

<https://doi.org/10.70731/2x0a9r39>

A Study on the Intervention of Inattentive Behaviors in Children With Moderate Intellectual Disabilities Based on Positive Behavior Support

Ziai Liu ^{a,†}, Yixin Li ^{b,c,†}, Xiaodi Xie ^d, Hangjie Zhang ^{a,*}, Mingyu Ye ^{a,*}

^a Shaanxi Normal University, Xi'an 710062, China

^b Dongguan Nancheng Sunshine NO.5 Primary School, Dongguan 523000, China

^c South China Normal University, Guangzhou 510631, China

^d Beijing Normal University, Beijing 100875, China

KEYWORDS

*Positive Behavior Support,
Functional Behavioral
Assessment,
Moderate Intellectual
Disabilities,
Inattentive Behaviors,
Classroom Intervention,
Special Education*

ABSTRACT

This study evaluated the use of Positive Behavior Support (PBS) based on Functional Behavioral Assessment (FBA) to reduce inattentive behaviors in children with moderate intellectual disabilities. Employing a multiple-baseline design, three 15-year-old male students from a special education school in Shandong participated in individualized interventions lasting 9–15 sessions. Strategies included classroom environment adjustments, behavior cues, differential reinforcement, and timely behavioral interruptions. Results showed substantial reductions in inattentive behaviors across all three cases, with Case J showing the greatest improvement (from 11.78 to 2.45 instances per session), followed by Cases W and G, with decreases of 6.44 and 4.97, respectively. All cases had a Tau effect size of 1.00, reflecting strong intervention effectiveness. Participants also displayed enhanced focus, self-regulation, and quality of life, as reported by teachers and parents. However, limitations such as short intervention durations and limited parent involvement were noted, pointing to the need for extended interventions and stronger home-school partnerships. Overall, PBS proved to be an effective and flexible approach to improving classroom behaviors and social adaptability in children with moderate intellectual disabilities.

1. Introduction

The education of children with intellectual disabilities has long been a focal point in the field of special education. These children, due to abnormalities in intellectual development, often experience delays in

both physical and cognitive growth, particularly in terms of attention. In the classroom, children with intellectual disabilities often exhibit inattentive behaviors, such as difficulty concentrating, frequent movement, or making noise. These behaviors not only se-

* Corresponding author. E-mail address: 2023300208@snnu.edu.cn (Hangjie Zhang), walteryezi5233@gmail.com (Mingyu Ye)

† These authors contributed equally to this work.

verely impact learning outcomes but may also hinder the children's social development and personal growth. More importantly, as the children grow older, these inattentive behaviors do not tend to improve spontaneously. Without effective intervention, such behaviors may lead to more complex behavioral issues. Therefore, how to effectively improve classroom learning for children with intellectual disabilities has become a critical issue that needs to be addressed in the field of special education. Currently, in China, the field of special education faces challenges such as insufficient intervention measures and limited effectiveness in addressing inattentive behaviors in children with intellectual disabilities. There is an urgent need to explore more effective intervention strategies to promote the holistic development of these children.

To address these issues, scholars have gradually introduced and applied Positive Behavior Support (PBS) as an effective intervention method. Since the late 20th century, PBS has been widely implemented in countries such as the United States, and a school-wide PBS (SWPBS) system has been developed. This approach, through systematic interventions, has significantly reduced the occurrence of problematic behaviors and improved children's behavior. Although PBS has achieved substantial success internationally, its application based on Functional Behavioral Assessment (FBA) has not been widely implemented in the field of special education in China. Therefore, exploring the applicability and effectiveness of PBS intervention strategies in Chinese special education is an urgent research topic that requires immediate attention.

Functional Behavioral Assessment (FBA), as the foundation of PBS intervention, is a tool used to design individualized intervention strategies by analyzing the underlying motivations behind behaviors. PBS promotes the development of positive behaviors in children through a comprehensive educational approach, aiming to enhance children's learning abilities, social skills, and overall quality of life. Particularly in the context of classroom behavior management, PBS can help children with intellectual disabilities improve inattentive behaviors, enhance focus in the classroom, and increase learning efficiency. Therefore, this study aims to explore whether PBS interventions based on FBA can effectively improve inattentive behaviors in children with intellectual disabilities, thereby enhancing their learning outcomes and social adaptability.

2. Literature Review

2.1. Research on Inattentive Behaviors of Children With Moderate Intellectual Disabilities

Children with intellectual disabilities often exhibit a range of behavioral issues, particularly in classroom settings, where inattentive behaviors are commonly observed. These behaviors typically arise from delays in intellectual development, which in turn impact children's learning efficiency, social skills, and emotional growth. As the severity of the disability increases, attention deficits become more pronounced. In severe cases, these deficits not only disrupt classroom order but also undermine the teacher's instructional effectiveness. In children with autism spectrum disorders and other specific disabilities, attention-deficit behaviors are even more prevalent, posing significant long-term challenges to their learning and development. If left unaddressed, these inattentive behaviors may further impede the development of essential skills and hinder social adaptation. Therefore, enhancing attention is crucial for improving academic performance and promoting independent living skills in children with intellectual disabilities.

Various intervention methods have been employed to address attention-related issues in children with intellectual disabilities, including Functional Behavioral Assessment (FBA), token systems, differential reinforcement, and self-management techniques. Research has shown that these methods can be effective in improving inattentive behaviors to some extent (Smith et al., 2016). However, traditional punitive approaches—such as isolation and extinction—may yield short-term results, but their long-term application often exacerbates behavioral problems and neglects the child's autonomy and individual needs. In contrast, Positive Behavior Support (PBS), grounded in FBA, offers a more personalized intervention strategy. PBS tailors interventions to the specific needs of children, thereby addressing the limitations of traditional methods more effectively. While PBS has been successfully implemented internationally with positive outcomes, its use in China, particularly interventions based on FBA, remains in the early exploratory phase and requires further validation.

