

Changes in Discipline and Responsibility of Children Aged 5-6 Years after the Implementation of PING in Seroja Kindergarten

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ABSTRACT

Character development in early childhood requires habituation that is consistently integrated into children's daily learning experiences. One context that provides repeated opportunities to practice discipline and responsibility is the transition between learning activities. This study aimed to examine changes in discipline and responsibility among children aged 5–6 years following the implementation of the PING Habituation Model. PING is a structured habituation model consisting of three phases: Pre-Class Greeting, which prepares children to participate in learning; Inter-Class Transition Greeting, which guides children to stop previous activities, follow instructions, organize their belongings, and move orderly to the next activity; and End-Day Closing Greeting, which habituates children to complete activities and leave the learning environment in an orderly and responsible manner. The study employed a quantitative approach with a one-group pretest–posttest design involving 15 children aged 5–6 years. Data were collected through behavioral observation, daily implementation monitoring, teacher interviews, and documentation. The model was implemented for 34 days, with an overall implementation rate of 97.1%. The mean discipline score increased from 7.60 to 13.87, while the mean responsibility score increased from 7.67 to 13.07. The Wilcoxon Signed-Rank test showed significant differences between pretest and posttest scores for both discipline and responsibility ($p = 0.0005$). The findings indicate that the implementation of the PING Habituation Model was accompanied by improvements in children's discipline and responsibility, particularly through repeated and contextualized routines during learning transitions. Given the absence of a control group, these findings should be interpreted as evidence of pretest–posttest change rather than definitive causal effectiveness.

Keywords: *PING Habituation Model, Discipline, Responsibility, Early Childhood, Learning Transition*

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INTRODUCTION

The development of digital technology has changed the pattern of interaction and early childhood learning experiences. Children are increasingly dealing with various forms of digital media that affect the way they interact, communicate, and carry out daily activities. In these conditions, character education becomes increasingly important because character is not only related to understanding good behavior, but also the ability of children to apply these behaviors consistently in real situations. In the early childhood education environment, character strengthening needs to be realized through concrete, repetitive, and close experiences to children's life routines.

One of the important characters to be developed at the age of 5–6 years is discipline. Discipline in children can be seen from the ability to follow rules, respond to instructions, carry out activities in an orderly manner, and adjust behavior to the demands of the situation. At the same time, responsibility appears through the child's ability to complete tasks, carry out activities independently, take care of used items, and tidy up equipment after activities. Both characters are not sufficiently developed through verbal delivery of rules, but need opportunities for children to practice them directly and repeatedly in daily activities.

Habituation is one of the relevant strategies because it provides opportunities for children to perform the same behavior consistently until the behavior becomes part of the

routine. Previous research shows that habituation, teacher examples, and daily activity routines can support the development of early childhood discipline and responsibility (Dewi & Fajriah, 2025; Mulyani et al., 2025; Nadlifah et al., 2023; Pusparini et al., 2026; Rizkia et al., 2026; Rusiadi, 2024). The findings show that character formation is more meaningful when children gain direct experience to perform the expected behavior, rather than just receiving an explanation of character values.

Theoretically, habituation can be understood as the process of forming a relationship between repetitive contexts and behavioral responses. Wood et al. (2022) explain that habits develop through the repetition of behaviors in a given context, so that contexts that have repeatedly accompanied a behavior can activate the learned responses. Stojanovic et al. (2022) also show that the stability of context in behavior repetition contributes to the formation of automation and the achievement of habit goals. In the context of early childhood education, these mechanisms show that instruction, sequence of actions, and situations carried out repeatedly in a relatively consistent context can help children build increasingly stable response patterns. Therefore, character habituation depends not only on the delivery of rules, but also on repeated opportunities to perform the same behavior with the teacher's direction and reinforcement. This framework is the conceptual basis for the placement of the PING Habituation Model at points of repeated learning routines.

One form of social habituation that has been applied in the educational environment is smile, greeting, and greeting (3S), as well as its development into smiles, greetings, greetings, politeness, and manners (5S). Various studies show that 3S/5S habituation can support the formation of positive character and culture in the educational environment (Bhaghi et al., 2025; Damanik & Agustia, 2025; Inayah & Wiyani, 2022; Sumiarsih et al., 2024). However, some of these studies place 3S/5S as a social habit or school culture in general. Thus, there is still room to develop these habits into a series of activities that are structured based on the stages of learning activities, especially when children move from one activity to another.

