

# Implementation of Differential Reinforcement of Other Behavior (DRO) with Digital Video Assistance to Reduce Maladaptive Behavior in Deaf Children

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## ABSTRACT

This study aims to determine the effect of the Differential Reinforcement of Other Behavior (DRO) program to reduce maladaptive behavior or behaviors that should not appear in children with hearing disabilities that occur during online learning at home. The research approach uses quantitative research with the type of experimental research. The experimental approach used is the Single Subject Research approach. The design used is the A1-B-A2 design. The research subjects were students with hearing impairment in class II SDLB – B Karya Mulia II in Surabaya. Data collection through descriptive statistics and displayed in the form of graphs. The components being analyzed are analyzed under conditions. The results showed a decrease in the duration and frequency of maladaptive behavior demonstrated by the subject. Based on the time and frequency of the appearance of the subject's behavioral targets, it is known that the results of the estimated trend of direction increase during the baseline phase 1, decrease during the intervention phase, and decrease in the baseline phase 2. It can be concluded that using the Differential Reinforcement of Other Behavior (DRO) program can reduce maladaptive behavior.

**Keywords:** Deaf students, Differential reinforcement of other behavior (DRO), Maladaptive behavior, behavior modification.

## 1. INTRODUCTION

In essence, all students have the right to get the opportunity without exception to achieve satisfactory academic achievements, especially students who are deaf. But in reality, in everyday life, it is clear that the differences in deaf students are seen in cognitive skills, physical and motor skills, abstraction power, and emotional and social aspects. The impact of hearing loss experienced by deaf children can be in the form of delays in the communication process, which will also impact the learning and education process. According to Muhibbin [1] the condition of weak organs such as health, hearing, and vision causes the decline in cognitive abilities of deaf students in obtaining information.

Another impact of deafness is the inability of abstraction power because deaf students have limitations in terms of language and difficulties in participating in mathematics learning. Under the statement of Bunawan and Yuwati [2], it states that language skills are a major requirement when children do tasks that use higher power of logic and abstraction. The ability of deaf children's abstraction power can be said to be lower than the ability

to hear children's abstraction power. Bunawan and Yuwati [2] mention that, "The lack of abstraction power on some tasks is only the result of the child's limited ability, not a state of mental retardation (mentally retarded)." So, if the language skills are improved, the abstracting ability will also increase. Memory power such as pictures and numbers verbalized for deaf children shows lower than normal hearing children. The reason for this is that rhythmic data is easy to remember. Data that can support memory can be sung or read rhythmically, emphasizing certain elements. Based on the expert opinions above, it can be concluded that deaf children do not have intellectual barriers so that they also know and understand the information around them. The influence of the environment of deaf children in communication skills also supports deaf children to be able to convey and share this information with each other, and with other normal people. On the other hand, the nature of deaf children seems selfish, and having a desire to constantly interact with the environment continuously so that they can survive can make deaf children less able to control their desires in the environment they are in. So that in some conditions, deaf children often show disturbing

behavior, such as when the teaching and learning process takes place.

According to Semium [3], maladaptive behavior is a permanent pattern of behavior in which individuals break the rules and violate the rights of others. In line with this opinion, Mabeba and Prinsloo explain that maladaptive behavior violates the school's rules or regulations and the surrounding environment [4]. Based on observations at *Sekolah Dasar Luar Biasa – B* (Special Elementary School Type B) Karya Mulia class VI, a student has the characteristics of deafness as described. He desires to interact with the environment continuously, disregarding the fact that he is studying in class, so these characteristics become maladaptive behavior in the classroom. This behavior causes the learning process to be disrupted. Learning objectives are not achieved, such as unfinished note-taking tasks, not paying attention to the teacher's explanations, and not understanding the material. This habit not only harms him but also harms learning in the classroom. The impact is not understanding the teacher's explanation, not doing assignments, and not achieving learning objectives because these habits are transmitted to classmates. If this is not prevented and there is no proper treatment, it will form bad habits in the classroom.