2.2. Application of Positive Behavior Support in Behavioral Intervention for Special Needs Children

Positive Behavior Support (PBS) was initially proposed by Horner and colleagues and is grounded in

the principles of Applied Behavior Analysis (ABA). The core concept of PBS is to identify the functions of children's behaviors through evidence-based methods, and to adjust the environment and consequences in a way that reduces undesirable behaviors while promoting positive ones. PBS has been widely implemented in the United States and integrated into the Individuals with Disabilities Education Act (IDEA), underscoring the importance of understanding individual needs and applying systematic interventions. Functional Behavioral Assessment (FBA), the foundational tool for PBS, analyzes the antecedents, consequences, and functions of behaviors to help create personalized intervention plans that can further reduce problem behaviors.

PBS is significantly influenced by humanistic psychology, particularly the concept of "unconditional positive regard" introduced by Carl Rogers, which emphasizes the development of children's overall abilities and social adaptability (Rogers, 1980). PBS incorporates techniques from Applied Behavior Analysis, such as shaping, fading, and extinction, to foster the development of positive behaviors. The PBS intervention process includes gathering case data, organizing behavioral assessment information, developing intervention strategies, recording the intervention process, and ultimately evaluating the intervention's effectiveness. By adjusting the environment and modifying behavioral outcomes, PBS can effectively improve inattentive behaviors, increase classroom focus, and enhance learning efficiency. Junyu Bai et al. (2018) demonstrated that PBS, through environmental adjustments and strategic applications, successfully improved inattentive behaviors in children with intellectual disabilities. However, further validation of its effectiveness for children with moderate intellectual disabilities is still necessary.

This study aims to examine whether PBS intervention, based on FBA, can significantly improve inattentive behaviors in children with moderate intellectual disabilities, and in turn, enhance their classroom focus, learning efficiency, and social adaptability. The specific research questions are as follows:

- 1) Can PBS intervention significantly improve inattentive behaviors in children with moderate intellectual disabilities in the classroom?
- 2) What are the main challenges and obstacles in implementing PBS intervention strategies based on Functional Behavioral Assessment (FBA) in special education classrooms?

- 3) Can PBS intervention enhance children's classroom focus, learning efficiency, and social adaptability?
- 4) Do the behavioral changes in children with moderate intellectual disabilities following PBS intervention demonstrate sustainability?

3. Research Methodology and Research Subjects

3.1. Research Subjects

The research subjects in this study are children with moderate intellectual disabilities. Specifically, these children exhibit significantly lower intellectual functioning compared to their peers and encounter substantial difficulties in daily life and learning, particularly in terms of attention. Children with moderate intellectual disabilities typically display distinct cognitive, emotional, and behavioral characteristics, which often affect their learning abilities and social adaptability. Therefore, this study selects these children as experimental subjects to evaluate the effectiveness of Positive Behavior Support (PBS) in improving their inattentive behaviors in the classroom.

The selection criteria for the research subjects are as follows: (1) Diagnosed with moderate intellectual disability by a qualified medical institution; (2) Aged between 12 and 16 years; (3) Confirmed by teachers, parents, or professional evaluators to exhibit significant inattentive behaviors that notably impact their learning and daily life; (4) No other severe disorders (e.g., autism or emotional disorders); (5) Parental consent to participate in this study.

Based on these criteria, three male children, all aged 15, were selected as research subjects from a special education school in R City, Shandong Province. These children demonstrate similar levels of intellectual impairment and exhibit significant attention issues and inattentive behaviors in the classroom.

3.1.1. Case G - Basic Information

Case G is a 15-year-old male, currently a fourth-grade student at a special education school in R City. He has been diagnosed with congenital moderate intellectual disability. Case G resides with his parents, who tend to indulge him, which has led to frequent instances of disobedient behavior both in the classroom and at home. He has a strong interest in the animated series Big Ear TuTu and often struggles to maintain concentration in class.

3.1.2. Case J - Basic Information

Case J is a 15-year-old male, currently a fourth-grade student at a special education school in R City. He has been diagnosed with congenital moderate intellectual disability and lives with his elderly grandparents, as his parents work away from home. Due to the lack of supervision from his grandparents, Case J exhibits a range of behavioral problems, particularly in the classroom, where he tends to play with dangerous objects and struggles to maintain attention.

3.1.3. Case W - Basic Information

Case W is a 15-year-old male, also a fourth-grade student at a special education school in R City, diagnosed with congenital moderate intellectual disability. He resides with his father, who has remarried and now lives with his stepmother, which has resulted in some neglect in his care. Consequently, Case W displays various behavioral issues. He has a strong interest in the animated series Ultraman, but he exhibits significant inattentiveness in the classroom.

3.2. Research Environment

The intervention process of this study was conducted in a classroom at a special education school in R City, Shandong Province. The classroom used for the study was comparable to other regular teaching environments in the school and was equipped with basic teaching tools. To facilitate the implementation of the intervention, the researchers designed teaching materials that included content tailored to the children's preferences and incorporated reward-based animated videos as motivational tools. All intervention activities were personally led by the first author of this study (the trainee class teacher), in close collaboration with the head teacher for instructional guidance.