Transition activities are one of the strategic situations for the formation of discipline and responsibility. During the transition, children need to stop previous activities, pay attention to the teacher's instructions, tidy up the equipment, change places in an orderly manner, and prepare to participate in the next activity. This set of actions is directly related to disciplined behavior and responsibility. Research on transitional activities in preschool education shows that planned and supported transitions in a structured way can help the learning process, classroom management, and children's engagement (Kim et al., 2024; Yıldız et al., 2024). Therefore, the transition should not only be seen as a break between two activities, but as part of a learning experience that can be used to train positive behavior.

The problem that then arises is how character habituation can be systematically placed at various points in the learning flow, not just as a general school culture. This need became the basis for the development of the PING Habituation Model, which is 3S habituation that is operationalized in three phases of activities. PING itself stands for Pre-Class Greeting, Inter-Class Transition Greeting, and End-Day Closing Greeting. In this study, the PING Habituation Model was developed as a habituation model that integrates greetings, greetings, and behavioral demands into the learning routine. The development is directed to answer the need for character habituation that has a clear implementation point, target behavior, and sequence of actions.

Pre-Class Greeting is carried out at the beginning of learning to build the child's readiness to participate in the activity. The teacher gives greetings, greetings, and a brief reminder about the readiness to participate in the activity; the child responds to the greeting, puts items in place, and prepares to learn. The implementation follows the initial routine of the class and is not given as an additional learning session with a separate duration. Inter-Class Transition Greeting is carried out when the child changes activities by emphasizing order, obedience to instructions, equipment management, and readiness to follow the next activity. End-Day Closing Greeting is carried out at the end of learning to get used to the child ending the activity in an orderly and responsible manner. Thus, PING does not place greetings

and greetings as the final goal, but uses them as an entrance to build observable character behavior.

The gap in this study lies in the lack of studies that operationalize the habituation of 3S/5S into a specific learning time structure and test changes in disciplinary behavior and responsibility through a comparison of conditions before and after the application of the model. This study specifically places the transition of activities as the main context of habituation because in these situations children get repeated opportunities to practice obedience to instructions, regularity, equipment management, and readiness to follow the next activity.

Based on these gaps, this study aims to analyze the changes in discipline and responsibility of children aged 5–6 years after the implementation of the PING Habituation Model. The focus of the analysis is directed at changes in behavioral scores before and after the application of the model, with special attention to behaviors that arise during learning routines and activity transitions.

METHOD

Research Design

This study uses a quantitative approach with a pre-experimental study design in the form of a one-group pretest-posttest. This design was chosen to identify changes in children's discipline and responsibilities before and after the implementation of the PNG Habituation Model. The research design can be described as follows:



Figure 1. Research Design

This study did not involve a control group or a comparison group, the observed changes were interpreted as changes in scores before and after the application of the PING Habituation Model, not as definitive evidence of the cause-and-effect relationship or causal effectiveness of the model.

Place and Time of Research

The research was carried out at Seroja Kindergarten located in Rambah District, Rokan Hulu Regency, Riau. Data collection was carried out from July 13, 2026 to August 24, 2026, which included *pretest activities*, the application of the PING Habituation Model, and *posttest*. The PING Habituation Model was applied for 34 days of effective learning and was integrated into children's routine learning activities. The implementation of the model is carried out through three stages, namely *Pre-Class Greeting*, *Inter-Class Transition Greeting*, and *End-Day Closing Greeting*.

Research Participants

The study participants amounted to 15 children aged 5–6 years who were members of group B of Seroja Kindergarten, consisting of 8 boys and 7 girls. The selection technique of participants used total sampling, namely all children of group B of Seroja Kindergarten who met the research criteria were involved as participants. These criteria included children who participated in learning activities during the research period and followed the entire series of measurements *Pretest*, the application of the PING Habituation Model, and *posttest*. All participants received the same treatment through the application of the PING Habituation Model which was integrated into their daily learning routine.

Research Instruments

The main instrument used in this study is a behavior observation sheet given at the *pretest* and *posttest* stages. In this study, operational discipline is defined as the ability of children to show behavior in accordance with the rules and demands of learning activities, which is observed through four indicators, namely (1) obeying the rules, (2) starting activities after receiving instructions, (3) behaving orderly during transition activities, and (4) following a series of activities until completion. Operational responsibility is defined as the ability of children to carry out obligations related to learning activities and the use of activity equipment, which is observed through four indicators, namely (1) completing tasks, (2) carrying out tasks independently, (3) maintaining the goods or equipment used, and (4) tidying up the equipment after use.

Each indicator is scored on a scale of 1–4, so the total score that may be obtained for each variable is in the range of 4–16. Behavioral observations are used as the primary data source, while interviews with teachers and documentation are used as supporting data.

