

The Effect of Differential Reinforcement of Other Behavior (DRO) on Disruptive Behavior for Intellectual Disability in SLB C Setyadarma Surakarta

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ABSTRACT

This research aims to determine the effect of Differential Reinforcement of Other Behavior on disruptive behaviour for intellectual disability in SLB C Setyadarma Surakarta. This method of research is single-subject research with an A-B-A design. The validity test was obtained through Aiken's V formula with a coefficient of 0.75, and the reliability test received a score of 0.982. The data collection technique used observation to calculate the duration of leaving a seat without permission. Data analysis techniques are carried out using analysis within and between conditions. The result showed that the mean decreased from baseline phase 1 (A1) by 16.7 to 2.6 in intervention phase (B), and in baseline 2 (A2), it increased to 4.15. This research concludes that Differential Reinforcement of Other Behavior (DRO) affects disruptive behaviour for intellectual disability in SLB C Setyadarma Surakarta.

Keywords: Behavioral Modification, Differential Reinforcement of Other Behavior, Disruptive Behavior, Intellectual Disability

INTRODUCTION

Intellectual disability is an obstacle that occurs during the developmental period, which includes obstacles to intellectual function and adaptive behaviour in the conceptual, social and practical fields (DSM-5-TR, 2022). Mental retardation is classified into mild intellectual disability, moderate intellectual disability, and severe intellectual disability. Each classification has different problems (Setella et al., 2024). Mental retardation has limitations in socializing, controlling emotions and intelligence (Fauziah, 2020). Generally, mentally disabled students have difficulty in adaptive behaviour. The mentally disabled have difficulty adapting to the environment (Nilna Uffi, 2022). The problems experienced in adapting can lead to the emergence of maladaptive behaviour (Daulay, 2021). There are various types of maladaptive behaviour; one of the most prominent is disruptive behaviour.

Disruptive behaviour is an activity that hinders the learning process, the teacher's ability to teach, and the students' learning concentration (Vongvilay et al., 2021). Students commonly engage in various forms of disruptive behaviour. Kagan et al. (2019) divide disruptive behaviour into 4 categories called the ABCD of disruptive behaviour. According to Kagan, there are four categories of disruptive behaviour: aggression, breaking the rules, confrontation, and disengagement. Aggression behaviour includes physical and verbal aggression. Breaking the rules includes behaviour that violates the rules, such as leaving a seat without permission, leaving the classroom without permission, and running around in the school. Confrontation behaviour includes refusing to obey the teacher, arguing, mocking, and so on. Meanwhile, disengagement includes avoidance behaviour towards tasks, such as lack of attention, not completing assignments, etc.

The results of observations carried out at SLB C Setyadarma Surakarta showed that class IV mentally disabled students showed disruptive behaviour. This disruptive behaviour involves leaving a seat, leaving class without permission, and disturbing friends studying. This impacts the learning process by being less conducive, and adequate time for learning is reduced because the teacher often reprimands the students to sit back in their chairs.

An effort is needed to reduce behaviour that causes the learning process in the classroom to be ineffective and conducive (Afifah et al., 2019). One effort that can be made is behaviour modification. It is that bad behaviour can be changed, and behaviour will emerge through behaviour. One behaviour modification procedure that can be applied is Differential Reinforcement of Other Behavior (DRO). This is supported by research conducted by Repp on disruptive behaviour in mildly mentally disabled students (Miltenberger, 2023, p. 232). However, the DRO procedure has not been implemented by teachers as an alternative solution to the problem of disruptive behaviour carried out by students with intellectual disabilities. Based on the problem and background, the researcher wants to research to determine the effect of Differential Reinforcement of Other Behavior (DRO) on the disruptive behaviour of intellectually disabled students in SLB C Setyadarma Surakarta.

METHOD

The research method used is single-subject research (SSR) experimental research. According to Prahmana (2021, p. 9), Single Subject Research is an experimental research method that evaluates interventions on the behaviour of a single subject which is carried out repeatedly over a certain period. In this research, the design used was A-B-A with 16 sessions. This research aims to determine the effect of Differential Reinforcement of Other Behavior (DRO) on disruptive behaviour. The subject in this research was 1 class IV mentally disabled student.