3.3. Research Design

This study employed a multiple-baseline design across subjects to evaluate the effectiveness of Positive Behavior Support (PBS) in improving inattentive behaviors in three children with moderate intellectual disabilities. The multiple-baseline design across subjects is a widely used method in behavioral analysis research, well-suited for assessing the intervention effects across different cases, and it is known for its high internal validity. The independent variable is Positive Behavior Support (PBS), which involves analyzing the function of children's inattentive behaviors through Functional Behavioral Assessment (FBA), and adjusting the antecedents, consequences, and

contextual factors to reduce inattentive behaviors while promoting the development of positive behaviors. The core of PBS is to improve the environmental factors influencing children's behaviors through systematic intervention, thereby fostering positive classroom behaviors. The dependent variable is the inattentive behavior of children with intellectual disabilities in the classroom, specifically manifested as: failure to complete assigned tasks, frequent movement, playing with unrelated objects, failure to follow classroom rules, and disrupting class order. The effectiveness of the intervention was evaluated by recording the frequency and duration of inattentive behaviors during each class session.

At the start of the study, functional assessments of the children's behaviors were conducted based on baseline data and the "A-B-C Behavior Function Analysis Form." These assessment results were further validated using the "Behavioral Motivation Assessment Scale" to ensure that the intervention strategies were personalized and targeted.

During the baseline period, the researchers did not inform the children about the purpose of the observation, and all data were recorded in a regular classroom environment. The primary task during this period was to observe and record the frequency and duration of inattentive behaviors in the classroom. Data collection lasted for more than three days, and the stability of baseline behaviors needed to be above 60% (at least three data points) before moving to the intervention phase. The baseline periods lasted for 6 days, 9 days, and 12 days for the three cases.

The intervention phase commenced after the completion of baseline data collection. Based on the results of the Functional Behavioral Assessment, individualized Positive Behavior Support intervention plans were developed for each case. The intervention strategies included:

- 1) **Antecedent Modifications:** Adjusting task difficulty and designing teaching content based on the children's interests;
- 2) **Behavioral Correction:** Reinforcing attention-focused behaviors and correcting behaviors that did not align with classroom norms;
- 3) **Consequence Control:** Using token systems, differential reinforcement, and other methods to reinforce attention behaviors and reduce disruptive behaviors in the classroom.

The intervention phase lasted 15 days for Case G, 12 days for Case J, and 9 days for Case W.

3.4. Data Processing

Data analysis was conducted using visual analysis to assess the trends in the changes of children's inattentive behaviors before and after the intervention. Additionally, Tau effect sizes were used to further evaluate the effectiveness of the intervention. The Tau effect size calculation method is particularly suitable for experimental designs with a limited number of data points, as it can effectively reflect the actual impact of the intervention. The formula for calculating the Tau effect size is:

$$\text{Tau effect size} = (\text{Number of non-overlapping data pairs} - \text{Number of overlapping data pairs}) / \text{Number of data pairs}$$

Where the number of data pairs is calculated as:

$$\text{Number of data pairs} = \text{Number of baseline data points} \times \text{Number of intervention data points}.$$

Non-overlapping data pairs represent instances where the frequency of inattentive behaviors during the intervention phase is lower than during the baseline phase, while overlapping data pairs indicate instances where the frequency is the same in both phases.

3.4.1. Inter-Observer Agreement (IOA)

To ensure the accuracy of the measurements for the dependent variables, this study calculated the Inter-Observer Agreement (IOA). The researchers randomly selected 50% of the intervention videos and invited the head teacher and researchers to rate them collaboratively. The calculation results showed that the average IOA was 90.2%, which exceeds the 80% standard requirement.

3.4.2. Intervention Fidelity

Intervention fidelity refers to the degree of consistency between the actual implementation of the intervention and the pre-established plan. In this study, a self-developed "Intervention Fidelity Checklist" was used to assess fidelity, ensuring that the intervention process adhered strictly to the planned protocol. The research team randomly selected 30% of the intervention period videos for fidelity checks. The results showed that the intervention fidelity for Cases G, J, and W was 94.67%, 93.33%, and 96.67%, respectively. The average fidelity was 94.89%, which exceeds the 80% standard, confirming the high effectiveness of the intervention implementation.

4. Research Results

4.1. Functions of Inattentive Behaviors in the Cases

4.1.1. ABC Behavior Analysis

1) ABC Behavior Analysis of Case G

The table 1 lists the situations, behavioral manifestations, behavioral outcomes, and the hypothesized function of the behaviors exhibited by Case G.

2) ABC Behavior Analysis of Case J

The table 2 lists the situations, behavioral manifestations, behavioral outcomes, and the hypothesized function of the behaviors exhibited by Case J.

3) ABC Behavior Analysis of Case W

The table 3 lists the situations, behavioral manifestations, behavioral outcomes, and the hypothesized function of the behaviors exhibited by Case W.

4.2. Behavioral Motivation Assessment

1) Case G's Behavioral Motivation Assessment

As shown in Table 4, the motivations behind the three types of distractible behaviors of Case G are different. The most likely motivation for Behavior 1 is task avoidance, followed by sensory stimulation. For Behavior 2 and Behavior 3, the most likely motivation is sensory stimulation, followed by task avoidance.

In summary, the most likely behavioral motivations for Case G's distractible behaviors are task avoidance (avoiding tasks that are uninteresting or challenging) and sensory stimulation (positive reinforcement from sensory experiences), followed by seeking attention.

2) Case J's Behavioral Motivation Assessment

As shown in Table 5, the motivations behind the three types of distractible behaviors of Case J are different. The two teachers have some differences in their assessment of Behavior 2's motivation, but both agree that the most likely motivation is task avoidance. For Behavior 1 and Behavior 3, the most likely motivations are task avoidance, followed by sensory stimulation.

