

## Teachers' interventions against the behaviors of children with intellectual disability

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### ABSTRACT

Teachers' interventions against the behaviors of students with intellectual disability (ID) are urgent for their instructional strategies in the classroom. There were 42 teachers of children with ID given a questionnaire via Google Forms. The questions posed concerned the antecedents of the behavior problems in students with ID, the forms of the behavior problems, teachers' measures, post-intervention conditions, and suggestions for parents. The strongest trigger of behavior problems found was the teacher's direction for a task, in which task refusal. In response to the task refusal behavior, the teacher took a measure by calming the students down and resulted in the students turning calm. This predictor of the teacher's intervention can be applied as a basis for parents' participation in collaboration to overcome behavior problems in students with ID. The teachers' interventions against behavior problems in students with ID took the form of measures that were of the fading and prompting nature as well as the form of verbal diversion. The teachers' interventions above mentioned can be used as predictors as they are relevant to the antecedents of the behavior problems of the students with ID, the forms of the behavior problems, and the consequences the teachers should follow.

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## 1. INTRODUCTION

Teachers' interventions against the behaviors of students with intellectual disability (ID) are urgent for their instructional strategies for the students with intellectual disability in the classroom [1], [2]. These interventions are urgent as they constitute a step into behavioral management in ID so that the next instructional steps can run smoothly [3]. Managing behaviors in ID during the course of an instruction in the classroom is both imperative and challenging for the teacher; in the absence of behavioral management of students with ID, a conducive atmosphere for various functional skills learning will not be built [4]. The teacher plays a role in place of the parents when the students with ID are in the classroom. They also suffer from stress when they are unable to manage the behaviors of the students with ID. Evidence shows that parents are stressed out when behavior problems arise in these students [5]–[8]. This is what has caused it urgent to investigate teachers' interventions against behavior problems. This study inquires about forms of effective interventions that might serve as predictors in the management of behavior problems in children with ID [9].

Students with ID who fall into the category of students with a deficit in the cognitive aspect tend to develop some behavior problems. These problems have a root in cognitive problems that result in difficulties

in choosing verbal and non-verbal responses to environmental stimuli correctly. These responses manifest in the form of problematic behaviors [10]. The management of behavior problems in children with ID should be perceived from the forms taken by the behaviors when they emerge, the antecedents, and the following consequences of the behaviors [11]. Taking into consideration the three abovementioned aspects in the behavior management will be valuable for the teacher in picking predictors of interventions against behavior problems in children with ID [12]. The predictor of a behavior that is spurred by an antecedent is a response to the stimulus that preceded the behavior [13]. The interventions may take the form of reinforcement, stimuli fading, prompting, or escape extinction, and so may the factors that drive the behavior. The aim of an applied behavior analysis is to reduce the stress that often occur in parents of children with developmental disabilities [14].

Cognitive retardation hampers the emergence of an adaptive behavior as a response to the stimuli in the antecedents [15]. The predictors of teachers' interventions lie in the teachers' ability to analyze the consequences [4]. The predictors also represent the executive functions of the forms of teachers' interventions [4]. An analysis of the predictors of teachers' interventions is based on the applied behavior analysis (ABA). It is focused on behaviors that make significant social impacts [16], [17].

This study of forms and predictors of teachers' interventions lays a foundation for teachers to manage the behaviors of children with ID in the future in order to build a conducive atmosphere in the classroom filled with children with ID and children with other developmental disorders [10], [18], [19]. For the teacher, the determination of predictors is also valuable in giving parents suggestions/advice in order to maintain expected behaviors in children with ID [20]. Expected behaviors will definitely result in reduced stress in the mother, the father's acceptance of the child with ID, and incentives for healthy behaviors in the family [18], [21]–[23]. The next question to be studied is the challenges faced by the teacher in developing coping strategies to solve the behavior problems in children with ID [24]. This study of forms and predictors of teachers' interventions intended to describe the profile of teachers' interventions, the predictors of the teachers' interventions based on the antecedents, the behaviors that arise in children with ID, and the consequences rendered by the teachers and to offer some suggestions to parents based on the predictors determined by the teachers.