The strategy used to control maladaptive behavior during learning uses the Differential Reinforcement of Other Behavior (DRO) program. This strategy can shape expected behavior and reduce unwanted behavior if the child is trained to resist the urge to speak at increased and modified time intervals. The Differential Reinforcement of Other Behavior (DRO) program is accompanied by behavioral modification of reinforcement and punishment, which also goes hand in hand so that the behavior to be eliminated is immediately reduced. Research by Daddario et al. [5] that the Differential Reinforcement of Other Behavior (DRO) program can reduce maladaptive behavior in preschool (*Taman Kanak-kanak*) children. It is reinforced by another study conducted by Haring [6], which concluded that the Differential Reinforcement of Other Behavior (DRO) program could reduce stereotyped behavior in autistic children during group learning. It is not impossible if the Differential Reinforcement of Other Behavior (DRO) program can change the disturbing behavior of deaf children. Determination of treatment with the program *Differential Reinforcement of Other Behavior (DRO)* This is based on the results of ABC observations of behavior caused by the pleasure felt by students when students get attention from friends. Applying the Differential Reinforcement of Other Behavior (DRO) program on student behavior is carried out because students can no longer be given warnings or reprimands. Seat changes are not effectively carried out on students. The application of neglect in class also does not have a good impact. It has a bad effect because it influences other friends to join the conversation. The Differential Reinforcement of Other Behavior (DRO) program applied to the subject is a form of exercise to resist the

urge to speak. At the same time, learning takes place for a specific time interval, and if the subject can do so, the subject will be given positive reinforcement or vice versa. Providing positive reinforcement here is different from the positive reinforcement procedure that is given for granted. In the Differential Reinforcement of Other Behavior (DRO) program, reinforcement is given only when students bring up the target behavior for a predetermined time. Program implementation *Differential Reinforcement of Other Behavior (DRO)* It is hoped to reduce maladaptive behavior during classroom learning that interferes with learning so that effective learning can be created and the desired learning objectives are achieved.

## 2. METHODS

### 2.1. Types of research

The type of research used is experimental research with a single case approach with AB design (Purwanta, 2009)[7]. This study has four phases: preparation, baseline, intervention, and follow-up. In preparation, the researcher conducted a literature review, behavioral function analysis, reinforcement assessment, and game assessment. Before the intervention was implemented, the researcher took baseline data to see the participants' maladaptive behavior duration for three sessions. After the baseline results stabilized, the intervention was started for seven sessions. During the implementation of the intervention, the duration of maladaptive behavior that appears during learning is expected to decrease. The follow-up phase was carried out in five sessions.

### 2.2. Research Subjects and Objects

The subjects in this study were deaf children in class VI SDLB-B at Karya Mulia I Special School Surabaya with the initials AB. Children have the habit of speaking (using sign language) by inviting their friends to chat, but the material discussed is not subject matter during class hours. He also does not pay attention to the teacher when explaining and always submits assignments late.

Likewise, he showed such behavior when he was at home. Since the COVID-19 pandemic, he has spent 5 hours watching TV or playing gadgets. Not infrequently, his parents did not control and allowed him to use electronic media as a tool to calm or spend their time at home. It makes them difficult to interact with, and tend to be self-absorbed. He rarely turns his head when his name is called and is difficult to attract. He prefers to watch television or Youtube rather than interact with other people.

### 2.3. Research Instruments

This study used data collection instruments in the form of observations and interviews. The ABC observation sheet used a behavioral and observational recording of the duration and frequency of the subject's disturbing behavioral activity. The interview used a

structured interview. The teacher was asked to write down the duration of the students' maladaptive behavior every day on the observation sheet. The maladaptive behavior observation sheet used in this intervention program was adapted from research by Lauricella, Wartella, and Rideout [8]. Besides writing down the duration of the maladaptive behavior, the teacher was also asked to write down the information of the type of maladaptive behavior caused by the child. The duration of the maladaptive behavior was calculated by adding up the duration of the maladaptive behavior in each session, then averaged. According from research Wangid, Mustadi and Senen (2017) The intervention will be considered successful if the participant can show a decrease in the mean duration of the maladaptive behavior of at least 60 minutes[9].

**2.4. Data Analysis Technique**

The experimental research data with this single subject were analyzed through descriptive statistics. The research data are presented in graphs. Data analysis of observation results recording the duration of learning activities during learning using qualitative data analysis. The data were obtained from field notes during students' disturbing behavior during class learning.