The data collection process in this research was carried out by observation with the help of three raters. Technical data analysis is carried out by analyzing within conditions and between conditions. The validity used is content validity. The results of the validity test using Aiken's V formula obtained a coefficient of 0.75. Reliability in this study uses interrater reliability, which is calculated using the ICC formula using the SPSS Version 26 application. This produces a coefficient of 0.978 with a very good level of reliability.

RESULT AND DISCUSSION

Baseline 1 (A1)

The research began by measuring the subject's initial condition by observing and recording the frequency of leaving the subject's seat before being given intervention for 30 minutes. Data collection in baseline phase 1 was carried out in 3 sessions. During baseline phase 1, students showed disruptive behaviour by leaving their seats without permission when the teacher explained the material.

Intervention (B)

The intervention provided is Differential Reinforcement of Other Behavior (DRO). The intervention phase was carried out for ten sessions. In the intervention phase, the researcher acts as a teacher. Before starting learning, researchers make behavioural contracts with students. Students will receive reinforcement if they need permission to leave

their seats during the specified time. The reinforcement given to students needs to be analyzed functionally. After the analysis, it was decided that the reinforcement given to the subject was a sticker with a picture of a bus. The initial DRO interval used is 3 minutes. The interval will be increased by 2 minutes if students can obtain reinforcement in almost the entire interval.

Baseline 2 (A2)

In the baseline-2 (A2) phase, intervention is no longer provided. Researchers measured the subject's behaviour again through observations with observation sheets. Baseline phase 2 observations were carried out in 3 sessions. In baseline phase 2, the subject's behaviour increased in duration.

Table 1 Research result

Phase	Session	Duration
A1	1	17,03
	2	16,06
	3	17,11
B	4	8,23
	5	3,1
	6	3
	7	0
	8	2,20
	9	2,11
	10	2,13
	11	2,11
	12	2,10
	13	2,10
A2	14	4,31
	15	4,15
	16	4,13

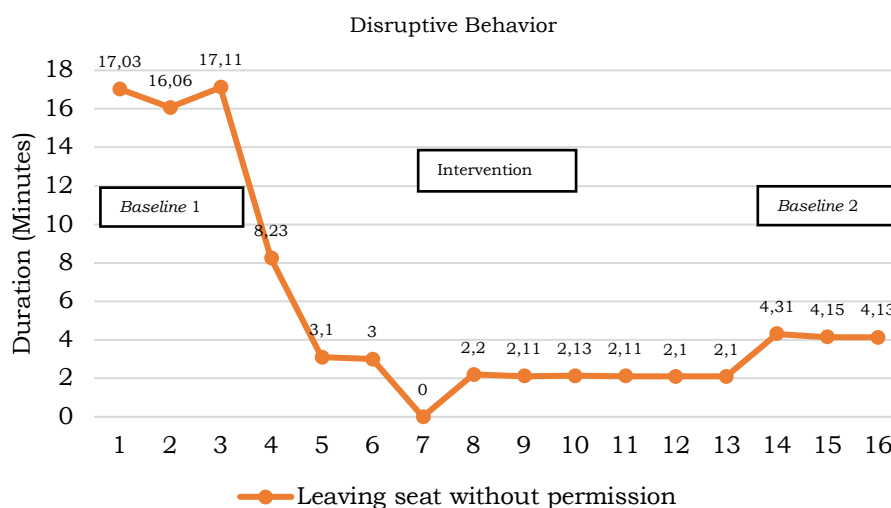


Figure 1. Disruptive behavior chart

Analysis within condition

Condition length is the number of sessions in each phase. In this study, the baseline phase 1 was three sessions, the intervention phase was ten sessions, and the baseline phase 2 was three sessions. The directional trend in baseline phase 1 (A1) has increased with a stability percentage of 100%. The intervention phase (B) also decreased with a stability percentage of 80%. Meanwhile, in the baseline phase 2 (A2), it is flat or stable with a stability percentage of 100%. The level of stability in baseline 1 (A1) was stable with a range of 17.03-17.11, the intervention phase (B) was stable with a range of 8.23-0, and the baseline phase 2 was stable with a range of 4.31-4.13. The level of change in the baseline phase 1 (A1) was (-) 0.08 (increased), and in the intervention phase, there was a decrease of (+) 6.13 (decreased). And in the baseline phase 2 (A2), there was a decreasing change of (+) 0.18 (decreasing)