## 2. RESEARCH METHOD

The participants of this research were special education teachers of students with ID. These participants were teachers with an experience in guiding children with ID in a special school in Indonesia. The subjects numbered 42. They had the experience of guiding children with a variety of special needs, but most frequently they were engaged in interventions for students with ID.

The data collection instrument was developed based on the functional behavior assessment [11]. This functional behavior assessment is based on the applied behavior analysis, which assesses behaviors in the aspects of antecedents, behaviors, and consequences. This analysis is more often applied to children with developmental disorders. The emergence of a behavior can be analyzed from the antecedents and the consequences. The analysis of the three components serves as a basis for teachers to determine predictors to apply interventions to children with ID. Therefore, the instrument was developed based on a list of events and behaviors at each of the three components. The instrument that consists of questions on the antecedents, emerging behaviors, and consequences as well as on the demographics was to be filled by the respondents via Google Forms.

The instrument was disseminated to special school teachers who applied interventions to students with ID at an intensity. Prior to filling out the instrument, the respondents were first asked about their consent to be participants. The form filled by each respondent was calculated to find the frequency at which each statement was chosen and its percentage.

## 3. RESULTS AND DISCUSSION

The data in Tables 1 and 2 shows the results of calculating the percentage of each participant's statement. These results are the basis for describing the findings of this research in accordance with the research objectives. The following is a presentation of demographic data on respondents and the types of behavior displayed by ID students.

Tabel 1. Demographics and types of behaviors

Variable	Group	n	Percent (%)	
Age	<7 years old	1	2.4	
	>18 years old	3	7.1	
	13–15 years old	8	19	
	15–18 years old	13	31	
	7–12 years old	17	40.5	
Level	Kindergarten (TKLB)	1	2.4	
	Elementary school (SDLB)	20	47.6	
	Junior high school (SMPLB)	13	31	
	Senior high school (SMALB)	8	19	
	The activity in which the child took a liking being terminated	3	3.4	
Events allowing children to demonstrate certain behaviors (behavior problems)	The direction given for a task	17	19.1	
	Being asked to wait	7	7.9	
	Being left alone (with an absence of a suitable activity)	10	11.2	
	Being left alone (with an absence of individual attention)	6	6.7	
	Being angered immediately	1	1.1	
	Paying attention to someone else	11	12.4	
	Desires being unfulfilled	1	1.1	
	Attention being not given when desired	9	10.1	
	Taking a liking in collecting and carrying a brochure wherever the child goes	1	1.1	
	Not feeling like going home after school	1	1.1	
	Transition between activities	2	2.2	
	A new task being introduced	8	9	
	Type of behavior that arises when the child is demonstrating a behavior problem	Shouting	7	6.9
		Running away	9	8.8
		Making verbal threats	3	2.9
Self-hitting		4	3.9	
Hitting someone else		4	3.9	
Crying/whining		9	8.8	
Exposing genital to someone of the opposite sex to whom they were attracted		1	1	
Disturbing the class order (specific)		9	8.8	
Scratching		3	2.9	
Biting		1	1	
Destroying properties		3	2.9	
Wetting		1	1	
Causing themselves to fall		2	2	
Refusing to follow the direction		26	25.5	
Hiding objects		1	1	
Verbal refusal		17	16.5	
Faking vomit to making the vomit real		1	1	
Faking sleep		1	1	
Occasionally choosing silence and just closing the eyes in place of crying		1	1	
Behavior intensity (impact of the behavior)		Low	18	42.9
	Moderate	23	54.8	
	High	1	2.4	

The teachers' interventions were efforts to mitigate the behavior problems that arose. The efforts were categorized as task assignment (fading), persuading or calming down (prompting), and ignorance (extinction). The findings showed that the teachers' interventions profile was predominated by measures in the prompting category, with the highest intensity being demonstrated by proximity control and the lowest by persuasion. Interventions in the extinction category were the least favoured by the participants. The demographic data of the participants showed that most of the participants guided students with ID in the age range 7–12 years (40.5%) and at the elementary level/SDLB (40.6%).

