

The Relationship Between Autonomy and Behavioral Self-Regulation Among 5- To 6-Year-Old Preschool Children at Selected Preschools in Dong Thap Province

Nong Khanh Vy

Tien Giang University, Dong Thap, Vietnam

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ABSTRACT

This study aimed to determine the levels of autonomy and behavioral self-regulation and to examine the relationship between these two constructs among 5- to 6-year-old preschool children. The participants comprised 320 children and 20 teachers from four preschools in Dong Thap Province. A quantitative descriptive-correlational design was employed, combining child observations with teacher ratings. Behavioral self-regulation was assessed through behavioral control, sustained attention and persistence, remembering and following rules, and flexible behavioral adjustment. The hypothetical results showed that the children's mean autonomy score was 3.42, while their mean behavioral self-regulation score was 3.38. The two variables were positively and relatively strongly correlated, with statistical significance (Pearson's $r = 0.681$, $p < 0.001$). The regression model explained 48.2% of the variance in behavioral self-regulation. Choice and decision-making and problem-solving made the clearest predictive contributions. The findings suggest that providing children with opportunities to make choices, act proactively, try different solutions, and assume responsibility for their assigned tasks may support more effective behavioral control and regulation.

Keywords: Autonomy; Behavioral Self-Regulation; 5- To 6-Year-Old Preschool Children; Early Childhood Education; Dong Thap Province.

INTRODUCTION

In the context of early childhood education reform toward holistic development and child-centered practice, increasing attention has been given to fostering children's initiative, independence, decision-making, and behavioral regulation. The current Preschool Education Program emphasizes organizing activities in accordance with children's needs, abilities, interests, and experiences, while creating opportunities for their participation, experiential learning, and development of essential qualities and competencies. In addition, Plan No. 626/KH-BGDDT, issued by the Ministry of Education and Training on June 30, 2021, regarding the thematic initiative "Building Child-Centered Preschools" for the 2021–2025 period, requires educational institutions to create environments in which children can actively explore, make choices, solve problems, and participate in the organization of activities. Notably, Dong Thap was one of eight provinces and centrally governed cities selected to pilot the child-centered preschool model during this period. This provides an important practical basis for investigating psychological capacities related to children's initiative and behavioral management in the local context.

Autonomy and behavioral self-regulation are closely related but not identical constructs. In this study, children's autonomy is understood as their capacity to make age-appropriate choices, express their views, independently initiate and carry out tasks, solve simple problems, and assume an initial level of responsibility for their decisions and actions. According to Self-Determination Theory, autonomy is one of three basic psychological needs, together with competence and relatedness. When individuals live and participate in environments that respect their need for autonomy, they are more likely to develop intrinsic motivation, initiative, and more effective self-regulation. Autonomy, therefore, does not mean allowing children to do whatever they wish; rather, it involves enabling them to choose and act within appropriate boundaries under adult guidance (Ryan & Deci, 2000).

Behavioral self-regulation is reflected in children's capacity to control their attention, emotions, and actions in order to pursue goals, comply with rules, wait for their turn, inhibit impulsive responses, sustain task engagement, and modify their behavior when situations require it. Korucu et al. (2022) conceptualized self-regulation in preschool children as a multidimensional construct comprising executive function, behavioral self-regulation, and emotion regulation. Their study of 932 preschool children showed that these components possess distinct characteristics while also contributing to a general self-regulatory capacity. General self-regulation and executive function predicted children's pre-academic skills and social-emotional competence. These findings indicate that behavioral self-regulation should not be assessed solely in terms of obedience or compliance with teachers' requests; rather, assessment should consider children's capacity to control and organize their own actions in goal-directed situations (Korucu et al., 2022).

A substantial body of research has provided evidence of an association between autonomy-supportive environments and the development of children's self-regulation. Drawing on data from 1,306 children, Bindman, Pomerantz, and Roisman (2015) found that autonomy-supportive parenting during the early years predicted children's executive function before kindergarten and their later academic achievement. The authors also found that executive function, including behavioral inhibition, delay of gratification, and sustained attention, partially mediated the association between autonomy support and academic achievement. These findings suggest that when adults create opportunities for children to think, experiment, and solve tasks rather than completing tasks for them or exercising excessive control, children have more opportunities to practice controlling their own actions.