In summary, the most likely behavioral motivations for Case J's distractible behaviors are task avoidance (avoiding tasks that are uninteresting or challenging), followed by sensory stimulation (positive reinforcement from sensory experiences).

3) Case W's Behavioral Motivation Assessment

As shown in Table 6, the motivations behind the three types of distractible behaviors of Case W are different. The most likely motivation for Behavior 2 is task avoidance, followed by seeking attention. For

Table 1 | ABC Analysis of Inattentive Behaviors for Case G

Situation	Behavior	Behavior Outcome	Hypothesized Function of Behavior
A classmate goes to the bathroom	Turns around	Stops and looks at the blackboard	Escape from task
A classmate leaves the classroom	Turns around + talks	Stops and looks at the blackboard	Escape from task
The teacher asks a question about the lesson	Asks irrelevant questions	Teacher repeats the question multiple times before answering	Escape from task
The teacher assigns exercises	Leaves seat	Teacher stops the behavior and child does the exercises	Escape from task
The teacher asks a question about the exercise	Does not answer	Teacher repeats the question multiple times before answering	Escape from task
The teacher asks a question about a poem	Asks irrelevant questions	Stops and does the exercise	Seeking attention + Escape from task
A classmate writes characters on the blackboard	Turns around + talks	Teacher stops the behavior and child writes the characters	Sensory stimulation + Escape from task
A classmate writes characters on the blackboard	Leaves seat + talks	Stops and writes the characters	Sensory stimulation + Escape from task
The teacher asks another student	Looks around	Stops and looks at the blackboard	Escape from
The teacher teaches the lesson	Talks + leaves seat	Teacher stops the behavior and child looks at the blackboard	Sensory stimulation + Escape from task
Someone passes by outside the door	Talks + leaves seat	Teacher stops the behavior and child looks at the blackboard	Escape from task
Someone talks outside the door	Leaves seat	Stops and looks at the blackboard	Seeking attention + Escape from task

Table 2 | ABC Analysis of Inattentive Behaviors for Case J

Situation	Behavior	Behavior Outcome	Hypothesized Function of Behavior
The teacher explains the lesson	Leans on the desk	Teacher stops the behavior and child looks at the blackboard	Escape from task
The teacher plays a video	Leans on the desk + plays with a pen	Stops and looks at the blackboard	Escape from task
Someone passes by outside the door	Leaves seat	Teacher stops the behavior and child looks at the blackboard	Escape from task
The teacher asks a question about the poem	Leans on the desk	Stops and looks at the blackboard	Escape from task
The teacher asks a question about addition	Leans on the desk + plays with a pen	Stops and does the exercise	Sensory stimulation + Escape from task
The teacher gives instructions to a classmate	Talks	Teacher stops the behavior and child does the exercise	Escape from task
The whole class does exercises	Talks + leaves seat	Teacher stops the behavior and child does the exercise	Escape from task
The teacher passes by the student	Plays with a pen + talks	Stops and looks at the blackboard	Sensory stimulation + Escape from task
The teacher passes by the student	Leans on the desk + plays with a pen	Stops and does the exercise	Sensory stimulation + Escape from task

Behavior 1 and Behavior 3, the most likely motivations are seeking attention, followed by task avoidance.

In summary, the most likely behavioral motivations for Case W's distractible behaviors are task avoidance (avoiding tasks that are uninteresting or chal-

lenging) and seeking attention, followed by sensory stimulation (positive reinforcement from sensory experiences).

Based on the above analysis, the distractible behaviors of the three children primarily manifest as task avoidance, followed by seeking attention and

Table 3 | ABC Analysis of Inattentive Behaviors for Case W

Situation	Behavior	Behavior Outcome	Hypothesized Function of Behavior
The whole class reads the lesson aloud	Looks around	Teacher stops the behavior and child looks at the blackboard	Escape from task
The teacher explains the lesson	Interrupts the teacher's speech	Stops and looks at the blackboard	Seeking attention
The teacher asks other students	Asks irrelevant questions	Teacher stops the behavior and child looks at the blackboard	Seeking attention
The teacher asks a question about a poem	Daydreams	Stops and looks at the blackboard	Escape from task
The teacher asks a question about arithmetic problems	Asks irrelevant questions	Stops and does the exercise	Seeking attention
The teacher asks other students	Talks + leaves seat	Teacher stops the behavior and child does the exercise	Escape from task
A classmate works on exercises on the blackboard	Talks	Teacher stops the behavior and child does the exercise	Seeking attention + Escape from task
The teacher asks other students	Looks around	Stops and looks at the blackboard	Escape from task
The teacher explains exercise problems	Insults other	Teacher stops the behavior and child looks at the blackboard	Sensory stimulation + Escape from task
The teacher explains the lesson	Talks + leaves seat	Teacher stops the behavior and child looks at the blackboard	Escape from task

Table 4 | Case G's Behavioral Motivation Assessment Table

Assessor	Behavior	Sensory Stimulation		Task Avoidance		Seeking Attention		Obtaining Tangibles	
		Total Score	Rank	Total Score	Rank	Total Score	Rank	Total Score	Rank
Teacher1	Behavior1	12	2	13	1	10	3	10	4
	Behavior2	14	1	13	2	12	3	10	4
	Behavior3	14	1	13	2	11	3	9	4
	Behavior4	12	2	13	1	11	3	9	4
Teacher2	Behavior5	13	1	12	2	11	3	10	4
	Behavior6	14	1	13	2	10	3	9	4

Note: Teacher 1 is Case G's homeroom teacher, while Teacher 2 is the subject teacher and the researcher for this intervention study. Behavior 1 refers to not answering questions; Behavior 2 refers to talking; Behavior 3 refers to asking irrelevant questions.