Table 2. Analysis within condition

Condition	A1	B	A2
Condition length	3	10	3
Trend	/	\	\
Stability	Stable (100%)	Stable (80%)	Stable (100%)
Data Path	/	\	\
Level stability and range	Stable 16,06-17,11	Stable 8,23-0	Stable 4,31-4,13
Level change	17,03-17,11 (-) 0,08	8,23-2,10 (+) 6,13	4,31-4,13 (+) 0,18

Analysis between conditions

The number of variables in this study from baseline phase 1 to the intervention phase and intervention phase to baseline 2 is 1, namely, leaving your seat without permission. Changes in direction are obtained based on the analysis under the conditions that have been carried out. The change in data stability from baseline phase 1 (A1) to the intervention phase (B) is stable. The intervention phase (B) to the baseline phase 2 shows stable to stable.

Table 3. Analysis between conditions

Condition	A1/B	B/A2
Variable	1	1
Trend and effect	/ \	\ /
Stability	Stable to Stable	Stable to Stable
Level change	17,11 – 8,23 (+8,88)	2,10-4,31 (-2,21)
Overlap	0%	0%

Based on the data analysis within and between conditions that have been carried out, it is known that the mean frequency of disruptive behaviour frequency in baseline phase 1 is 16.7 with a stability level of 100%. In baseline phase 1, the subject was seen frequently leaving his seat and disturbing other students. Several factors cause the emergence of disruptive behaviour by mentally disabled students. Factors that influence disruptive behaviour in the classroom include boredom, learning difficulties and lack of attention (Bektiningsih et al., 2023). Jihan & Hasibuan (2023) found that emotional factors such as boredom, jealousy and anxiety also influence the emergence of disruptive behaviour in students.

The intervention was conducted for ten sessions with a mean level of 2.6. There has been a decrease compared to baseline 1. The decrease in the duration of this disruptive behaviour was influenced by the intervention provided, namely Differential Reinforcement of Other Behavior (DRO). This is supported by research by Novialassafitri et al. (2022), who applied DRO to the duration of disruptive behaviour in deaf students. The decrease in duration was also caused by the reinforcement provided. Miltenberger (2023) explains that the effectiveness of DRO depends on the reinforcement provided.

In baseline phase 2 (A2), the mean level was 4.15. It can be seen that the mean level has increased compared to the intervention phase. Baseline phase 2 was used to evaluate the effect of the intervention. Behavior improved after the intervention was not given. This means that the intervention provided affects behaviour. The increase in the duration of behaviour also results from removing reinforcers given during the intervention. The frequency, duration, and latency will increase if the behaviour is no longer reinforced (Farihah & Aflahani, 2021).

Based on the inter-condition analysis, the direction trend changed from baseline phase 1 (A) to the intervention phase (B). In the baseline phase 1 (A), the change in direction tends to increase, and then in the intervention phase (B), the change in direction is different, namely decreasing. So this proves that after being given the intervention, the duration of the subject's leaving behaviour decreased. Data overlap for the entire session is 0%. This strengthens the statement that the intervention provided influences behaviour. (Prahmana, 2021) states that the smaller the data overlap, the better the influence.

CONCLUSION

The analysis results between conditions and within conditions show a decrease in students' disruptive behaviour. This change is based on a decrease in the mean in baseline phase 1 (A1) of 16.7 to 2.6 in the intervention phase (B). Then, after the intervention was no longer given, there was an increase in behaviour with a mean of 4.15 in baseline phase 2 (A2). So, based on this analysis, it is known that DRO influences the disruptive behaviour of intellectual disability in SLB C Setyadarma Surakarta.