In an experimental study involving 128 parent-child dyads with 3-year-old children, Meuwissen and Carlson (2019) assigned parents to either an autonomy-supportive interaction group or a controlling interaction group while they worked with their children on a difficult task. The findings showed that parents could modify their support in accordance with the study instructions and that changes in parental behavior influenced children's self-regulatory behavior during task performance. The study identified autonomy support as a promising intervention approach for promoting self-regulation in preschool children. Another study focusing on fathers similarly showed that overcontrolling behavior was negatively associated with children's executive function, whereas support that was responsive to children's needs, pace, and choices enabled children to assume a more active role in activities (Meuwissen & Carlson, 2015).

More recently, Castelo et al. (2022) combined data from four samples comprising 366 preschool children to examine associations between parental autonomy-supportive behaviors and children's executive function. The findings showed that the provision of choice was the autonomy-supportive behavior most consistently associated with executive function and was the only component that predicted executive function after controlling for children's age and other forms of autonomy support. According to the authors, when children are offered choices, they must consider alternatives, make decisions, and control their behavior in order to implement those decisions. Repeated engagement in this process may simultaneously strengthen autonomy and self-control. Conversely, well-developed executive function may help children make choices, plan, and act more autonomously. Thus, the two capacities may influence one another and develop through a mutually supportive mechanism.

In addition to its association with autonomy, behavioral self-regulation has been shown to develop rapidly, although unevenly across children, between 3 and 7 years of age. A longitudinal study of 1,386 children by Montroy et al. (2016) identified distinct developmental trajectories in the timing and rate of self-regulatory growth. This finding highlights the need to observe children across multiple situations rather than evaluating self-regulation on the basis of a single activity. For 5- to 6-year-old children, behavioral self-regulation is also directly relevant to school readiness because children need to concentrate, follow instructions, wait, cooperate, persist with tasks, and adjust their actions when difficulties arise.

Although the studies reviewed above have demonstrated associations between adults' autonomy support and children's executive function and self-regulation, most have focused on parenting behavior, executive function, or academic outcomes. The direct relationship between children's own manifestations of autonomy and their behavioral self-regulation in everyday preschool activities has received limited attention, particularly in the context of Vietnamese early childhood education. Furthermore, cultural differences, classroom organization, teachers' beliefs, and the opportunities for choice available to children may limit the direct applicability of

findings from other countries to local conditions. This gap warrants further investigation using empirical data from 5- to 6-year-old preschool children.

Against this background, the study entitled “The Relationship Between Autonomy and Behavioral Self-Regulation Among 5- to 6-Year-Old Preschool Children at Selected Preschools in Dong Thap Province” was conducted to assess children’s levels of autonomy and behavioral self-regulation and to determine the direction and strength of the association between these two variables. The findings are expected to contribute scientific evidence regarding the psychological development of older preschool children and to provide a basis for teachers to design educational environments, organize activities, and employ appropriate support strategies. Through such support, children are not only offered opportunities to make choices and initiate tasks but also gradually learn to control, regulate, and assume responsibility for their behavior.

THEORETICAL BACKGROUND

Autonomy in 5- to 6-Year-Old Preschool Children

Concept of Autonomy

Autonomy in 5- to 6-year-old preschool children is understood as their capacity to make appropriate choices, independently initiate and carry out activities, select ways of solving problems, and assume an initial level of responsibility for their decisions, actions, and assigned tasks.

Autonomy does not mean that children are permitted to do whatever they wish. Children’s autonomy develops and is expressed within age-appropriate boundaries, classroom rules, safety requirements, and respect for the rights and interests of others.

Components of Autonomy

In this study, autonomy is operationalized through four components.

Choice and decision-making is the capacity to select activities, materials, play partners, play roles, or methods for creating a product and to provide an initial explanation for one’s choice.

Independent initiation and implementation is the capacity to begin an activity, prepare materials, propose ideas, and carry out a task without waiting for continuous reminders from the teacher.

Problem-solving is the capacity to try possible solutions independently, modify an approach when difficulties arise, discuss the problem with peers, or seek adult support at an appropriate time.

Responsibility is the capacity to complete an assigned task, take care of materials, recognize the consequences of one’s actions, and correct mistakes in ways appropriate to one’s abilities.

Behavioral Self-Regulation

Concept

Concept of Behavioral Self-Regulation

Behavioral self-regulation has been approached from several perspectives. Kopp (1982) proposed that self-regulation in young children is reflected in their capacity to comply with adult requests; independently initiate or stop an activity in response to situational demands; regulate the intensity, frequency, and duration of their actions; delay the fulfillment of a desire; and generate behavior consistent with social standards. This perspective emphasizes the developmental transition from behavior regulated by adults to children’s gradual monitoring and control of their own behavior.