Research Procedure

This research was carried out through four main stages, namely the preparation stage, *pretest*, application of the PING Habituation Model, and *posttest*. The research procedure was systematically prepared to obtain data on changes in children's discipline and responsibility before and after the implementation of the PING Habituation Model.

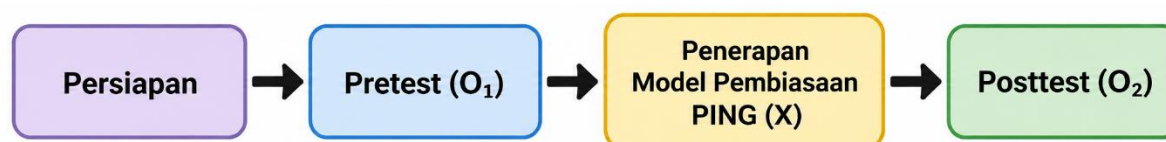


Figure 2. Schematic of Research Procedure

Preparation Stage

In the preparation stage, the researcher coordinated with the teachers of class B of Seroja Kindergarten regarding the implementation of research and learning activities that will be the context of the implementation of the PING Habituation Model. The researcher also prepared a tool for the implementation of the PING Habituation Model and a behavioral observation sheet used to measure children's discipline and responsibility. The observation sheet instrument and PING Habituation Model device were validated by two experts who have competence in the field of early childhood education and language. The validation results showed that the instrument was suitable for use after improvements were made according to the validator's suggestion.

Tahap Pretest

The *pretest* is carried out before the implementation of the PING Habituation Model to obtain an initial picture of the child's discipline and responsibility. The measurement is carried out through observation of the child's behavior during learning activities using the observation sheet that has been prepared. The *pretest results* are used as preliminary data which is then compared with the results of the *posttest*.

Stages of Implementation of the PING Habituation Model

The PING Habituation Model was applied for 34 days and integrated into routine learning activities in group B of Seroja Kindergarten. The application of the model consisted of three stages of habituation, namely:

Pre-Class Greeting

It is carried out at the beginning of the learning activity to build the child's readiness to participate in the activity. At this stage, the habit of greetings and greetings is used as part of the initial routine before the child participates in learning.

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Inter-Class Transition Greeting

It is carried out at the time of transfer between learning activities. The teacher gives transitional signs or instructions and directs the sequence of actions; the child stops the previous activity, listens to and follows the teacher's instructions, tidy up or organizes the equipment used, moves in an orderly manner, and prepares to take part in the next activity. This stage is an important part of the implementation of PING because the transition provides the child with repeated opportunities to practice disciplined behavior and responsibility in real learning situations. The duration follows the need for the transfer of activities in the classroom routine and is not recorded as a separate session.

End-Day Closing Greeting

It is carried out at the end of the learning activity to accustom the child to complete the activity in an orderly manner, tidy up the environment or equipment used, and end the learning activity with an orderly and responsible attitude before leaving the school environment. The teacher gives a closing reminder and directs the order of activities; the child responds to the closing greeting, completes the obligation, tidies the equipment, and prepares to leave the classroom in an orderly manner. The implementation follows the end of class routine and is not given as an additional session with a separate duration.

Tahap Posttest

After the entire series of PING Habituation Model implementation for 34 days is completed, a *posttest* is carried out to re-measure the child's discipline and responsibility. The measurement uses the same behavior observation sheet as the instrument in the *pretest* stage. The *posttest* score is then compared with the *pretest* score to identify changes in the child's discipline and responsibility after the period of implementation of the PING Habituation Model.

Data Collection Techniques

Research data was obtained through direct observation of children's behavior in the *pretest* and *posttest* stages. During the application of the model, daily monitoring was carried out to record the implementation of the three phases of PING. Teacher interviews and documentation were used as supporting information for the implementation process.

Data Analysis Techniques

The research data was analyzed using descriptive statistics and inferential statistics. Descriptive analysis was used to describe *pretest* and *posttest* scores through mean values and standard deviations, as well as to determine the magnitude of score changes between before and after the application of the PING Habituation Model.

The normality test on the *difference in pretest-posttest scores* was carried out using the Shapiro-Wilk test. The results of the normality test became the basis for determining the inferential analysis technique used. Based on the results of the normality test and consideration of the characteristics of paired data with a relatively small number of samples, the Wilcoxon Signed-Rank test was used as the main inferential analysis to compare pretest and posttest scores on discipline and responsibility variables.

In addition, the *paired-samples t-test* was performed as a sensitivity analysis to see the consistency of the test results. The magnitude of the standardized change was also calculated using Cohen's *d* to provide additional information regarding the magnitude or magnitude of the change in score after the application of the PING Habituation Model.