Table 2. Efforts and measures

Variable	Group	n	Percent (%)	
Type of problematic behavior	Hitting	2	5.9	
	Pulling at a peer	1	2.9	
	Hurting someone else	1	2.9	
	Causing learning discomfort in the classroom	12	35.3	
	Causing bruises	2	5.9	
Measures taken by the teacher	Verbal refusal	16	47.1	
	Physical assistance/confirmation	8	7.1	
	The child's condition when the teacher was applying a measure	Assinging another task/activity	13	11.5
	Leaving the child alone	3	2.7	
	Allowing a break	6	5.3	
	Commentary/laughter with peers	5	4.4	
	Involving the parents to control the child	1	0.9	
	Assigning another activity	1	0.9	
	Persuading and waiting until the child agreed to go home	1	0.9	
	Calming the child down physically	9	8	
	Calming the child down verbally	21	18.6	
	Ignoring the problematic behavior	2	1.8	
	Using proximity control	20	17.7	
	Waiting until the child adapt to the new environment	1	0.9	
	Verbal diversion	14	12.4	
	Being disturbed and making a diversion	2	1.8	
	Measures taken by the teacher	Allowing a break	3	6.4
Calming words		8	17	
Giving a reinforcement		4	8.5	
Giving comfort by physical touch		4	8.5	
Hugging		2	4.3	
Fulfilling the child's desire		1	2.1	
Calming the child down verbally		5	10.6	
Diverting the child's attention		11	23.4	
Communicating with the family		2	4.3	
Individual approach		7	14.9	
Being pleased		2	5.4	
Being calmer		17	45.9	
Being willing to pay heed to the teacher		7	18.9	
Listening to and obeying the teacher		7	18.9	
Being open about their problems	2	5.4		
Being indifferent	2	5.4		

In the findings, teacher intervention profiles were classified into three categories, as can be seen in Table 3. There are three categories of interventions carried out by teachers in the form of fading, prompting and extinction. The three categories are described again according to the type of intervention per category.

Table 3. Findings on the teachers' interventions profile

Category	Description	Percent (%)
Fading	Calming the child down verbally	18.6
	Calming the child down physically	8
	Allowing a break	5.3
	Assinging another activity	0.9
	Waiting the child to adapt to the new environment	0.9
	Involving the parents to control the child	0.9
Prompting	Using proximity control	17.7
	Verbal diversion	12.4
	Assinging another task/activity	11.5
	Physical assistance/confirmation	7.1
	Continuously telling the child to calm down	5.3
	Commentary/laughter with peers	4.4
	Persuading and waiting until the child agreed to go home	0.9
Extinction	Leaving the child alone	2.7
	Being disturbed and making a diversion	1.8
	Ignoring the problematic behavior	1.8

The findings on the teachers' intervention predictors as seen in Table 4 were based on the analysis of the antecedents of certain behaviors in the students with ID (behavior problem), the types of the problematic behaviors that arose in the students with ID, the intensity of the impact of the behaviors, the

measures taken by the teachers, and the post-intervention conditions of the students with ID. The findings are presented with percentages from the highest to the lowest.

Table 4. Findings on the teachers' intervention predictors

Events that triggered the behaviors (antecedents)	Types of behaviors arising in the students with ID	Intensity of the impact of the behaviors	Measures taken by the teachers	Post-intervention condition of the students	
				Category	%
The direction given for a task Difficult task	Refusing to follow the direction Verbal refusal	Moderate 54.8%	Diverting the child's attention Calming words	Being pleased	5.4
		Low 42.9 %		Being calmer	45.9
Paying attention to someone else	Running away	High 2.3 %	Individual approach	Being willing to pay heed to the teacher	18.9
				Listening to and obeying the teacher	
Being left alone with no suitable activity to do	Crying/whining		Calming verbally	Being open about their problems	5.4
Attention being not given when desired Introduced new task	Disturbing the class order Self-hitting		Giving a reinforcement Allowing a break Hugging Communicating with the family		
Asked to be wait Being left alone with no individual attention being paid	Hitting someone else Making verbal threats				
The activity in which the child took a liking being terminated	Scratching		Giving comfort by a physical touch		
Transition between activities Desires being unfulfilled Being angered immediately	Destroying properties Causing themselves to fall Exposing genital to someone of the opposite sex to whom they were attracted Biting		Fulfilling the child's desire		
Taking a liking in collecting and carrying a brochure wherever the child goes Not feeling like going home after school	Wetting Hiding objects Faking vomit to making the vomit real Faking sleep				