Data analysis of disturbing behavior activities was analyzed quantitatively. Quantitative data were obtained from calculating the duration and frequency that appear in controlling maladaptive behavior in the initial test before using the program *Differential Reinforcement of Other Behavior (DRO)*, when using the DRO program, and after using the DRO program.

Changes in maladaptive behavior can be seen from the trend direction from A1-B-A2. Hypothesis testing was carried out descriptively by analyzing the results of observations and interviews of students' maladaptive behavior during class learning. The hypothesis is accepted if there is a change in the maladaptive behavior of deaf students in a better direction (a downward trend).

**3. RESULTS**

**3.1 Description Baseline 1 (The habit of the subject before being given the intervention)**

Baseline 1 was carried out three times of observation until the data became stable. Baseline 1 is done by observing the conditions of activities during class learning. When implementing baseline 1, it was seen that the subject had a maladaptive habit, that is, he likes to talk in class with friends outside of the material during teaching and learning activities. The researcher observed three observations with this bad habit, causing the subject to ignore the teacher's orders often and be late in completing assignments. He also negatively influences his friends by inviting them to join in the conversation and pay attention to what he is talking.

**Table 1.** Duration And Frequency of Subject Maladaptive Behavior In Baseline Phase 1

Session	Duration	Frequency
1	35 minutes	10 times
2	28 minutes	8 times
3	25 minutes	7 times

At the initial observation, the subject showed a frequency of 8 times and used 58 minutes for maladaptive behavior activities (complete data can be seen in Table 1). Based on the data above, it shows that the maladaptive behavior of the two subjects in the classroom when learning is in progress still has a high duration and frequency of the overall effective learning hours in the classroom during academic learning hours

**3.2 Intervention Description (Pre-Intervention)**

The intervention was carried out for seven sessions, based on the implementation of the intervention; Table 2 is the data on the accumulation of the results of changing the maladaptive behavior of subjects carried out during classroom learning from interventions 1-7.

**Table 2.** Duration And Frequency of Subject Maladaptive Behavior In The Intervention Phase (B)

Session	Duration	Frequency
1	13 minutes	10 times
2	11 minutes	9 times
3	11 minutes	8 times
4	10 minutes	8 times
5	9 minutes	6 times
6	7 minutes	4 times
6	5 minutes	3 times

Based on the data above, it can be seen that in the phase intervention, the subject experienced a significant decrease in controlling maladaptive behavior activities during classroom learning.

**3.3 Description of Baseline 2 (Time after intervention)**

In baseline phase 2, observations were made after implementing the intervention. It aims to measure and strengthen the results of the Differential Reinforcement of Other Behavior (DRO) program on changing maladaptive behavior while studying in class. The implementation of baseline 2 (Follow up) is carried out after the intervention has been completed. The baseline phase was carried out for five sessions. The results after being given treatment are given in Table 3.

**Table 3.** Duration And Frequency of Subject Maladaptive Behavior in The Baseline Phase (II)

Session	Duration	Frequency
1	3 minutes	3 times
2	2 minutes	2 times
3	2 minutes	1 times
4	1 minutes	1 times
5	1 minutes	0 times

In the baseline phase 2, the length of time and the frequency of appearance of maladaptive behaviors used to disrupt learning in class were found. Compared to the duration at baseline 1, the duration at baseline 2 after being given the intervention showed a change, so it can be concluded that the intervention or program *Differential Reinforcement of Other Behavior (DRO)* which is applied to change children's maladaptive behavior when learning in class is successful. Shown on the graph decreases at the time of intervention and baseline.

**4. DISCUSSION**

The results of this study indicate that the application of the *Differential Reinforcement of Other Behavior (DRO)* program for research subjects has proven to have a positive effect in reducing maladaptive behavior of research subjects during learning. This effect can be seen from the decrease in the duration and frequency of maladaptive behavior shown by the subject in Baseline 1-Intervention-Baseline 2. The duration and frequency of the subject's maladaptive behavior are lower after the intervention using the *Differential Reinforcement of Other Behavior (DRO)* program than before the intervention.