Model Implementation

The implementation of the PING Habituation Model was monitored for 34 effective days of learning. The three PING phases, namely *Pre-Class Greeting*, *Inter-Class Transition Greeting*, and *End-Day Closing Greeting*, were recorded separately. In each phase, one main observation opportunity per day was determined to maintain consistency in the recording of implementation. Thus, there were 34 observation opportunities for each phase and 102

observation opportunities overall (34 days × 3 phases). The percentage of implementation was calculated based on the number of opportunities implemented compared to all the observation opportunities set. Implementation data was used to provide an overview of the consistency of the implementation of the PING Habituation Model during the treatment period. Data collection is carried out in routine learning activities so as not to interfere with children's activities. Behavioral observation is focused on behaviors that arise naturally during learning, while the application of the model is carried out in collaboration with teachers. Thus, the implementation of PING is monitored as part of the daily routine, while the measurement of changes in discipline and responsibility is still carried out through *pretest* and *posttest* conditions.

FINDINGS AND DISCUSSION

Results

Implementation of the PING Habituation Model

The implementation of the PING Habituation Model was carried out for 34 days through three phases, namely *Pre-Class Greeting*, *Inter-Class Transition Greeting*, and *End-Day Closing Greeting*. Monitoring was carried out every day to determine the implementation of each phase. The results of monitoring showed that out of 102 implementation opportunities, as many as 99 opportunities were implemented, resulting in a model implementation rate of 97.1%. Overall, the three PING phases could be applied relatively consistently during the research period.

Table 1. Implementation of the PING Habituation Model

PING Model Phase	Opportunities	Implemented	Implementation
<i>Pre-Class Greeting</i>	34	34	100,0%
<i>Inter-Class Transition Greeting</i>	34	33	97,1%
<i>End-Day Closing Greeting</i>	34	32	94,1%
Total	102	99	97,1%

The highest implementation was found in the *Pre-Class Greeting* phase, which was carried out on all 34 occasions (100.0%). The *Inter-Class Transition Greeting* phase was carried out on 33 out of 34 occasions (97.1%), while the *End-Day Closing Greeting* was carried out on 32 out of 34 occasions (94.1%). These results showed that the three PING phases could be applied relatively consistently in the learning routine during the study period, with the highest implementation in the opening phase and slightly lower in the transition and closing phases.

Changes in Discipline and Children's Responsibilities

The results of the descriptive analysis showed an increase in scores in both character dimensions after the application of the PNG Habituation Model. The average discipline score increased from 7.60 (SD = 1.40) at the *pretest* to 13.87 (SD = 1.30) at the *posttest*. The increase showed an average change of 6.27 points, or about 82.5% compared to the average *pretest* score.

In the responsibility dimension, the average score increased from 7.67 (SD = 1.29) in the *pretest* to 13.07 (SD = 1.03) in the *posttest*. Thus, there was an average increase of 5.40 points, or about 70.4% compared to the average *pretest* score. Descriptively, both results showed a considerable shift in score from the initial condition to the condition after the application of the PNG Habituation Model. The increase in the discipline and responsibility score showed a change in behavior observed during the model application period. However, the percentage increase was a change relative to the *pretest* score and was not used as an *effect size* measure. Further testing was conducted using inferential analysis to find out whether the *difference in pretest* and *posttest* scores was statistically significant.

Table 2. Changes in Children's Discipline and Responsibility Scores

Variabel	N	Pretest Mean (SD)	Median	Min - Max	IQR	Posttest Mean (SD)	Median	Min - Max	IQR	Mean	Increase (%)
Discipline	15	7,60 (1,40)	8,00	5-10	1,50	13,87 (1,30)	14,00	12-16	2,00	6,27	82,5
Responsibilities	15	7,67 (1,29)	8,00	6-10	2,00	13,07 (1,03)	13,00	12-15	1,50	5,40	70,4

Based on Table 2, there was an increase in children's discipline and responsibility scores between the *pretest* and *posttest* measurements. In the discipline variable, the average score increased from 7.60 (SD = 1.40) to 13.87 (SD = 1.30), with the median increasing from 8.00 to 14.00. The score range also changed from 5–10 in the *pretest* to 12–16 in the *posttest*, with IQR values of 1.50 and 2.00, respectively. Meanwhile, the average responsibility score increased from 7.67 (SD = 1.29) to 13.07 (SD = 1.03), while the median increased from 8.00 to 13.00. The range of responsibility scores changed from 6–10 to 12–15, with an IQR of 2.00 on the *pretest* and 1.50 on the *posttest*.