The findings revealed that the highest-frequency antecedents that caused a problematic behavior to occur in the students with ID were the direction given for a task and a difficult task. The behavior resulted was the students refusing to follow the direction. As a consequence, the teachers attempted to divert the students' attention and say calming words. The majority of the students with ID (45.9%) subsequently turned calmer. The antecedent with the highest percentage triggered a greater consequence in the students with ID, but the students became calmer when the teachers applied the predictors. The following effect was that the students became willing to follow the direction and to listen to and obey the teachers, each at a rate of 18.9%.

The items in the categories "measures the parents should take" and "specific measures on the child" in the Table 5 are more varied and are the most suggested for the parents. This shows that support from the parents is still needed by the teacher in the implementation of their interventions. The discussion on the findings of this study departs from the achievement of the objectives of this study. The teachers' intervention profile identified agrees with the ABA objectives that are focused on behaviors in social contexts; it tends to fall into the category of the fading of symptoms of problematic behaviors in ID. This shows that interventions against problematic behaviors in ID should take the form of attempts to calm the individual with ID down verbally or physically and of pleasurable tasks. This finding supports previous research, which found that interventions against problematic behaviors in students with ID tend toward the fading of symptoms students with ID are displeased with [3]. The finding on teachers' interventions also supports that interventions more favoured by teachers are useful for determining predictors [13].

Table 5. Suggestions offered to parents

Category	Description
Communication	Communicating with parents to find a way to calm the child down in order to build a better habit Communicating a reinforcement when the child demonstrates a change in behavior Informing the parents on a way that the teacher and the parents can carry out together Communicating the development of the child Establishing a good relationship between the teacher and the parents
Measures the parents should take	The parents are expected to apply an approach to the child and avoid scolding or yelling at the child; ask the child why they refused The parents should pay greater attention to the conditions of the child at home The parents should be firm and monitor the child's development at home The parents should prevent the behavior from going on and on The parents must be firm and not always follow the child's desires The parents should participate in monitoring the child's learning activities at home, advise the child when they started to be lackadaisical in completing tasks at home, and if a problem related to learning at home arise, let the teacher know about it so the teacher can also take an action to deal with this learning problem The parents should give a direction and a solution appropriate with the child's condition for an activity the child takes a liking in The parents should motivate and uplift the spirit of the child when the child is doing their work The parents should talk with the child in a kind way through advice The parents should know the causes of the child's problematic behaviors The parents should give a direction at home, engage the child in a light discussion, and ask about the child's activities on that day The parents must be firm and not pamper the child, let alone fulfilling all the child's desires The parents should always consult and discuss with the teacher on all of the child's activities, both at home and at school The parents should enforce discipline upon the child and be clear about what is allowed and what is not, lessen the extent to which they fulfilled the child's desires, and take the child to socialize at public places thronged by people The child must be instructed on behaviors The parents should pay more attention to and guide the child at home
Specific measures on the child	The parents should pay attention to the child to eliminate the behavior and to divert the child to their hobbies The parents should never leave the child alone, and they should make a diversion with new activities The parents should always guard the child The parents should pay special attention to the child The parents should pay more attention to the child The parents should provide confort with intimacy Attention is needed The child should avoid foods that may trigger tantrums The parents should enforce discipline upon the child and be clear about what is allowed and what is not, lessen the extent to which they fulfilled the child's desires, and take the child to socialize at public places thronged by people The parents should approach the child when the child is doing their task and give the child some praises The child must not be treated harshly nor stricken; the child must be hugged and approached, and when the child is facing a problem, never leave them alone The parents should be firm in dealing with the child's behavior The parents should make a verbal approach persuasively instead of threatening the child
Cooperation between the teacher and the parents	The teacher and the parents must cooperate in finding the best solution to the child's maladaptive behaviors The teacher should discuss with the parents to calm the child down in a way that suits the child The teacher should talk with the parents on the child's behavior and ask the parents to advise the child against reproachful things or to always obey the teacher's advice The teacher and the parents should be patient and find a way to make the child willing to learn The teacher should cooperate with the parents to better understand the child and give positive affirmation to the child in order not to make the child feel intimidated or under pressure