REFERENCES

- Afifah, F., Anwar, M., & Hermawan, H. (2019). The Effectiveness of Play Therapy to Minimize Hyperactive Behavior of Mild Intellectual Disabilities Student in 1st Grade at SLB C Setya Darma Surakarta Academic Year of 2018/2019. *IJDS Indonesian Journal of Disability Studies*, 6(2), 169–175. <https://doi.org/10.21776/ub.ijds.2019.006.02.7>

- Bektiningsih, Fauzati, E., Prastiwi, Y., & Rahmawati, L. E. (2023). Factors Causing Disruptive Behavior of Students in the Classroom: A Case Study in Elementary School. *Proceedings of the International Conference on Learning and Advanced Education (ICOLAE 2022)*, 369–377. https://doi.org/10.2991/978-2-38476-086-2_31
- Daulay, N. (2021). Perilaku Maladaptive Anak dan Pengukurannya. *Buletin Psikologi*, 29(1), 45. <https://doi.org/10.22146/buletinpsikologi.50581>
- DSM-5-TR. (2022). *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition Text Revision*. Washington: American Psychiatric Association.
- Fariyah, I. U., & Aflahani, A. P. E. (2021). PENGARUH MODIFIKASI PERILAKU PENGHAPUSAN (EXTINCTION) PADA PERILAKU MEMBANTING PINTU & MELEMPAR BARANG SAAT MARAH PADA ANAK USIA 5-6 TAHUN. *Jurnal Lentera Anak*, 2(2), 43–60. <https://ejournal.unisnu.ac.id/jla/article/view/3106>
- Fauziah, R. (2020). Pengaruh Media Papan Berpaku Terhadap Hasil Belajar Matematika Pada Materi Bangun Datar Pada Siswa Tunagrahita Kelas II di SLB C1 Putera Asih Kediri. *SPECIAL: Special and Inclusive Education Journal*, 1(1), 68–73. <https://doi.org/10.36456/special.vol1.no1.a2299>
- Jihan, N., & Hasibuan, A. D. (2023). Upaya Guru BK dalam Mengatasi Perilaku Misbehavior Siswa. *Eduinovasi: Journal of Basic Educational Studies*, 3(2), 526–539. <https://doi.org/47467/eduinovasi.v3.i2.3302>
- Kagan, S., Kyle, P., & Scott, S. (2019). *Win-Win Discipline*. San Clemente: Kagan Publishing.
- Miltenberger, R. G. (2023). *Behavior Modification Principles and Procedures*. Boston: Cengage.
- Nilna Uffi, A. (2022). Pengaruh Metode Bermain Plastisin dalam Meningkatkan kemampuan kognitif Siswa Tunagrahita Sedang Kelas VIII di SLB Negeri Cerme Gresik. *Special and Inclusive Educational Journal*, 3(1), 59–69. <https://doi.org/https://doi.org/10.36456/special.vol3.no1.a5910>
- Novialassafitri, S. D., Masitoh, S., & Purbaningrum, E. (2022). Implementation of Differential Reinforcement of Other Behavior (DRO) with Digital Video Assistance to Reduce Maladaptive Behavior in Deaf Children. *Proceedings of the Eighth Southeast Asia Design Research (SEA-DR) & the Second Science, Technology, Education, Arts, Culture, and Humanity (STEACH) International Conference (SEADR-STEACH 2021)*, 627, 74–78. <https://doi.org/10.2991/assehr.k.211229.012>
- Prahmana, R. C. I. (2021). *Single Subject Research (teori dan implementasinya: suatu pengantar)*. Yogyakarta: UAD Press.
- Setella, A., Subagya, & Arsy, A. (2024). The Effect of Role-Playing Method on Shopping Skills in Self-Development Learning for Children with Intellectual Disability in SLB Negeri Surakarta. *Special*, 5(1), 52–60. <https://doi.org/10.36456/special.vol5.no1.a9146>
- Vongvilay, P., Fauziati, E., & Ratih, K. (2021). Types and Causes of Students' Disruptive Behaviors in English Class: A Case Study at Dondaeng Secondary School, Laos. *Jurnal Penelitian Humaniora*, 22(2), 72–83. <https://doi.org/10.23917/humaniora.v22i2.13457>