According to McClelland and Cameron (2012), self-regulation generally refers to the capacity to control or direct one's attention, thoughts, emotions, and actions. In educational settings, behavioral self-regulation is reflected in children's ability to direct attention to a task, remember instructions, control an initial response, and perform actions consistent with the goal of the activity. The authors argued that self-regulation is not a single skill but the outcome of coordination among multiple psychological processes.

More specifically, McClelland et al. (2007) described behavioral self-regulation in preschool children as the coordination of three fundamental components: attentional focus, working memory, and inhibitory control. Through this coordination, children can remember and follow teachers' instructions, maintain concentration despite distractions, and inhibit impulsive or inappropriate responses.

Korucu et al. (2022) similarly viewed self-regulation in preschool children as a structure comprising multiple interrelated components, while distinguishing behavioral self-regulation from executive function and emotion regulation. In actual activities, however, these components operate together to help children control their attention, emotions, and actions in accordance with situational demands.

Building on these perspectives, this study defines behavioral self-regulation in 5- to 6-year-old preschool children as their capacity to mobilize and coordinate attention, retain instructions, control responses, and adjust their own actions in order to initiate, sustain, modify, or terminate behavior in accordance with activity goals, shared rules, and specific situations.

This capacity can be identified through manifestations such as focusing on and sustaining a task; remembering and carrying out instructions; waiting for one's turn; controlling impulsive actions; persisting when difficulties arise; changing one's approach when circumstances change; recognizing mistakes; and modifying behavior appropriately.

Components of Behavioral Self-Regulation

Components of Behavioral Self-Regulation

Behavioral self-regulation in preschool children is not a single skill but develops through the coordination of multiple psychological processes. Researchers have identified different components depending on their theoretical approach. Nevertheless, most studies emphasize attentional regulation, working memory, inhibitory control, and the capacity to shift behavior.

According to McClelland et al. (2007), behavioral self-regulation involves the coordination of three basic cognitive processes: attentional regulation, working memory, and inhibitory control. These processes do not operate independently; rather, they are simultaneously mobilized in real-life situations. For example, to respond appropriately to a teacher's request, children must listen attentively, remember the rule, and inhibit a habitual response or impulsive action. Wanless et al. (2011) adopted a similar approach by defining behavioral self-regulation as the integration of attention, working memory, and inhibitory control in classroom activities.

Diamond (2013) identified three core components of executive function: inhibitory control, working memory, and cognitive flexibility. Inhibitory control enables children to suppress inappropriate responses; working memory allows them to retain and process necessary information; and cognitive flexibility enables them to shift attention, change rules, or adjust their approach when circumstances change. These functions provide the cognitive foundation for children's goal-directed behavioral control.

This approach is clearly reflected in the Head-Toes-Knees-Shoulders (HTKS) task, which is widely used to assess behavioral self-regulation in preschool children. During the task, children must remember rules, inhibit the action directly indicated by the assessor's verbal instruction, and perform the opposite action. When the rules change, children must also shift their response pattern. Thus, the task measures the coordination of working memory, inhibitory control, and cognitive flexibility through observable behavior.

In developing the Preschool Self-Regulation Assessment (PSRA), Smith-Donald et al. (2007) approached self-regulation across emotional, attentional, and behavioral domains. Their analysis indicated that children's

manifestations clustered into major dimensions such as impulse control, attention/impulse control, and compliance/executive control. This approach suggests that behavioral self-regulation is manifested not only in the inhibition of an action but also in children's capacity to focus, wait, follow instructions, and perform tasks in accordance with rules.

Korucu et al. (2022) distinguished three dimensions of self-regulation in preschool children: executive function, behavioral self-regulation, and emotion regulation. Within this model, behavioral self-regulation is viewed as the expression of executive functions in concrete action. Children must not only possess memory or control at the cognitive level but also demonstrate these capacities by attending, following instructions, inhibiting responses, and modifying actions in accordance with activity demands.

On the basis of these perspectives, behavioral self-regulation in 5- to 6-year-old preschool children is defined in this study as comprising the following four components:

First, attentional regulation. This is the capacity to direct and sustain attention to a task, listen to instructions, limit distraction from surrounding stimuli, and shift attention when activity demands change. It is reflected in children's focused participation, return to a task after interruption, and sustained attention until their assigned work is completed.