Table 5 | Case J's Behavioral Motivation Assessment Table

Assessor	Behavior	Sensory Stimulation		Task Avoidance		Seeking Attention		Obtaining Tangibles	
		Total Score	Rank	Total Score	Rank	Total Score	Rank	Total Score	Rank
Teacher1	Behavior1	12	2	13	1	10	3	9	4
	Behavior2	11	2	13	1	9	3	10	4
	Behavior3	12	2	14	1	10	3	9	4
	Behavior4	12	2	13	1	9	3	8	4
Teacher2	Behavior5	12	1	12	1	9	4	11	3
	Behavior6	11	2	13	1	10	3	9	4

Note: Teacher 1 is Case J's homeroom teacher, while Teacher 2 is the subject teacher and the researcher for this intervention study. Behavior 1 refers to leaning on the desk; Behavior 2 refers to playing with a pen; Behavior 3 refers to talking.

sensory stimulation. The core task of developing a Positive Behavioral Support Plan is to correct the way children use distractible behaviors to achieve these three functions through effective intervention strategies. Specifically, the key lies in guiding the children

to engage in focused behaviors such as actively listening and completing tasks, in order to meet their intrinsic needs.

In this process, the goal of the Positive Behavioral Support Plan is to help children adopt appropriate

Table 6 | Case W's Behavioral Motivation Assessment Table

Assessor	Behavior	Sensory Stimulation		Task Avoidance		Seeking Attention		Obtaining Tangibles	
		Total Score	Rank	Total Score	Rank	Total Score	Rank	Total Score	Rank
Teacher1	Behavior1	12	3	13	2	14	1	10	4
	Behavior2	11	3	13	1	12	2	10	4
	Behavior3	11	3	14	2	15	1	10	4
Teacher2	Behavior4	12	3	13	2	14	1	9	4
	Behavior5	12	3	14	1	13	2	10	4
	Behavior6	11	3	13	2	14	1	9	4

Note: Teacher 1 is Case W's homeroom teacher, while Teacher 2 is the subject teacher and the researcher for this intervention study. Behavior 1 refers to talking; Behavior 2 refers to looking around; Behavior 3 refers to asking irrelevant questions.

and reasonable ways to fulfill their needs by systematically adjusting the antecedents, behavioral expressions, and consequences of distractible behaviors. This approach will effectively reduce the frequency of distractible behaviors and further promote the development of focused behaviors in children.

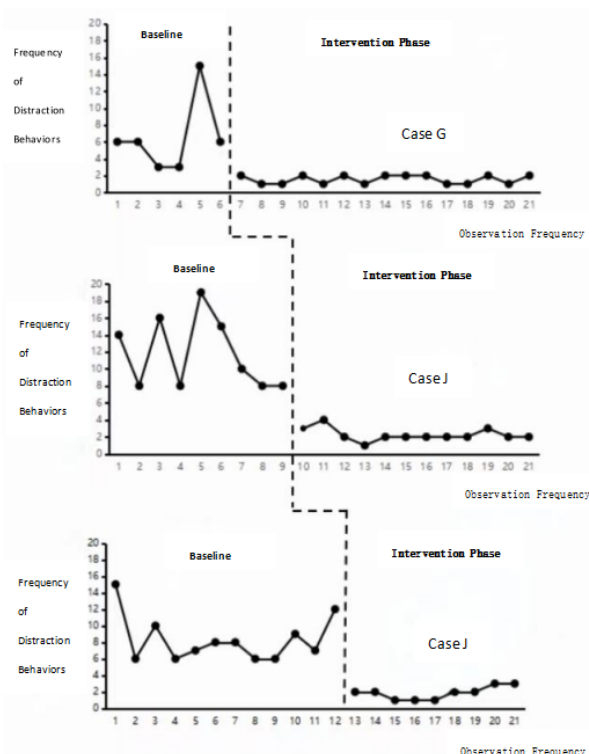
4.3. Intervention Effects of Positive Behavioral Support

The trend of changes during the baseline phase and the intervention phase for the three cases is shown in Figure 1.

According to Figure 1, after the Positive Behavioral Support intervention, there was a significant improvement in the distractible behaviors of all three cases. Among them, Case J showed the most noticeable improvement. As seen in the following table, the average level of Case J's distractible behavior decreased from 11.48 during the baseline phase to 2.45 during the intervention phase, with a change of 9.33. Case G and Case W also showed significant improvement. The average level of Case W's distractible behavior during the baseline phase was 8.33, and it dropped to 1.89 during the intervention phase, with a change of 6.44. Case G's average level during the baseline phase was 6.5, and during the intervention phase, it was 1.53, with a change of 4.97. The experimental data shows that, after the intervention, the distractible behaviors of all three cases improved immediately and significantly.

4.3.1. Intervention Effect of Positive Behavioral Support on Case G's Distractible Behavior

The baseline phase for Case G lasted 6 sessions, with a range of 6-15 and an average level of 6.5. The absolute level change during this phase was 0, and the stability of the level was 66.67%, showing a positive trend (see Table 7). From this, it can be concluded that the fluctuation in the frequency of Case G's

**Figure 1 | Comparison Analysis of Intervention Results for Three Cases**

distractible behaviors during the baseline phase was likely due to changes in their physical and mental state, but the downward trend was not significant. The absolute level change during the phase was 0. Since the average level of Case G's distractible behavior during the baseline phase (6.5) was relatively high, it indicates that the behavior occurred quite frequently, and the last three data points did not show a significant downward trend, remaining relatively stable. The level stability of 66.67% is higher than 60%, which meets the criteria for entering the intervention phase.

