observations from Cycle I showed improvement. Children began to become accustomed to the queuing routine, although some still needed reminders. Eight children (53.3%) completed the task. However, this figure did not meet the 75% performance indicator, so it was necessary to continue to Cycle II.

3. Implementation of Cycle II

Based on the reflections from Cycle I, in Cycle II, the teacher divided the children into small groups for optimal supervision and increased positive reinforcement (praise and star stickers). Games were varied with activities like "Snakes and Ladders Numbers" and "Number Relay." The results were very significant; almost all children were able to comply with the rules independently. The number of children who completed the activity increased sharply to 13 children (86.6%), thus achieving the success indicator.

Stages	Completed (People)	Not Yet Completed (People)	Completion Percentage
Pre Cycle	5	10	33,3%
Cycle I	8	7	53,3%
Cycle II	13	2	86,6%

Table 2. Recapitulation of Classical Completion Improvement



Graph 1. Increase in Classical Completion of Understanding Rules

Beyond the aggregate classical completion percentages, a closer qualitative examination of the four rule-understanding indicators—waiting for turns, not grabbing or forcing one's way, listening to instructions, and stopping the activity when signaled—reveals a differentiated pattern of improvement across the two cycles. The indicator of waiting for turns showed the earliest and most consistent improvement, as queuing routines were repeatedly practiced in nearly every game session from Cycle I onward, such that by the later sessions of Cycle I most children required only occasional reminders rather than direct intervention. Listening to instructions also improved relatively early, since each activity began with an explicit rule explanation that children encountered repeatedly across sessions. In contrast, the indicators of not grabbing or forcing one's way and stopping the activity when signaled appeared more resistant to change during Cycle I; these two indicators were most frequently associated with the rule violations that triggered the loss-of-turn consequence, particularly during high-excitement games such as 'Roll the Dice.' It was only after the Cycle II modifications—smaller group sizes for closer supervision, more consistent positive reinforcement through star stickers, and increased peer-tutoring interactions during 'Snakes and Ladders Numbers' and 'Number Relay'—that these two more impulse-related indicators showed marked improvement, aligning with the sharp increase in overall classical completion to 86.6% in Cycle II. This pattern suggests that rule-understanding indicators requiring impulse control develop more slowly than those requiring receptive compliance, and may benefit from more intensive, socially mediated scaffolding such as smaller group sizes and peer reinforcement.

B. Discussion

Based on data analysis from pre-cycle to Cycle II, it is clear that the use of self-themed number games 1-10 significantly improved children's rule comprehension skills in Group A. The classical completion percentage, which was initially only 33.3%, jumped to 53.3% in Cycle I, and finally reached 86.6% in Cycle II.

This improvement is inseparable from the appropriateness of the actions to the developmental characteristics of early childhood. Referring to Lawrence Kohlberg's theory of moral development, children aged 4-5 years are in the pre-conventional stage, where their obedient behavior is driven by rewards and avoidance of punishment (Hamdani & Ismaraidha, 2025). In this study, the application of star stickers as appreciation and loss of turn as a consequence proved effective in fostering children's discipline. Children obey not because they understand the abstract value of a rule, but because they want to earn stars and still be able to play (Nurpadilah et al., 2024).

Furthermore, this success is strongly supported by the role of play as scaffolding, in line with Lev Vygotsky's Zone of Proximal Development (ZPD) theory. In Cycle I, the teacher's role was dominant in guiding children to queue and follow instructions. However, in Cycle II, this guidance gradually diminished (faded) as children became more independent. Social

interactions in small groups during games of "Snakes and Ladders of Numbers" or "Number Relay" triggered the emergence of peer tutors, where children who were more familiar with the rules voluntarily reminded their peers who broke the rules (Fitriani & Susanti, 2022; Rahman & Sari, 2023).

The choice of the theme 'Self' is also a key factor. In accordance with Piaget's view that pre-operational children need concrete materials, associating the numbers 1-10 with the number of body parts (e.g., 2 eyes, 1 nose, 5 fingers) makes the material very relevant and easy to understand (Kusuma et al., 2024). Unlike previous research, such as that conducted by Desti Survia & Desmiati Mulanirum (2023), which only used conventional number cards, the modification of the theme close to the child's life (self) in this study successfully fostered enthusiasm and optimal focus on learning in children.

Overall, the results of this study confirm that a structured play-based learning approach is highly effective in instilling discipline. Educational games not only serve as a cognitive tool for recognizing numbers (Pratama et al., 2024; Sari & Widodo, 2020), but also serve as mini-social laboratories where children practice self-regulation skills, share space, and adhere to mutual agreements.

The advantages of the 'Myself'-themed number game become clearer when critically compared with the media used in prior studies on number games and rule or numeracy development. Pratiwi (2021), for instance, modified a dice game to improve rule understanding, but the modification centered on the mechanics of the dice itself rather than on the thematic content of the numbers being counted; as a result, the rule practice was decontextualized from any content that was personally meaningful to the child. Similarly, Dewi et al. (2021) used a mathematics puzzle to improve number-sequence understanding, and Rahmadani Anjani (2025) used a 'number tree' medium to support cognitive development—both effective for numeracy, but neither medium was designed to simultaneously target rule compliance, since the numbers involved (puzzle pieces, tree branches) bore no inherent relationship to the child's own body or identity. The present study's modification differs in that it deliberately fuses the numeracy content and the rule-practice function into a single, self-referential structure: because the numbers 1–10 are mapped onto the child's own eyes, nose, fingers, and age, following the game's rules becomes intrinsically tied to making sense of one's own body, which appears to sustain attention and motivation more effectively than rule practice embedded in generic or externally referenced materials. This is consistent with, yet extends, Desti Survia and Desmiati Mulanirum's (2023) finding that conventional number cards can support number recognition; the present findings suggest that when the numerical content is additionally made self-referential, the same activity can simultaneously function as a vehicle for rule internalization, a dual function not reported in the aforementioned studies. This suggests that the choice of thematic content in number games is not merely a motivational add-on but may causally influence the extent to which such games can be repurposed as tools for social-rule instruction, an aspect that has received comparatively little critical attention in prior number-game research.

4. CONCLUSION

Based on the results of classroom action research carried out in two cycles at Cendekia Insani Kindergarten, it can be concluded that the application of the number game 1-10 with the theme 'Myself' has proven effective in improving the understanding of rules in early childhood group A. This is evidenced by an increase in the classical completeness of children's understanding of rules from the pre-cycle stage by 33.3%, increasing to 53.3% in Cycle I, and reaching a success percentage of 86.6% in Cycle II (exceeding the performance indicator of 75%).

The effectiveness of this game lies in the use of concrete objects (body parts), clear rules, and the implementation of a reinforcement system (star stickers). Through structured play, children not only learn early math concepts in a fun way, but also practice self-regulation, patience in waiting their turn, and compliance with teacher instructions. It is recommended that early

childhood educators integrate structured games with themes close to the child's environment as a fun method of instilling discipline.

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