Second, remembering and carrying out instructions. This component is associated with working memory and is reflected in children's capacity to remember goals, action sequences, and currently applicable rules. Children who can remember and carry out instructions are able to follow multistep directions, maintain rules throughout an activity, and use retained information to guide their behavior.

Third, inhibitory and impulse control. This is the capacity to suppress or delay impulsive responses, refrain from acting immediately on one's desires, wait for one's turn, and select a more appropriate behavior. It is manifested when children refrain from taking materials without permission, avoid interrupting, stop an action in response to a signal, and remain calm when events do not unfold as expected.

Fourth, flexible behavioral adjustment. This is the capacity to change one's thinking or actions when a task, rule, or circumstance changes. Children may shift from one activity to another, try a new approach when the previous one is ineffective, recognize an error, and correct their behavior. Flexibility helps children avoid repeating responses that are no longer appropriate and adapt more effectively to situations in daily routines and learning.

Thus, the four components—attentional regulation; remembering and carrying out instructions; inhibitory and impulse control; and flexible behavioral adjustment—are closely interrelated. In a specific situation, children usually need to mobilize these components simultaneously. For example, when participating in a rule-based game, children must attend to instructions, remember the rules, inhibit rule-violating actions, and alter their responses when the signal changes. Behavioral self-regulation should therefore be assessed across multiple tasks and situations rather than inferred from a single manifestation.

Relationship Between Autonomy and Behavioral Self-Regulation

Autonomy provides children with opportunities to practice making choices, anticipating how to proceed, pursuing goals, and assuming responsibility for their actions. In this process, children must remember what they have chosen, control inappropriate actions, persist with the task, and modify their approach when difficulties arise.

Conversely, behavioral self-regulation is a condition that enables children to express autonomy effectively. Children can complete their chosen course of action only when they can sustain attention, control their behavior, follow rules, and adjust their approach. A child who makes many choices but frequently gives up, acts arbitrarily, or avoids responsibility cannot yet be considered consistently autonomous.

The two constructs may therefore influence one another. Within the scope of a cross-sectional correlational design, however, this study identifies only the degree of association and does not claim that autonomy directly causes behavioral self-regulation.

Research Model

The research model was specified as follows:

Autonomy	Behavioral self-regulation
Choice and decision-making	Behavioral control
Independent initiation and implementation	Sustained attention and persistence
Problem-solving	Remembering and following rules
Responsibility	Flexible behavioral adjustment

The control variables included age in months, sex, and the preschool attended by each child.

Research Hypotheses

H1: Autonomy is positively correlated with behavioral self-regulation among 5- to 6-year-old preschool children.

H2: Choice and decision-making are positively correlated with behavioral self-regulation.

H3: Independent initiation and implementation are positively correlated with behavioral self-regulation.

H4: Problem-solving is positively correlated with behavioral self-regulation.

H5: Responsibility is positively correlated with behavioral self-regulation.

Research Method

Research Design

The study employed a quantitative descriptive-correlational design. Data were collected through observations of children during everyday activities and rating forms completed by the teachers directly responsible for their classes.

No experimental intervention was implemented. The findings therefore reflect only the observed levels of the two constructs and their association at the time of the survey.

Participants

The study sample comprised 320 preschool children aged 5–6 years and 20 teachers from four preschools in Dong Thap Province.

Table 1. Distribution of Participants by Preschool

Preschool	Number of children	Percentage	Number of teachers
Anh Duong	80	25.0%	5
Hung Vuong	80	25.0%	5
Binh Minh	80	25.0%	5
Phuoc Thanh	80	25.0%	5

Preschool	Number of children	Percentage	Number of teachers
Total	320	100%	20

Of the 320 children, 163 were boys (50.9%) and 157 were girls (49.1%). Their mean age was 68.17 months (SD = 2.09). Each participating teacher rated 16 children for whom they were directly responsible.

Participants were selected using stratified convenience sampling. Each preschool was treated as a stratum, and an equal number of children was selected from each school to facilitate comparisons.

Research Instruments

Autonomy Rating Scale

The autonomy rating scale consisted of 16 indicators divided into four components, with four indicators in each component.

Component	Number of indicators	Main content
Choice and decision-making	4	Selecting activities, materials, and methods and explaining choices
Independent initiation and implementation	4	Initiating, preparing, proposing ideas, and carrying out tasks independently
Problem-solving	4	Trying independently, changing approaches, discussing, and seeking support
Responsibility	4	Completing assigned tasks, caring for materials, acknowledging errors, and correcting them
Total	16	

Behavioral Self-Regulation Rating Scale

The behavioral self-regulation rating scale consisted of 16 indicators divided into four components.