Overall, the average change showed an increase of 6.27 points in the discipline or about 82.5% compared to the *pretest* score, while responsibility increased by 5.40 points or about 70.4%. These descriptive findings show a shift in the score to a higher direction after the application of the PNG Habituation Model. However, this percentage is a change relative to the initial score and not a measure of *effect size*. Therefore, inferential statistical testing was carried out to determine the significance of changes in *pretest* and *posttest* scores.

Inferential Test Results

Before testing the difference in *pretest* and *posttest* scores, a normality test was first performed on *difference scores* using Shapiro-Wilk. The test results showed that the difference scores on the discipline variable were not normally distributed ($W = 0.807$; $p = 0.0046$), while the difference score on the responsibility variable did not show a significant deviation from the normal distribution ($W = 0.883$; $p = 0.0518$). Given the relatively small sample size ($n = 15$) and to use a consistent approach in comparing paired scores, the Wilcoxon Signed-Rank test was used as the primary inferential analysis.

Table 3. Wilcoxon Signed-Rank Test Results on Discipline and Responsibility Scores

Variabel	Median Pretest	Median Posttest	W	Z	P	r
Discipline	8,00	14,00	0,00	-3,41	0,0005	0,88
Responsibilities	8,00	13,00	0,00	-3,44	0,0005	0,89

The results of the Wilcoxon Signed-Rank test showed a significant difference between the *pretest* and *posttest* scores in the two variables studied. In the discipline variable, the value of $W = 0.00$ with $p = 0.0005$ was obtained, while in the responsibility variable, $W = 0.00$ with $p = 0.0005$ was obtained. Both *p values* were smaller than 0.05, so there was a significant difference between the scores before and after the application of the PNG Habituation Model. These results reinforce the previous descriptive finding that the discipline and responsibility scores increased after the model application period.

To provide additional information about the magnitude of the change, this study also calculated Cohen's *dz* based on the difference in *pretest* and *posttest* scores. The results showed that Cohen's *dz* value was 6.07 for discipline and 6.52 for responsibility. This value showed a very large standardized change in both variables. However, the *effect size* value needs to be interpreted carefully because the study used a single group without a control group and involved a relatively small number of participants. Thus, Cohen's *dz* value describes the magnitude of changes in the group from before to after application, not a measure of the PNG Model's superiority over other treatments or conditions.

As an additional reporting for the nonparametric test, the Wilcoxon effect size was calculated using the formula . The results of the analysis showed a Z-value of -3.41 for the

discipline variable and -3.44 for the responsibility variable. With a total of 15 participants, an effect size of $r = 0.88$ for discipline and $r = 0.89$ for responsibility was obtained. Both values indicate large effect sizes. However, this effect size needs to be interpreted carefully because the study used a one-group pretest-posttest design without a control group and involved a relatively small number of participants. Therefore, the r -value describes the magnitude of the change in scores in the group from pretest to posttest and cannot be interpreted as the magnitude of the advantage of the PING Habituation Model over other conditions or treatments. $r = \frac{z}{\sqrt{N}}$

In the sensitivity analysis, a *paired-samples t-test* was performed to see the consistency of parametric test results with Wilcoxon results. The results showed that there was a significant difference between *pretest* and *posttest* scores in *disciplines* ($t(14) = 23.50$; $p < 0.001$) and *responsibility* ($t(14) = 25.26$; $p < 0.001$). These results are in line with the findings of the Wilcoxon test and show that the direction of the conclusion regarding the change in score remains consistent in both analysis approaches.

Overall, the results of descriptive and inferential analyses showed an increase in discipline and responsibility scores after the implementation of the PING Habituation Model. The increase was supported by the results of the Wilcoxon test which showed significant differences in the two variables. However, since the study used a *one-group pretest-posttest* design without a control group, these findings are interpreted as a change in scores that occurred during the period of implementation of the PING Habituation Model, rather than as definitive causal evidence regarding the effectiveness of the model.

Changes to Each Discipline Indicator

Analysis at the indicator level showed that all discipline indicators increased. The indicator complied with the rules, increasing from 1.73 to 3.27 or by 1.53 points. The indicator started the activity after receiving instructions, increasing from 1.73 to 3.33 or by 1.60 points. The indicator was orderly during the transition, increasing from 1.93 to 3.53 or by 1.60 points. Meanwhile, the indicator followed the series of activities until completion, increasing from 2.20 to 3.73 or by 1.53 points.