Predictors and interventions of the teacher are interconnected. That is, the teacher establishes a predicted measure to carry out based on their predisposed preference of intervention, while the intervention serves as a predictor of the measure to resolve the behavior problem in students with ID [13]. The effectiveness of the intervention against the problematic behavior in students with ID depends on the teacher's competence in choosing a measure that is predicted to be able to solve the behavior problem in students with ID [4], [19]. Regarding teachers' intervention predictors, it was found that the event most likely to trigger a problematic behavior was the direction for a task given by the teacher, in which case the behavior resulted was task refusal. In response to the resultant behavior aforementioned, the teacher took an action by attempting to calm the student down. It turned out that this measure could serve as a predictor for the teacher, the effect of which was the student turning calmer.

The intervention predictors discovered in the order from the most to the least frequent were diverting attention, calming words, individual approach, calming verbally, giving a reinforcement, allowing a break, hugging, communicating with the family, giving physical touch comfortably, and fulfilling the child's

desire. The measures assumed by the teachers to serve as predictors in the handling of behavior problems in ID student were diverting attention and attempts to calm the child down. This assumption supports the results of a study on executive functions in solving behavior problems in children with ID, which is externalized to children with ID under the borderline category [4]. These executive functions are a force that directs a behavior problem to a lower extent. The analysis of teachers' predictors revealed that the direction for a task and a difficult task assigned to students with ID led to task refusal and thus needed a measure to calm the students down, both verbally and physically. In consequence, the students with ID turned calmer and became willing to follow the direction given by the teachers. This is a case with students with ID who faced reaterded cognitive abilities in facing a difficult task, which became a problem [15].

These findings on teachers' intervention predictors can be used as a basis for parents to collaborate in solving behavior problems in students with ID. The teachers would suggest the parents a number of general and specific measures to be taken by the parents on children with ID. However, communication and cooperation between the teachers and the parents are still necessary. The measures taken by the teachers and followed up by the parents would eventually bring mental health to the parents. In other words, they would help reduce stress the parents are facing in dealing with behavior problems in children with ID [14].

As such, the research into teachers' strategies to manage the behaviors of children with ID should be continued, especially on coping strategies to deal with the behaviors of children with ID [24]. Coping strategies will be valuable for the teachers in order for them to experience no stress and be able to facilitate instructions for students with ID in the classroom. The findings also revealed that the antecedents for the emergence of behavior problems in students with ID lie in cognitive problems. Future investigation should compare the frequency of the occurrence of a behavior problem when the students are confronted with a task, they consider difficult against the frequency when they are confronted with a task, they do not consider difficult. The study can also be used by parents to guide their intellectually disabled children to form adaptive skills [21], [25].

#### 4. CONCLUSION

The teachers' interventions in handling behavior problems in students with ID were measures that were of the fading and prompting nature as well as of verbal diversion form. The teachers' interventions can be used as predictors due to the agreement between the antecedents of the problematic behaviors in students with ID, the forms of the behavior problems, and the consequences the teachers should follow. The ABA should serve as a ground for determining predictors. The suggestions offered for parents based on the teachers' intervention predictors were in the form of general and specific measures the parents should take. The implication is that studies on the applied behavior analysis on children with ID that is effective for the instructional strategies in the classroom, and training for parents in the applied behavior analysis.

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