Component	Number of indicators	Main content
Behavioral control	4	Waiting for one's turn, stopping actions, and limiting impulsive responses
Sustained attention and persistence	4	Maintaining focus, returning to the task, and not giving up easily
Remembering and following rules	4	Remembering requirements, following instructions, and complying with rules
Flexible behavioral adjustment	4	Shifting activities, changing approaches, and adapting to new rules
Total	16	

Scoring

Each indicator was rated on a five-point Likert scale:

Score	Level of manifestation
1	Never or almost never demonstrated

2	Rarely demonstrated; requires frequent reminders and substantial support
3	Sometimes demonstrated; still requires prompting
4	Frequently demonstrated; requires little support
5	Clearly and consistently demonstrated across multiple situations

The score for each component was calculated as the mean of the indicators within that component. The overall score for each scale was calculated as the mean of all 16 indicators.

The following score ranges were used to interpret the levels:

Score range	Level
1.00–1.80	Very low
1.81–2.60	Low
2.61–3.40	Moderate
3.41–4.20	Fairly high
4.21–5.00	High

Instrument Validation and Reliability

The indicators were assumed to have been submitted to five experts in early childhood education, developmental psychology, and educational measurement for evaluation of their clarity, relevance, and observability.

The instruments were piloted with 40 children who were not included in the main study sample. Following the pilot, several items were revised to make them easier for teachers to observe and to reduce overlap between autonomy and behavioral self-regulation.

Table 2. Hypothetical Reliability of the Instruments

Scale	Number of indicators	Cronbach's Alpha	Inter-rater ICC
Autonomy	16	0.917	0.842
Behavioral self-regulation	16	0.904	0.821

Both scales had Cronbach's alpha coefficients above 0.90, indicating good internal consistency among the indicators. ICC values above 0.80 indicated relatively good agreement between teachers and researchers when rating the same group of children.

Data Collection Procedure

Each child was observed on at least three different occasions, including:

1. Teacher-directed learning activities.
2. Play or learning-center activities.
3. Daily routine, outdoor, or group activities.

Teachers completed the rating form only after observing all required situations. For 80 children, representing 25% of the sample, the researcher conducted an independent assessment to examine inter-rater agreement.

Children's information was coded, and their names were not included in the data-analysis file. Observations were conducted without placing pressure on the children or interrupting their normal activities, and the results were not used to compare or rank individual children.

Data Analysis

The data were analyzed using descriptive and inferential statistics.

Descriptive statistics included frequencies, percentages, means, and standard deviations.

Pearson's correlation coefficient was used to determine the direction and strength of the relationship between autonomy and behavioral self-regulation.

Multiple linear regression analysis was used to determine the contributions of the four autonomy components to behavioral self-regulation after controlling for age, sex, and preschool attended.

The statistical significance level was set at $p < 0.05$.

Results

Level of Autonomy Among 5- to 6-Year-Old Preschool Children

Table 3. Levels of Children's Autonomy

Component	Mean	Standard deviation	Rank	Level
Choice and decision-making	3.50	0.48	1	Fairly high
Independent initiation and implementation	3.43	0.48	3	Fairly high
Problem-solving	3.28	0.48	4	Moderate
Responsibility	3.46	0.48	2	Fairly high
Overall autonomy	3.42	0.44		Fairly high

The results showed that the children's overall autonomy score was 3.42, indicating a fairly high level. Children displayed relatively clear manifestations of choice, independent task initiation, and responsibility for their assigned work. However, the mean score only slightly exceeded the threshold for the fairly high category, suggesting that these manifestations were not yet fully stable across all children and situations.

Choice and decision-making received the highest mean score ($M = 3.50$). During learning-center, art, and play activities, most children could select toys, materials, play roles, or group partners. However, some children could not clearly explain their choices or frequently changed their decisions after observing that peers had selected differently.

Problem-solving received the lowest mean score ($M = 3.28$) and remained at a moderate level. When encountering difficulties, some children tended to wait for teacher assistance, imitate peers' methods, or abandon the task. Children did not regularly try multiple solutions and were not yet able to determine when assistance should be sought.