Table 4. Changes in Discipline Indicator Scores

Discipline Indicators	Pretest	Posttest	Score Difference
Obeys the rules	1,73	3,27	+1,53
Start an activity after instruction	1,73	3,33	+1,60
Order during transition	1,93	3,53	+1,60
Participating in a series of activities until the end	2,20	3,73	+1,53

The largest increase was found in the indicators of starting activities after instruction and order during the transition, each of 1.60 points. Both indicators are directly related to the transition situation which is one of the main points of the implementation of the PING Model.

Changes to Each Liability Indicator

The four responsibility indicators also showed an increase after the implementation of the PNG Habituation Model. The indicator of completing the task, increased from 2.13 to 3.27 or by 1.13 points. The indicator carried out the task independently, increasing from 1.73 to 3.20 or by 1.47 points. The indicator of keeping goods in place, increased from 2.07 to 3.20 or by 1.13 points. The largest increase was in the indicator of tidying up the tool after use, from 1.73 to 3.40 or by 1.67 points.

Table 5. Changes in Responsibility Indicator Scores

Indicators of Responsibility	Pretest	Posttest	Score Difference
Completing tasks	2,13	3,27	+1,13
Perform tasks independently	1,73	3,20	+1,47

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Taking care of the goods	2,07	3,20	+1,13
Tidying up the tools	1,73	3,40	+1,67

The findings show that the biggest change in the responsibility aspect occurred in behaviors related to equipment management after an activity, i.e. tidying up the tools that have been used.

Difference Test Results and Effect Size

The Shapiro-Wilk test was conducted on the difference score between *pretest* and *posttest*. The test results showed that the distribution of discipline difference scores did not meet the assumption of normality with values $W = 0.807$ and $p = 0.0046$. Meanwhile, the responsibility difference score showed $W = 0.883$ and $p = 0.0518$. Based on these results, the Wilcoxon Signed-Rank test was used as the main analysis to determine the difference in scores before and after the application of the PING Habituation Model. The test results showed a value of $W = 0$ with $p = 0.0005$ in both discipline and responsibility. Thus, there was a significant difference between the *pretest* and *posttest* scores on the two variables. As a sensitivity analysis, the paired-samples *t*-test also showed significant results, namely $t(14) = 23.50$; $p < 0.001$ for discipline and $t(14) = 25.26$; $p < 0.001$ for responsibility. These results were consistent with the Wilcoxon Signed-Rank test and strengthened the finding that there was a difference in *pretest* and *posttest* scores in the two variables.

Effect size analysis using *standardized mean change* (Cohen's *dz*) showed a very large magnitude of change, namely 6.07 in discipline and 6.52 in responsibility. This value was used as additional information to describe the magnitude of the change in score after the application of the PING Habituation Model. The interpretation of effect size was carried out by considering a relatively limited number of subjects ($n = 15$) and the use of a *one-group pretest-posttest* design. Therefore, the main interpretation of the study is based on changes in *pretest-posttest* scores and Wilcoxon test results, while *effect size* is used to complete the picture of the magnitude of change in both variables.

Discussion

The Implementation of PING as an Integrated Habit in the Learning Routine

The implementation of the PING Habituation Model of 97.1% shows that the model can be applied consistently in the learning routine during the study period. The high implementation is important because character habituation in early childhood does not take place through a single instruction, but requires the repetition of behavior in relatively consistent situations. In this study, PING was not given as an additional activity that stood alone, but was placed at three activity points that did occur in the child's daily life, namely before the activity, when changing activities, and when ending the activity.

These findings strengthen the direction of previous research on the habituation of discipline characters. Nadlifah et al. (2023) examined the habituation of discipline character in early childhood, while Rusiadi (2024) discussed the application of habituation methods in instilling discipline in children aged 5–6 years. Mulyani et al. (2025) also placed teachers' strategies as an important part of building children's discipline. Thus, the results of this study provide development in the study through the placement of habituation in a more specific time structure, not just as a general habit in the school environment.

The strength of PING mainly lies in its habituation structure. This study designed three phases, each of which has implementation steps, the role of the teacher, and the expected behavioral indicators. This means that the success of the implementation is not only determined by the presence of greetings, smiles, and greetings, but by the consistency of the teacher in connecting the routine with the behavior that is to be formed.

Improving Children's Discipline after the Implementation of the PING Model

The increase in discipline scores showed a positive change in children's discipline behavior after the period of implementation of the PING Habituation Model. The average

discipline score increased by 6.27 points, from 7.60 in the pretest to 13.87 in the posttest. The results of the Wilcoxon Signed-Rank test also showed a significant difference between the pretest and posttest scores ($p = 0.0005$). In this study, discipline was operationalized through observable behavior, namely obeying the rules, starting activities after receiving the teacher's instructions, behaving orderly during the transition, and following a series of activities until completion.