The *Differential Reinforcement of Other Behavior (DRO)* program can reduce the duration and frequency of maladaptive behavior by increasing attention to the teacher. If this is true, the duration and frequency of talking with friends outside of the subject matter will be shorter. The duration and frequency of the following learning in silence will increase because the subject has a previously agreed contract with an increasingly increasing interval. The subject must show the target behavior if the research subject wants to get a preferred reinforcement and avoid things he does not like (punishment). This explains why the *Differential Reinforcement of Other Behavior (DRO)* program can reduce research subjects' maladaptive behavior during learning. [10]

Deaf children have learning and memory perception criteria that are not much different from normal children [11]. So, the subjects in this study can remember and understand that the subject has a contract or agreement to

show target behavior if the research subject wants to get what he likes or avoids the things you don't like. Giving the reinforcement is a procedure in the *Differential Reinforcement of Other Behavior (DRO)* program. This program has the advantage of accelerating the decline of unwanted behavior by presenting things that the subject likes or vice versa [12].

The duration and frequency of talking with friends during learning gradually decreased in the intervention and baseline phases2. The provision of a variable interval schedule that can be increased in this program helps the subject begin to adapt gradually to increase the duration of the target behavior [13]. Since the longer the time interval set, the duration of the subject shows that the given reinforcement strengthens the target behavior. It causes the shorter duration and frequency of maladaptive behavior shown by research subjects.

The *Differential Reinforcement of Other Behavior (DRO)* program reduces the duration and frequency of research subjects to talk to friends outside of the learning material. It shows an increase in the duration of the research subject's concentration on learning activities. This is indicated by the final result of measuring the subject's maladaptive behavior, which is indicated by a decrease in the duration of the change in the level of change at baseline 1-intervention-baseline 2, which is 29 minutes to 9 minutes and 2 minutes. At the same time, the decrease in frequency is indicated by changes in baseline A1-intervention-baseline A2, namely eight times to 7 then one time.

The decrease in the duration and frequency of maladaptive behavior that occurs in the data results is due to several things: *Differential Reinforcement of Other Behavior (DRO)* provides reinforcement immediately after the interval time runs out, *Differential Reinforcement of Other Behavior (DRO)* provides reinforcement that is adjusted to what is preferred or avoided by research subjects, and increasing the time interval to train research subjects to increase the desired target indirectly. Reinforcers adjusted to what the subject likes or dislikes, attracting research subjects not to show the target behavior if they want to get reinforcement. The reinforcement is given immediately also made the subject happy and excited to do the *Differential Reinforcement of Other Behavior (DRO)* program. In addition, the interval that was increased gradually and adjusted to the learning time attracted the research subjects to refrain from talking to friends for longer periods of time, so that they became accustomed to it and decreased the duration and frequency of maladaptive behavior during learning quickly.

This result is the same as the research obtained by Vance, Gresham, and Dart [14], which results in the *Differential Reinforcement of Other Behavior (DRO)* program can reduce maladaptive behavior in normal children. Another study conducted by Capriotti, Brandt,

Ricketts, et al. [15] also concluded that the Differential Reinforcement of Other Behavior (DRO) program could reduce the behavioral effects of Tourette Syndrome in children with Tourette syndrome. The Differential Reinforcement of Other Behavior (DRO) program procedure resulted in the subject's desire to be silent and follow the learning to increase. The subject will get the preferred reinforcer or avoid the disliked reinforcer by showing the target behavior.

## 5. CONCLUSION

Based on the research results obtained, it can be concluded that the Differential Reinforcement of Other Behavior (DRO) program has a good (positive) effect. The decrease in maladaptive behavior can explain this during classroom learning by students, which can be seen from the reduced duration and frequency of disruptive behavior. The results of this study indicate that through the DRO program, student labor habits that have occurred can be reduced, including children's maladaptive behavior during class learning. It is because Differential Reinforcement of Other Behavior (DRO) has advantages that attract subjects to follow this program well, such as reinforcements that are given immediately, reinforcements that are adjusted to what the subject likes or dislikes,

Thus, it can be concluded that using the DRO program can reduce the maladaptive behavior of deaf students that occurs during learning during academic learning hours. It follows the existing theory that the DRO program can reduce unwanted behavior. The DRO program can also be applied to change other behaviors that are considered disturbing.

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