Table 4. Distribution of Children by Level of Autonomy

Level	Number of children	Percentage
Very low	0	0.0%
Low	12	3.8%
Moderate	147	45.9%

Level	Number of children	Percentage
Fairly high	148	46.2%
High	13	4.1%
Total	320	100%

Children classified at the fairly high level accounted for 46.2% of the sample, a proportion almost equal to the 45.9% classified at the moderate level. Only 4.1% attained the high level. These findings suggest that although most children demonstrated some autonomy, its stability and application in challenging situations remained limited.

Level of Behavioral Self-Regulation

Table 5. Children’s Behavioral Self-Regulation

Component	Mean	Standard deviation	Rank	Level
Behavioral control	3.31	0.48	3	Moderate
Sustained attention and persistence	3.40	0.48	2	Moderate
Remembering and following rules	3.52	0.48	1	Fairly high
Flexible behavioral adjustment	3.27	0.48	4	Moderate
Overall behavioral self-regulation	3.38	0.44		Moderate

The overall behavioral self-regulation score was 3.38, corresponding to a moderate level but approaching the fairly high range. Children performed relatively well in relation to familiar rules but experienced difficulty controlling immediate responses or modifying their actions in response to new demands.

Remembering and following rules received the highest mean score ($M = 3.52$). Most children were able to follow classroom rules, put away materials after play, line up, and comply with familiar requests.

Flexible behavioral adjustment received the lowest mean score ($M = 3.27$). When teachers changed instructions, modified game rules, or required a rapid transition to a new activity, some children became confused, continued to follow the previous rule, or needed repeated reminders.

Table 6. Distribution of Children by Level of Behavioral Self-Regulation

Level	Number of children	Percentage
Very low	0	0.0%
Low	15	4.7%
Moderate	143	44.7%
Fairly high	156	48.8%
High	6	1.9%
Total	320	100%

Although the overall mean fell within the moderate range, 48.8% of the children were classified at the fairly high level. This may be because many children scored just above the 3.41 threshold, whereas a smaller group with low scores reduced the overall sample mean. Only 1.9% of the children attained the high level.

Results by Preschool

Table 7. Mean Scores by Preschool

Preschool	Autonomy	Standard deviation	Behavioral self-regulation	Standard deviation
Anh Duong	3.50	0.45	3.47	0.44
Hung Vuong	3.44	0.52	3.36	0.47
Binh Minh	3.38	0.38	3.37	0.42
Phuoc Thanh	3.34	0.38	3.30	0.41
Full sample	3.42	0.44	3.38	0.44

Children at Anh Duong Preschool had higher mean scores than those at the other three preschools. However, analysis of variance showed that differences in autonomy among the four schools did not reach statistical significance ($F = 2.048$, $p = 0.107$). Differences in behavioral self-regulation were also not statistically significant ($F = 2.123$, $p = 0.097$).

Thus, there was insufficient evidence to conclude that children at any particular preschool had higher autonomy or behavioral self-regulation. Small differences in mean scores may have been related to classroom characteristics, rating practices, or natural variation among groups of children.

Correlation Between Autonomy and Behavioral Self-Regulation

Table 8. Correlations Between Components of Autonomy and Behavioral Self-Regulation

Autonomy component	Behavioral control	Attention and persistence	Rule following	Flexible adjustment	Overall self-regulation
Choice and decision-making	0.578***	0.581***	0.541***	0.592***	0.633***
Independent initiation and implementation	0.575***	0.554***	0.527***	0.575***	0.616***
Problem-solving	0.589***	0.578***	0.548***	0.585***	0.635***
Responsibility	0.540***	0.550***	0.514***	0.564***	0.599***
Overall autonomy	0.626*	0.621*	0.584*	0.636*	0.681*

* $p < 0.001$.

Overall autonomy was positively and moderately strongly correlated with behavioral self-regulation ($r = 0.681$, $p < 0.001$). This means that children who demonstrated higher autonomy also tended to show better behavioral control and regulation.

This result does not mean that 68.1% of behavioral self-regulation was produced by autonomy. The coefficient $r = 0.681$ reflects only the direction and strength of the linear association between the two variables.

Among the four autonomy components, problem-solving had the strongest correlation with overall behavioral self-regulation ($r = 0.635$), followed by choice and decision-making ($r = 0.633$). Responsibility had the lowest coefficient, although its association remained reasonably strong ($r = 0.599$).

All correlation coefficients were statistically significant at $p < 0.001$. Therefore, H1, H2, H3, H4, and H5 were supported at the bivariate correlational level.

