

An intervention study of positive behavior support on classroom problem behaviors of children with moderate intellectual disabilities

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Abstract: Children with intellectual disabilities, whose development of communication and cognitive abilities is generally limited, often develop behavioral problems in classroom learning that not only disrupt normal teaching and learning, but also affect the children's own lives and learning. The main objective of this study was to reduce the incidence of classroom problem behaviors in children with intellectual disabilities through a positive behavior support program. The study was conducted with a child with moderate intellectual disability, and a positive behavior support program, including ecological environment improvement strategy, antecedent control strategy, behavior teaching strategy and consequence management strategy, was used to intervene in the classroom leaving behavior highlighted by the case. After the intervention, the classroom leaving rate of the case decreased, the number of leaving was significantly reduced, and the intervention was effective, and the positive behavioral support was effective in improving the leaving behavior of the child with intellectual disability.

Keywords: positive behavior support; moderate intellectual disability; classroom problem behavior; intervention study

With the development of special education itself and the national emphasis on special education, Pei Chi schools are increasingly developed. According to the statistics of China Education Yearbook, the number of children with special needs is on the rise, and among them, children with intellectual disabilities account for a large proportion. In the teaching process, children with intellectual disabilities are often unable to express their needs normally due to their own limitations, and often express their needs by crying and yelling.^[1] Moreover, when children with intellectual disabilities express their wants and needs and parents and people around them do not meet them in time, they are likely to develop a variety of behavioral problems^[2]. Behavioral problems are one of the greatest barriers to exclusion from regular schools for children with intellectual disabilities, and classroom problem behaviors are particularly prominent among these problematic barriers. These classroom problem behaviors adversely affect the students' own learning and lives and cause varying degrees of harm to parents and their peers. Therefore, by analyzing the causes behind the problem behaviors of children with intellectual disabilities in the classroom, we can largely help to reduce the incidence of problem behaviors and thus can provide what we can to help establish a normal teaching and learning order

1. Study Object

Xiao Yu, male, 11 years old, is a second grade student of a special education school for peiji. His IQ was 45 on the Wechsler Intelligence Scale, which is a moderate intellectual disability. There was no family history of medical problems, and both parents were normal. Xiao Yu had several episodes of high fever when he was 2 or 3 years old, during which he took a lot of medication. In addition, Xiaoyu had no brothers or sisters and was the only child in the family; therefore, his parents were overly spoiled and often met his various requests unconditionally. The researcher's daily observations revealed that Xiaoyu had hyperactive behavior with attention deficit. During class, the case could not sit quietly in his seat and often ran away from his seat or shouted, disturbing the classroom order and causing disturbance to the teacher and other students. Therefore, out-of-seat behavior is the classroom problem behavior to be intervened in this study.

2. Implementation of the intervention plan

2.1 Ecological improvement strategy

First, the family environment has a subtle influence on individual growth. Through communication with the mother of the case, the researcher learned that the family doted on Xiaoyu because he was the only child in the family, so the family doted on him and met all of his requests as long as they could be met. As a result, Xiao Yu rarely listens to his teachers when he leaves his seat at school without permission, and his family environment has a certain connection. By analyzing Xiaoyu's situation with his mother, the parents were willing to change the home environment and give Xiaoyu some discipline at home, so that he could learn to do things on his own, such as setting up comic books alone, and that when Xiaoyu asked for new comic books, the parents could persuade him to do so or complete a required task to get new comic books. After that, a harmonious and inclusive environment was created for the cases at school, and more free time was given to the cases. For example, during recess time, the researcher would lead the cases and other students in the class to the sensory training room, rehabilitation training room, and multi-sensory classroom, so that the cases could have more space to do activities alone.^{[3][4]}