The findings are in line with previous research that places habituation as one of the important strategies in the development of early childhood discipline character. Nadlifah et al. (2023) emphasize the role of habituation in the development of disciplined character, while Mulyani et al. (2025) and Rusiadi (2024) highlight the importance of consistent routines and teacher strategies in shaping children's disciplinary behaviors. This study complements these findings by placing habituation not only as part of school culture in general, but specifically at transitional moments in the learning process.

The findings at the indicator level provide a more specific picture. The largest increase was found in the indicators of starting activities after receiving instructions and behaving in an orderly manner during the transition, each of which increased by 1.60 points. Both behaviors are directly related to the application of the Inter-Class Transition Greeting stage, which is a habituation that is carried out when the child moves from one activity to the next. At this stage, children are repeatedly accustomed to stopping previous activities, paying attention to the teacher's instructions, arranging equipment, moving in an orderly manner, and preparing for the next activity. Thus, the learning transition can be a pedagogical moment that provides repeated opportunities for children to practice disciplined behavior in the context of real activities.

Nonetheless, such improvements need to be interpreted proportionately. Because the study used a one-group pretest-posttest design without a comparator group, the changes found could not be fully attributed to the application of the PNG Habituation Model alone. Other factors, such as the child's learning experience during the study, interaction with teachers, and the learning environment, may also contribute to the observed behavioral changes.

Transition of Activities as a Space for Discipline Practice

The results at the indicator level showed that the greatest improvement in the discipline aspect was in the ability to start activities after instruction and order during the transition, by 1.60 points each. These findings are important because both behaviors are directly related to the phase *Inter-Class Transition Greeting*, which places the process of moving activities as one of the key contexts of habituation in the PING Model.

In the context of the PNG Habituation Model, the transition is not positioned as free time between two activities, but is used as a pedagogical moment to strengthen the child's discipline and responsibility. At this stage, the child is accustomed to stopping activities, tidying up the equipment, listening to the teacher's instructions, moving in an orderly manner, and preparing to take part in the next activity. This view is in line with Kim et al. (2024) who emphasize the importance of structured support and direction to help children understand the expected behavior during the transition. Yıldız et al. (2024) also show that transitional activities in preschool learning play a role in supporting the learning process, social cohesion, and classroom management. Consistent habituation in transition situations provides children with the opportunity to practice positive behaviors directly in the context of daily learning activities.

The observation findings were reinforced by the teacher's information during the implementation of PING. The teacher observed that at the beginning of the implementation, some children still needed directions to stop activities, tidy up their equipment, and follow instructions when there was a change of activities. Along with the consistent implementation of habituation, children began to become more accustomed to responding to transition signs, following directions, and preparing themselves for the next activity. This information

reinforced the observation findings that behavioral changes were also seen in daily learning routines.

Thus, the improvement in indicators related to transition gives an idea that behavioral changes after the implementation of PING are not solely related to greeting or greeting activities, but also to integrating social habits and behavioral demands in the process of moving activities. Transition becomes a space for children to practice discipline and responsibility through concrete actions, such as following instructions, tidying up equipment, and moving in an orderly manner. These findings are one of the contributions of the research because they show that 3S/5S habituation can be developed not only as a school culture in general, but also integrated in a more structured way into the moment of learning transition.

Increased Responsibility through Live Experience

The responsibility score also showed an increase after the application of the PNG Habituation Model. The average responsibility score increased from 7.67 in *the pretest* to 13.07 in *the posttest*, with an increase of 5.40 points. The results of the Wilcoxon Signed-Rank test showed a significant difference between the two measurement times ($p = 0.0005$). In this study, responsibility was observed through the child's concrete behavior, namely completing tasks, carrying out activities independently, maintaining the equipment used, and tidying up the tools after use.

The largest improvement was found in the indicator of tidying up the tool after use, from an average score of 1.73 to 3.40, or an increase of 1.67 points. These findings are relevant to the structure of the PING Habituation Model because children repeatedly face situations that require them to complete an activity, manage the equipment that has been used, and prepare themselves to participate in the next activity. The experience that is repeated provides an opportunity for children to learn to show responsibility through direct actions, not just through giving instructions or verbal explanations.

These findings are in line with Dewi & Fajriah (2025) who show the relevance of habituation and direct example in the development of children's responsibility. It is also in line with Pusparini et al. (2026) who emphasize the role of daily routines in helping to internalize responsible behavior in children. This research contributes by integrating responsible behavior into a structured habituation model and applied to various stages of the learning routine, especially when the child completes the activity and prepares for the next activity.