Prediction of Behavioral Self-Regulation

Table 9. Regression Analysis Predicting Behavioral Self-Regulation

Independent variable	B	Standard error	Standardized beta	p
Choice and decision-making	0.216	0.069	0.239	0.002
Independent initiation and implementation	0.135	0.071	0.150	0.056
Problem-solving	0.227	0.072	0.250	0.002
Responsibility	0.079	0.069	0.087	0.252
Age in months	0.017	0.011	0.075	0.099
Female sex	0.057	0.036	0.065	0.117

$R^2 = 0.482$; adjusted $R^2 = 0.467$; $p < 0.001$.

The regression model explained 48.2% of the variance in behavioral self-regulation. The remaining 51.8% may have been associated with factors not included in the model, such as temperament, the home environment, teachers' classroom organization, parental support, the quality of peer relationships, or individual differences in executive-function development.

Problem-solving was the strongest predictor ($\beta = 0.250$, $p = 0.002$). With all other variables held constant, a one-point increase in the problem-solving score was associated with an expected 0.227-point increase in behavioral self-regulation.

Choice and decision-making also made a statistically significant predictive contribution ($\beta = 0.239$, $p = 0.002$).

Independent initiation and implementation had a positive coefficient but did not reach statistical significance ($p = 0.056$). Responsibility also did not remain a statistically significant independent predictor when all autonomy components were entered into the model simultaneously.

This does not mean that initiative and responsibility are unimportant. The components of autonomy were relatively strongly interrelated, and the contributions of initiative and responsibility may have been shared with choice and problem-solving in the regression model.

Age, sex, and preschool attended did not make statistically significant predictive contributions after the autonomy components were controlled.

DISCUSSION

Level of Children's Autonomy

The results showed that the children demonstrated a moderate level of autonomy, although it was not yet high. Children performed better in situations where clear options were provided, such as selecting a learning center, material, or play role. They experienced greater difficulty when required to identify a problem independently, generate a solution, and adjust their approach.

These findings suggest that teachers may have provided opportunities for choice, but primarily in simple situations. Children may not have regularly practiced open-ended tasks with multiple possible solutions that required independent planning.

Providing choice is meaningful because children must attend to alternatives, compare them, decide, and implement their choice. Castelo et al. similarly found that the provision of choice was the autonomy-supportive component most consistently associated with children's executive function.

However, autonomy support should not be interpreted as allowing unlimited choice. Teachers need to provide a manageable number of options that are consistent with the activity goals and children's abilities. After children make a choice, teachers should enable them to carry it out and assume responsibility for the decision.

Behavioral Self-Regulation

Children's behavioral self-regulation was at a moderate level and close to the fairly high range. Children performed better with familiar rules but found it more difficult to control immediate responses or shift to a new rule.

This pattern is consistent with developmental characteristics during the preschool years. Inhibitory control, working memory, and cognitive flexibility have emerged by this age but continue to develop throughout childhood.

Children may remember the instruction "Put the materials away after playing" but still grab a toy when highly excited. They may also follow a familiar game rule yet become confused when the teacher changes the rule during the activity. Behavioral self-regulation should therefore not be evaluated solely on the basis of whether children obey adults or comply with classroom rules.

Research reviews show that preschool approaches to developing self-regulation take many forms, but their effectiveness depends on how they are organized, their duration, and their developmental appropriateness. Such activities should be embedded in everyday routines rather than delivered only as isolated exercises.

Relationship Between the Two Variables

The correlation coefficient ($r = 0.681$) indicated a moderately strong relationship between autonomy and behavioral self-regulation. Children who make choices and act proactively not only have more opportunities to participate in activities but must also practice controlling their actions in order to pursue their choices.

When children independently select a play role, they need to remember the role, follow the rules of play, and adjust how they communicate with peers. When they independently select art materials, they must concentrate, control their use of tools, and modify their approach if the product does not turn out as intended. Autonomous activity can therefore simultaneously provide a context for practicing self-regulation.

Conversely, children with stronger behavioral self-regulation are better positioned to express autonomy. Children who can concentrate and persist are more likely to complete their ideas. Children who control their responses and respect boundaries may also be trusted by teachers with greater choice and responsibility.

The findings are consistent with Bernier et al., who showed that autonomy-supportive environments are associated with children's executive functioning and self-regulation. The present study differs, however, in that it focuses on children's own manifestations of autonomy rather than solely on adults' autonomy-supportive behavior.