During the intervention phase, the average level change was 4.97, and the level stability was 0%,

Table 7 | Phase Analysis of Case G's Distractible Behavior Frequency

Phase	Baseline Phase	Intervention Phase
Phase Length	6	15
Trend Path	\	\
Level Range	6-15	1-2
Absolute Level Change within Phase	0 (6-6)	0 (2-2)
Average Level	6.5	1.53
Level Stability	66.67%	0%

Note: The standard for level stability is 20%.

Table 8 | Phase Comparison Analysis of Case G's Distractible Behavior Frequency

Comparative Phase	Baseline Phase/Intervention Phase
Absolute Level Change Between Phases	4 (6-2)
Average Level Change	4.97
Trend Direction Change and Effect	\ \ (+)
Trend Stability Change	Unstable to Unstable
Non-overlap Rate	100%
Tau Effect Value	1.00

Table 9 | Phase Analysis of Case J's Distractible Behavior Frequency

Phase	Baseline Phase	Intervention Phase
Phase Length	9	12
Trend Path	\	\
Level Range	8-19	1-4
Absolute Level Change within Phase	-6 (8-14)	-1 (2-3)
Average Level	11.78	2.45
Level Stability	77.78%	83.33%

Note: The standard for level stability is 20%.

showing an unstable but significant decline, with a positive trend. The data overlap rate between the baseline and intervention phases was 100% (see Table 8). This indicates that during the intervention phase, the frequency of Case G's distractible behavior decreased significantly, with a noticeable change in the average level of 4.97, a 100% non-overlap rate, and a clear positive trend. Therefore, it can be concluded that the frequency of Case G's distractible behavior significantly decreased during the intervention phase.

After the intervention, the Tau effect value for Case G's distractible behavior was calculated to be 1.00, indicating an excellent intervention effect and demonstrating that the Positive Behavioral Support had a significant effect on improving Case G's distractible behavior.

4.3.2. Intervention Effect of Positive Behavioral Support on Case J's Distractible Behavior

The baseline phase for Case J lasted 9 sessions, with an average level of 11.78 and a level range of 8-19. The absolute level change during the phase was -6, and the level stability was 77.78%, showing a positive trend (see Table 9). This indicates that during the baseline phase, the frequency of Case J's distractible behavior showed a slight downward trend, possibly due to baseline covariation influenced by Case G's intervention within the same class. However, the downward trend was not significant. The average baseline level of 11.78 was relatively high, and the last three data points did not show a noticeable downward trend, remaining stable. With a level stability of 77.78%, which is above 60%, it met the criteria for entering the intervention phase. The average level of 11.78 indicates a relatively high degree of distractibility, which also meets the criteria for entering the intervention phase.

Table 10 | Phase Comparison Analysis of Case JG's Distractible Behavior Frequency

Comparative Phase	Baseline Phase/Intervention Phase
Absolute Level Change Between Phases	5 (8-3)
Average Level Change	9.33
Trend Direction Change and Effect	\ \ (+)
Trend Stability Change	Unstable to Stable
Non-overlap Rate	100%
Tau Effect Value	1.00

Table 11 Phase Analysis of Case W's Distractible Behavior Frequency

Phase	Baseline Phase	Intervention Phase
Phase Length	12	9
Trend Path	\	\
Level Range	6-15	1-3
Absolute Level Change within Phase	-3 (12-15)	1 (3-2)
Average Level	8.33	1.89
Level Stability	83.33%	77.78%

Note: The standard for level stability is 20%.

During the intervention phase, the average level change was 9.33, with a level stability of 83.33%, showing a stable decline and a positive trend. The data overlap rate between the baseline and intervention phases was 100% (see Table 10). This indicates that during the intervention phase, the frequency of Case J's distractible behavior showed a stable downward trend. Compared to the baseline phase, the average level change of 9.33 was quite significant, with a 100% non-overlap rate, demonstrating a clear positive effect. Therefore, it can be concluded that the frequency of Case J's distractible behavior significantly decreased during the intervention phase.

After the intervention, the Tau effect value for Case J's distractible behavior was calculated to be 1.00, indicating an excellent intervention effect and showing that Positive Behavioral Support had a significant impact on improving Case J's distractible behavior.

4.3.3. Intervention Effect of Positive Behavioral Support on Case W's Distractible Behavior

The baseline phase for Case W lasted 12 sessions, with an average level of 8.33 and a level range of 6-15. The absolute level change during the phase was -3, and the level stability was 83.33%, showing a positive trend (see Table 11). This indicates that during the baseline phase, the frequency of Case W's distractible behavior showed a slight downward trend, possibly due to baseline covariation influenced by the interventions of Case G and Case J in the same class. However, the downward trend was not signifi-

cant. The average baseline level of 8.33 indicates that Case W's distractible behavior occurred frequently, and the last three data points did not show a noticeable downward trend, remaining relatively stable. With a level stability of 83.33%, which is above 60%, it met the criteria for entering the intervention phase.

During the intervention phase, the average level change was 6.44, with a level stability of 77.78%, showing a stable decline and a positive trend. The data overlap rate between the baseline and intervention phases was 100% (see Table 12). This indicates that during the intervention phase, the frequency of Case W's distractible behavior showed a stable downward trend. Compared to the baseline phase, the average level change of 6.44 was quite noticeable, with a clear positive trend. Therefore, it can be concluded that the frequency of Case W's distractible behavior significantly decreased during the intervention phase.

After the intervention, the Tau effect value for Case W's distractible behavior was calculated to be 1.00, indicating an excellent intervention effect and showing that Positive Behavioral Support had a significant impact on improving Case W's distractible behavior.