2.2 Pre-event control strategy

First of all, the case's seat was adjusted. The case sat in the last row (there were three rows), which was too far from the classroom teacher and received less attention from the teacher, and often left the seat when the teacher was writing. Therefore, by communicating with the classroom teacher, the researcher moved the case to the first row, so that the classroom teacher could pay attention to the case and notice the case's movement in time. In addition, the teaching assistant assisted the classroom teacher to look after the cases.^[5]

Second, reduce the stimuli that induce problem behaviors. There was a table behind the last row of the classroom, which was filled with books that students liked to read. After preliminary observations, cases often left their seats to get comic books from the back, and other students also had books in class. Therefore, in order to ensure the order of the classroom, the books were locked in the locker at the back of the classroom. During class time, the assistant teacher opened the locker so that students could take the books and read them, while the locker door was locked during class time. In addition to this, the rest of the items on the podium, except for chalk and blackboard erasers, should be put away to reduce irritants.

Finally, the classroom environment was changed. Since there is a large playground outside the window, there are often students in physical education class, and during class, cases will involuntarily leave their seats and walk to the window to look out into the playground. Therefore, to greatly reduce classroom disruptions, teachers drew the curtains in advance when class was about to begin. In addition, there were often students playing by the corridor outside the classroom, and these scenes often attracted the attention of the cases; therefore, the teachers should close the classroom doors as they were about to start the class to reduce the external stimuli.^[6]

2.3 Behavior teaching strategy

First, positive behavior cue cards were used. The researcher searched the Internet for pictures of children who sat upright and listened attentively in class, and made them into cards that were distributed to each teacher. When the teacher noticed that the child was leaving the classroom, the teacher would hold the card and prompt the child, "Xiaoyu, look at the card in the teacher's hand." When the teacher saw the child in the picture sitting carefully, he or she would slowly be influenced to return to the seat.^[7]

Second, use positive reinforcers. Positive reinforcement is an effective means of increasing the incidence of good behavior, and positive reinforcement is used to reinforce the good behavior of the case sitting quietly in his or her seat. In a 35-minute classroom session, cases were rewarded for sitting quietly in their seats and listening attentively for a certain number of minutes. From the pre-intervention assessment, it was found that the cases' favorite reinforcers were candy, cookies, and comic books. Therefore, the researcher made a pact with the case to reward one candy if the case could sit quietly in the seat for 3 minutes; two candies if the case could sit quietly in the seat for 5 minutes; one small cookie if the case could sit quietly in the seat for 10 minutes; two small cookies if the case

could sit quietly in the seat for 20 minutes; and one comic book if the case could sit quietly in the seat for 30 minutes comic book.^{[8][9]}

Finally, praise and encouragement. Praise and encouragement are good for students' growth, so when a case can sit quietly for a long time, the teacher will praise Xiao Yu in front of the whole class and say "You are great!"

2.4 Consequence handling strategy

First, reduce reinforcers. Individuals who do not listen to the teacher's instructions and walk around randomly will have a candy or small cookie deducted so that the case will know the consequences of the behavior occurring and thus avoid the bad behavior.^[10]

Second, prompt positive behaviors. When the case leaves the seat behavior occurs, prompt the case to look around the students are sitting in their seats to listen to the teacher, and praise those students, so that the case will notice the positive behavior and do well like other students.

3. Research results and analysis

In this study, the number of departure behaviors of the cases was recorded sequentially in three phases, and the data of the three phases are shown in Figure 1:

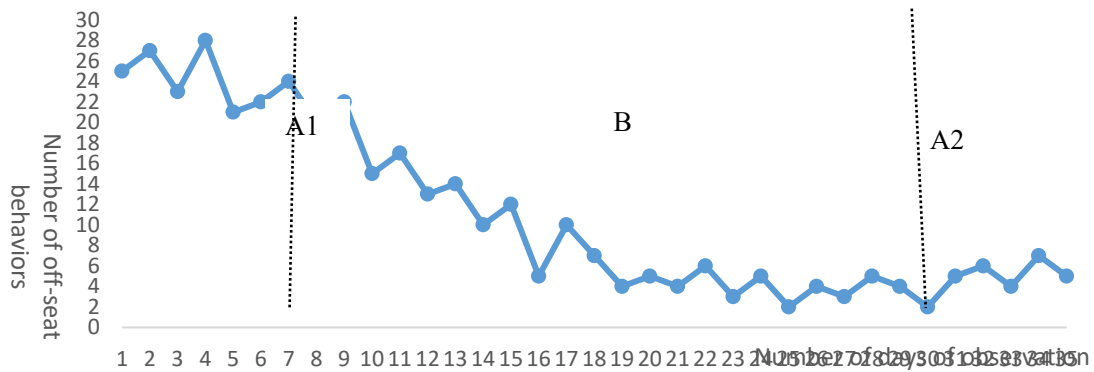


Figure 1: Folding line graph of the change of the number of cases leaving the seat

According to Figure 1, it can be seen that the number of times the cases left their seats ranged from 21 to 28 in the first baseline period; from 2 to 22 in the intervention period; and from 4 to 7 in the second baseline period. In terms of the mean number of departures, the mean number of departures in the first baseline period was 24.3, the mean number of departures in the intervention period was 8.3, and the mean number of departures in the second baseline period was 5.4; therefore, it is clear from the data on the mean number of departures that the intervention was effective. From the trend of the line graph, the number of intervention expectations compared to the first baseline period showed a decreasing trend in the number of out-of-seat behaviors, and although the second baseline period showed an increasing trend, the average number of times in this period was still the lowest among the three phases. Therefore, when the analysis was conducted as a whole, the number of departure behaviors in the cases changed significantly and showed a decreasing trend.

Table 1: Summary of changes within phases

Analysis Phase	Baseline period (A1)	Expectations	Baseline period (A2)
Stage length	7	23	5
Horizontal Range	28-21	22-2	7-4
Intra-stage level change	+1	+18	0
Average value	24.286	8.348	5.4
Horizontal Stability	100%	17.4%	80%
Convergence path			
Trend Stability	71.4%	4.3%	40%
C-value	-0.255	0.854	-0.731
Z-value	-0.792	4.27**	-2.065

Table 2: Summary of changes between phases

Phase Comparison	Baseline period (A1):	Expectations	Intervention expectations:	Baseline period (A2)
Direction of convergence and its change effect				
	Positive+		Positive+	
Convergence stability change	Unstable to unstable		Unstable to unstable	
Level change	24-20 (+4)		2-5 (-3)	
Overlap rate	4.3%		100%	
C-value	0.921		0.845	
Z-value	5.233**		4.643**	

According to Table 1, a total of 7 days of observation were conducted within the baseline (A1) phase, with a level range of 28-21; during this period, a total of 25 departures from the seat behavior occurred on the first day of observation and 24 departures on the seventh day, with an intra-phase change of +1; the mean level was 24.286; the level stability and trend stability tended to be stable; the C value for this phase was -0.255 and the Z value was - 0.792, $P > 0.05$, which did not reach the significance level, indicating that there was no significant change in the departure behavior of the cases, and they could enter the intervention stage.

During the intervention, the cases' problematic behavior of leaving the seat tended to improve and showed a decreasing trend. By analyzing the data of this phase, it can be seen that the level change within the phase was positive, with a mean value of 8.348, and the level stability and trend stability tended to be unstable. The results of C statistics reached a significant level ($C=0.854$, $Z=4.27$, $p < 0.05$), indicating that the intervention for the cases' disengagement behavior was effective, and the number of cases' disengagement behavior decreased.

The analysis of the data from the second baseline period (A2) shows that the mean value of this phase is lower than the previous two phases, indicating that the intervention was effective. In this case, there was no change in the level during the phase, with a mean value of 5.4, a stabilization of the level and a destabilization of the trend, with a C value of -0.731 and a Z value of -2.065.