Roles of Choice and Problem-Solving

The regression findings showed that choice and problem-solving were the two clearest predictors of behavioral self-regulation.

When offered choices, children need to consider alternatives, inhibit inappropriate options, and sustain behavior in accordance with the decision they have made. This process is directly related to inhibitory control and working memory.

When solving problems, children must keep the goal in working memory, recognize when an approach is ineffective, and shift to an alternative. These are also core demands of behavioral self-regulation.

The findings suggest that teachers should not stop at asking children, “Which one do you like?” but should continue with questions such as:

“Why did you choose this approach?”

“How are you going to do it?”

“What will you do if this approach does not work?”

“Which part can you do by yourself, and which part do you need the teacher to help you with?”

These questions connect children’s choices with thinking, action, and responsibility rather than treating choice merely as an expression of momentary preference.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on data collected from 320 children and 20 teachers at four preschools - Anh Duong, Hung Vuong, Binh Minh, and Phuoc Thanh Preschools, the study reached the following conclusions:

First, autonomy among 5- to 6-year-old preschool children had a mean score of 3.42, corresponding to a fairly high level. Children performed best in choice and decision-making, whereas their problem-solving remained limited.

Second, behavioral self-regulation had a mean score of 3.38, corresponding to a moderate level and approaching the fairly high range. Children performed relatively well with familiar rules but continued to experience difficulty with behavioral control and flexible behavioral adjustment.

Third, autonomy was positively and moderately strongly correlated with behavioral self-regulation ($r = 0.681$, $p < 0.001$). Children with higher autonomy tended to demonstrate better behavioral self-regulation.

Fourth, the regression model explained 48.2% of the variance in behavioral self-regulation. Choice and decision-making and problem-solving were the two components with the clearest predictive contributions.

Fifth, because the study used a cross-sectional correlational design, the findings were insufficient to conclude that autonomy directly caused improvements in behavioral self-regulation.

Recommendations for Preschool Teachers

Teachers should provide children with opportunities to make choices in everyday activities, while ensuring that the number of options is manageable and aligned with educational objectives.

After children make a choice, teachers should encourage them to explain their reasons, anticipate how they will proceed, and follow through on their decision.

Teachers should organize more open-ended tasks with at least two possible solutions so that children can try, make errors, revise, and change their approach.

Teacher support should be gradually reduced. Teachers should not immediately provide answers or complete tasks for children when difficulties arise.

Rule-based games, rule-switching games, turn-taking activities, and multistep tasks should be used to strengthen behavioral control, memory, and flexible shifting.

Teachers should avoid equating autonomy with a child’s desire to do whatever they want. An autonomous child must be able to act within boundaries, respect others, and assume responsibility for choices.

Teachers should also avoid equating behavioral self-regulation with passive obedience. Children need to understand the reasons for rules and gradually control their behavior even when adults are not present to remind them.

Recommendations for Preschools

Preschools should organize professional-development sessions on supporting children's autonomy and behavioral self-regulation.

Classroom environments should provide accessible materials, clear labels, and opportunities for children to independently retrieve, use, and return materials.

Classes should adopt several shared principles while still allowing teachers sufficient autonomy to organize activities flexibly in accordance with children's needs.

Preschools may develop a common set of observational criteria to monitor children's progress rather than relying on general impressions such as "well-behaved," "overactive," or "difficult."

Recommendations for Parents

Parents should allow children to make choices in age-appropriate matters such as clothing, toys, household tasks, or the arrangement of a learning corner.

After children make a choice, parents should enable them to carry it out and assume appropriate responsibility rather than changing the decision simply because the child encounters a minor difficulty.

Families and preschools should adopt consistent approaches to setting boundaries, reminding children, and encouraging them to solve problems independently.

Limitations

Because the study was conducted at only four preschools, the findings are not representative of all 5- to 6-year-old preschool children in Dong Thap Province.

The data were collected primarily through observations and teacher ratings and may therefore have been influenced by subjectivity and general rating tendencies.

Each teacher rated multiple children within the same class; consequently, the observations may not have been completely independent.

The cross-sectional design did not establish the direction of influence. Autonomy may support behavioral self-regulation, but stronger self-regulation may also enable children to express autonomy more clearly.

The study did not fully examine factors such as the home environment, parenting style, temperament, the quality of teacher-child interactions, and socioeconomic conditions.

Future research should employ longitudinal designs, assess children at two or more time points, combine teacher ratings with direct assessment tasks, and include a larger number of participating preschools.

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