However, as with the disciplinary findings, the increased responsibility in this study needs to be understood as the observed change between the conditions before and after the implementation of PING. Because the study did not use a control group, this study could not confirm that the change was solely caused by the PING habituation model.

The Contribution of the Three-Phase Structure of PING in Character Habituation

The contribution of the PING Habituation Model lies in its operational implementation structure. PING does not place greetings and social interactions only as part of a stand-alone school culture, but integrates them into three important points in the learning routine, namely before learning, during the transition between activities, and at the end of the learning activity. The structure allows the child to acquire similar experiences and behavioral demands repeatedly at different times during their time in the school environment.

The aspect that characterizes the PING Habituation Model is Inter-Class Transition Greeting, which is the application of habituation when moving between learning activities. This stage turns the transition time which is generally seen as a break between activities into a pedagogical opportunity to develop children's character. At this stage, children are accustomed to stopping previous activities, listening to the teacher's instructions, tidying up the equipment, moving in an orderly manner, and preparing to take part in the next activity.

Thus, the contribution of the PING Habituation Model does not solely lie in the use of greetings as a form of social interaction, but in the operationalization of habituation into character behaviors that can be observed in the learning routine. Through this repetitive and

contextual structure, PING provides space for children to practice discipline and responsibility directly in daily learning situations.

With this structure, the PING Habituation Model complements the 3S/5S habituation approach that was previously more positioned as part of the school's social culture, by directing it to specific learning routines and observable character behaviors, especially at the moment of transition between activities.

Consistency of Implementation and Behavior Change

The PING implementation rate of 97.1% indicates that the application of the model lasted relatively consistently for 34 days. This consistency provides an important context in understanding behavior change as the child gains the opportunity to practice the same behavior repeatedly in the learning routine. Thus, the high implementation indicates that the model can be applied consistently over the study period, although the findings cannot yet be used to establish a direct cause-and-effect relationship.

The Meaning of Findings in the Context of Early Childhood Education

Overall, the results showed an increase in discipline and responsibility of children aged 5–6 years after the implementation of the PING Habituation Model. These changes were shown by an increase in scores of both variables and significant statistical test results. These findings reinforce the idea that character education in early childhood can be integrated into learning routines, not just provided through special character education activities.

The practical implication is that teachers can take advantage of moments that have often been considered administrative or the change of activities into opportunities to build character. When a child changes activities, for example, the teacher not only directs the child to change places immediately, but can make the process an exercise in obeying instructions, tidying up equipment, taking care of things, and preparing independently.

With this approach, PING offers a relatively simple form of habituation because it does not require special separation of learning time. The model is placed in a routine that has already occurred in the classroom. This supports the characteristics of PING as a practical model and has the potential to be adapted in other PAUD units.

Limitations of PING Effectiveness Interpretation

This study has several limitations that are considered in interpreting the findings. First, the study uses a *one-group pretest–posttest* design without involving a control group or a comparison group. Therefore, the observed changes cannot be fully attributed to the application of the PING Habituation Model, because there is a possibility of influencing other factors during the research period, such as the child's natural development (*maturation*), learning experience, interaction with teachers, and other contextual factors.

Second, the study involved a relatively limited number of participants, namely 15 children aged 5–6 years in one class group. This condition limits the ability to generalize the findings of the study to a wider population of children aged 5–6 years with different learning characteristics and environments.

Third, this article only focuses on the analysis on two dimensions of positive character, namely discipline and responsibility, while the PING Habituation Model in a broader study is directed at strengthening children's positive character. Thus, this study has not described changes in other positive character dimensions.

Based on these limitations, further research is recommended to use a control group or comparison group, involving a more diverse number and characteristics of participants, and conduct *follow-up measurements* to determine the sustainability of behavior changes after the implementation of the PING Habituation Model is discontinued.

CONCLUSIONS

The application of the PING Habituation Model over 34 days showed an increase in the average discipline score of children aged 5–6 years from 7.60 to 13.87 and responsibility

from 7.67 to 13.07. The results of the Wilcoxon Signed-Rank test showed a significant difference between pretest and posttest scores on both variables ($p = 0.0005$). These findings indicate that the integration of structured habituation into daily learning routines, especially during transitions between activities, provides repeated opportunities for children to practice disciplined and responsible behaviors. However, these results need to be interpreted as changes in scores before and after implementation, rather than as definitive evidence of the model's causal effectiveness, given that the study used a one-group pretest-posttest design, without a control group, and involved a limited number of participants. Therefore, the PING Habituation Model has the potential to be a structured habituation approach, but follow-up research with comparison groups, larger and more diverse participants, and follow-up measurements is needed to test the sustainability of behavior change.

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