According to Table 2, it can be seen that the direction of tendency tends to decrease from the baseline period (A1) stage to the intervention period, and the departure behavior changes positively; the stability of tendency ranges from unstable to unstable; the number of departure behaviors of the cases in the observation of the seventh day of the baseline period (A1) is 24, and the departure behavior occurs 20 times on the first day of the intervention period, with a level change of +4; the overlap rate is 4.3%, which indicates that the departure The overlap rate was 4.3%, indicating a good intervention effect on the case's seating behavior; the C value was 0.921 and the Z value was 5.233, $p < 0.05$, indicating a significant intervention effect.

According to Table 2, it can be seen that the number of disengagement behaviors of the cases tended to increase between the intervention period and the baseline period (A2) phase due to the short observation period after the intervention, but in general, the number of disengagement behaviors of the cases tended to decrease. Among them, the tendency stability was from unstable to unstable; the C value was 0.845 and the Z value was 4.643, $p < 0.05$, reaching a significant level.

4. Research findings and Reflection

4.1 Research findings

First, individualized intervention programs should be developed accordingly based on the specific problem behavior situation of each case. This study intervenes in four areas based on positive behavior support to increase good behavior and reduce the incidence of out-of-seat behavior by creating a warm, positive environmental climate.

Second, the positive behavior support program can be widely used in the intervention of classroom problem behaviors of children with intellectual disabilities, which is conducive to the reduction of the incidence of problem behaviors. After the intervention through positive behavior support, the number of cases with the occurrence of out-of-seat behaviors showed a decreasing trend, indicating the effectiveness of positive behavior support intervention for classroom problem behaviors of children with moderate intellectual disabilities.

4.2 Research Reflection

First, the study used a case study with a single, unrepresentative sample, and the findings are not generalizable to a larger group. Moreover, the sampling was subjective and therefore, the findings of this study are not fully applicable to other problem behavior interventions for children with intellectual disabilities.

Second, the intervention period was too short, and the second baseline period was too short. Although the results of the study proved the effectiveness of the intervention to a certain extent, the number of problematic off-seat behaviors occurred in the cases was high and low, and was not stable; therefore, the intervention period should be extended and the cases should be observed for a long time after the intervention.

5. Research inspiration and recommendations

The following are inspired by this study:

First of all, the environment in which children grow up has a subtle influence on their growth, so it is necessary to understand the specific environment in which children live before intervening in their specific behaviors. A good family environment is the first and foremost condition for children's healthy growth, and a harmonious learning environment is a necessary condition, in addition to the school environment and social environment, which also play an important role in children's development.^{[1][12]}

Second, attention should be paid to prevention before problem behaviors occur, and the incidence of problem behaviors can be reduced through timely prevention and instruction. Moreover, teachers should adjust the difficulty of classroom tasks according to students' different levels of impairment so that students can experience success, increase their interest in learning, and prevent the development of learned helplessness.^[13]

Finally, the cooperation and attention of teachers and parents are indispensable in the process of problem behavior intervention for children, and researchers should work together with teachers and parents to achieve good intervention results.

Reflecting on the research process and the results, the following are recommendations for follow-up research:

First, the motivation of the behavior should be focused on before intervening on the problem behavior, and then only the appropriate intervention plan can be designed to address the motivation of the case. Moreover, researchers should cooperate with parents and teachers and work together to promote positive behaviors.

Second, the follow-up period should be extended after the end of the intervention period. The follow-up period is too short to accurately reflect the intervention effect, so to better understand the maintenance effect of good behaviors in cases, researchers should extend the observation period after the end of the intervention period. If a case's problem behavior is recurrent and unstable, the intervention period can be increased again.

Finally, this study focused on a positive behavior support intervention for a moderately mentally disabled child with problematic classroom leaving behavior. Therefore, it is suggested that future researchers can select different types of subjects with different levels of impairment and study different behavioral problems from different perspectives, thus enriching and developing research protocols for positive behavioral support interventions.

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