4.4. Social Validity of Positive Behavioral Support

According to the research results, the researcher used the "Positive Behavioral Support Program Effectiveness Questionnaire" for self-assessment by the three cases and invited the homeroom teachers to fill out the questionnaire, while also communicating with

Table 12 | Phase Comparison Analysis of Case W's Distractible Behavior Frequency

Comparative Phase	Baseline Phase/Intervention Phase
Absolute Level Change Between Phases	10 (12-2)
Average Level Change	6.44
Trend Direction Change and Effect	\ \ (+)
Trend Stability Change	Unstable to Stable
Non-overlap Rate	100%
Tau Effect Value	1.00

the parents and homeroom teachers. The results showed that both the homeroom teachers and parents believed that the intervention had a significant effect on the children.

First, regarding the intervention implementation process. Throughout the intervention, the researcher strictly controlled irrelevant variables and made timely adjustments to the intervention plan based on the characteristics of the distractible behaviors and emerging influencing factors of the three cases. This ensured the effective execution of the Positive Behavioral Support Plan.

Second, regarding the changes in the cases' distractible behaviors. After the intervention, the distractible behaviors of all three cases significantly decreased, especially Case J, whose reduction in distractible behavior was particularly noticeable. At the same time, the self-control abilities of all three cases also improved significantly. Feedback from the homeroom teachers indicated that the cases' classroom performance had notably improved in different classes.

Furthermore, regarding the improvement in the cases' quality of life. According to the experimental results, the implementation of the Positive Behavioral Support Plan significantly enhanced the quality of life for the cases. The researcher's survey showed that the parents and homeroom teachers involved in the intervention generally believed that after the intervention, the quality of life of the cases had significantly improved.

Finally, regarding the homeroom teachers' daily teaching practices. Through communication with the homeroom teachers, it was found that after the intervention, the teachers began to explore new teaching methods and became more attentive to the individual characteristics and needs of the children during the teaching process.

However, there were also some issues during the intervention process. First, during the intervention, the researcher did not sufficiently communicate with

the parents and did not establish a strong home-school connection. Second, due to the relatively short intervention period, Case W had fewer intervention sessions. It is suggested that future research extend the intervention period and increase the number of intervention sessions to further improve the intervention effect.

5. Discussion

5.1. Manifestation and Functional Analysis of Distractible Behavior in Children With Moderate Intellectual Disabilities

Through experimental research, it was found that the distractible behaviors of the three cases shared certain common characteristics. Case J's distractible behaviors mainly manifested as resting on the desk, playing with a pen, and talking casually; Case W exhibited casual talking, frequently asking irrelevant questions, and looking around; Case G's distractible behaviors were focused on casual talking, asking irrelevant questions, and not answering questions. In general, the distractible behaviors of all three children primarily involved casual talking and asking irrelevant questions. This finding aligns with the common distractible behaviors in classrooms described by Zan Fei (2018), such as playing with clothes, randomly making noise by tapping objects, leaving seats, day-dreaming, and playing with unrelated items in the classroom.

The common functions of distractible behaviors include seeking attention, task avoidance, obtaining tangibles, and sensory stimulation. Although the manifestations of the three cases varied, the study found that the primary function of their distractible behaviors was task avoidance, followed by seeking attention and sensory stimulation. This finding is consistent with the viewpoint described by Zan Fei (2018), which states that different problem behaviors may serve the same function, and the same problem behavior may serve different functions. This further verifies the

complexity of children's behavior and emphasizes the importance of accurately identifying the function behind the behavior when designing intervention strategies.

5.2. Intervention Effects of Positive Behavioral Support on Distractible Behaviors in Children With Moderate Intellectual Disabilities

Positive Behavioral Support (PBS), as a comprehensive intervention approach, can continuously play a positive role in children's development (Horner et al., 2005). The results of this study show that after implementing PBS interventions, the frequency of distractible behaviors in all three cases significantly decreased, which is consistent with the initial hypothesis. Specifically, the intervention effect for Case J was the most pronounced, possibly due to a lack of adequate care and support in their family. During the intervention, the researcher created an environment full of care and support, effectively reducing the occurrence of distractible behaviors. Similarly, Case W and Case G also showed significant improvements, which may be attributed to the researcher's continuous adjustment of task difficulty and the design of teaching content based on the individual interests of the children.

During the intervention, all strategies strictly followed the basic principles of behavioral analysis, including antecedent modification, behavior correction, and consequence control. The intervention plan was based on an accurate analysis of the children's behavior functions and tailored to the individual characteristics of each case. Through this approach, the children gradually realized that paying attention in class could gain teacher attention, which significantly reduced the occurrence of distractible behaviors.

5.3. Positive Behavioral Support Intervention Strategies for Distractible Behaviors in Children With Moderate Intellectual Disabilities

The implementation of the PBS intervention plan is a systematic process, requiring researchers to comprehensively adjust the behavioral context and consequences during the intervention. This study mainly employed the following four strategies:

5.3.1. Adjusting the Classroom Environment To Prevent Distractible Behaviors

Rational adjustments to the classroom environment, such as creating a harmonious atmosphere and optimizing the seating arrangement, help culti-

vate positive behaviors in children. Teachers need to care for students, pay attention to their learning and life needs, and encourage peer support to enhance children's sense of security and acceptance of classroom activities. For example, adjusting the seating arrangement by increasing the distance between desks and placing children's seats near the podium can reduce peer interference and allow the teacher to effectively supervise and guide the students.

5.3.2. Providing Behavioral Cues and Warning Signals

In classroom teaching, behavioral cues are used to guide children in cultivating focused behaviors. For example, for Case J, the researcher focused on developing proper posture through differential reinforcement; for Case W and Case G, who frequently asked irrelevant questions, the teacher verbally reminded them of the classroom rules; and for speaking behaviors, the teacher promptly reminded, "Please pay attention in class and do not talk." These methods helped the children gradually form focused behaviors in class and reduced the occurrence of distractible behaviors.

5.3.3. Implementing Differential Reinforcement

Differential reinforcement was applied during the intervention, combining token systems and behavior contracts to clarify the rules for rewards and punishments. For example, when Case J rested on the desk, their tokens were reduced, but tokens were added and verbal praise was given when they sat up straight. This strategy significantly reduced distractible behaviors in all three cases. This aligns with the conclusion in Cheng Liuting's (2019) study, which indicated that combining differential reinforcement with a token system had a significant intervention effect on classroom behavior in children with intellectual disabilities.

5.3.4. Timely Interrupting Distractible Behaviors

When children exhibited distractible behaviors, the researcher promptly applied interruption strategies. For example, when Case W was looking around, the teacher would quickly redirect their attention back to the class through verbal prompts or gestures (e.g., pointing to the blackboard), effectively reducing resistance to the behavior. This timely intervention strategy can quickly mobilize the children's attention, thereby reducing distractible behaviors in the classroom.

5.4. Limitations of the Current Study

Due to the limitation of the educational internship period, the experimental cycle of this study was only 6 weeks, with only the baseline and intervention phases included. The maintenance phase was not observed. Therefore, it is not possible to fully evaluate the long-term and stable effects of the intervention. Future studies should appropriately extend the experimental cycle and include a maintenance phase design to more fully verify the continuity and stability of the intervention effects.

Although there was close cooperation with the homeroom and subject teachers in this experiment, due to a lack of intervention training for the parents, the continuity of the intervention between home and school was not achieved. Parents play a crucial role in children's behavioral interventions. Future research should strengthen home-school collaboration, particularly by educating parents about PBS strategies to enhance the comprehensiveness and consistency of the intervention, thereby improving the intervention effects.

This study only selected three children with moderate intellectual disabilities from the same region, school, and class. The sample size is small and the representativeness is limited. Future research should expand the sample source to include children from different regions, schools, and more diverse cases, in order to improve the external validity and generalizability of the research results.

5.5. Educational Recommendations

In the teaching process, teachers should focus on creating a warm and harmonious learning atmosphere to promote students' active participation and improve their concentration. By making reasonable adjustments to the classroom environment, such as optimizing seating arrangements and reducing distractions, teachers can effectively reduce distractible behaviors. Additionally, teachers should further strengthen home-school collaboration to ensure the continuous implementation of PBS strategies, enhancing the consistency and coherence of the intervention. Close cooperation between families and schools can provide consistent behavior management for children in daily life, contributing to the long-term improvement of children's behaviors.

In terms of teaching content, teachers can adjust the difficulty of the curriculum to better suit the learning abilities of children, ensuring that they feel engaged and accomplished in the classroom. At the

same time, by adding fun elements such as games and videos, teachers can stimulate students' learning interest and further enhance their attention. Regarding teaching strategies, teachers should increase the frequency of questioning and choose exercises suitable for the children's individual characteristics, encouraging them to actively participate in classroom interactions, thereby improving classroom focus.

In classroom management, teachers should establish clear classroom rules and reach agreements with students to help them understand classroom behavior norms. By combining reward systems such as token systems, teachers can reasonably reward focused behaviors and effectively diminish the occurrence of distractible behaviors by minimizing attention to them. This classroom management model helps in the continuous development of children's positive behaviors.

Furthermore, schools should encourage communication and collaboration between teachers, collectively analyzing students' behavioral performance and jointly designing personalized teaching plans. Through teacher collaboration, a classroom environment more suitable for children with moderate intellectual disabilities can be built, promoting the development of children's abilities in all areas.

6. Conclusion

In the conclusion section, this study summarizes the significant effects of Positive Behavioral Support (PBS) in improving the classroom distractible behaviors of children with moderate intellectual disabilities and emphasizes its broad potential for application in special education. The results show that PBS not only significantly reduces distractible behaviors in the short term but also improves the overall quality of life for the cases and has a positive impact on teachers' daily teaching practices.

First, after the implementation of the Positive Behavioral Support plan, the classroom distractible behaviors of the three children showed significant improvement. The research indicates that PBS interventions had an immediate and substantial effect on the distractible behaviors of the cases within a short period. Feedback from the homeroom teachers and parents showed notable changes in the children's behavior after the intervention. This result suggests that PBS, as an effective behavioral intervention method, has broad application prospects in the field of special education.

Second, the implementation of PBS significantly improved the daily quality of life for children with intellectual disabilities. These children often face considerable challenges in activities of daily living and social adaptation. During the intervention process, the researcher used carefully designed teaching tasks and support strategies to help the children improve self-management skills, complete daily tasks, and develop social interaction skills. These changes not only enhanced the children's daily living abilities but also boosted their self-confidence and independence.

Finally, the successful application of PBS not only contributed to the improvement of the cases' behavior but also provided valuable support for teachers' teaching practices. During the intervention, the researcher worked closely with the homeroom teachers to optimize teaching methods. The homeroom teachers continuously adjusted teaching strategies and improved classroom management practices while implementing PBS, which increased teaching efficiency and reduced classroom problem behaviors. Collaboration among teachers and teaching support effectively enhanced educational outcomes and provided empirical evidence for promoting PBS in more educational settings in the future.

In conclusion, Positive Behavioral Support, as a systematic and comprehensive intervention plan, not only effectively improves the classroom behaviors of children with intellectual disabilities but also enhances their quality of life and optimizes the educational process. The results of this study provide theoretical and practical support for the future application of PBS in special education.

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