Academia Open
Vol. 10 No. 2 (2025): December
DOI: 10.21070/acopen.10.2025.12477

Behavior Contract Group Counseling Reduces Student Gadget Addiction

Nadra Araudha Program Studi Bimbingan Konseling Pendidikan Islam, Universitas Islam Negeri Sumatera Utara
Nefi Darmayanti Program Studi Bimbingan Konseling Pendidikan Islam, Universitas Islam Negeri Sumatera Utara

General Background: Rapid digitalization in the 21st century has transformed human life, but excessive gadget use among adolescents has triggered health issues, reduced academic focus, and weakened social interaction. **Specific Background:** Observations at MTs Darul Ulum Budi Agung Medan revealed eighth-grade students displaying high levels of gadget addiction, highlighting an urgent need for effective counseling interventions. **Knowledge Gap:** Although group counseling is known to foster behavioral change, limited evidence exists on the specific efficacy of the **Behavior Contract technique** for reducing gadget addiction in Islamic junior high school settings. **Aims:** This study examined the effectiveness of group counseling using the Behavior Contract technique to reduce gadget addiction among students. **Results:** Using a quasi-experimental Non-Equivalent Control Group Design with 12 purposively sampled students, statistical analysis showed significant reductions in addiction in the experimental group (Wilcoxon Signed-Rank Test, $p = 0.028$; Mann-Whitney U Test, $p = 0.004$), unlike the control group. **Novelty:** This research introduces a structured Behavior Contract as a written agreement with reinforcement strategies, demonstrating measurable behavioral improvements in a religious school context. **Implications:** Findings suggest that integrating Behavior Contract-based group counseling into school guidance programs can effectively decrease gadget dependence, enhance discipline, and strengthen students' learning focus and social interaction.

Highlights:

- Proven effectiveness of Behavior Contract technique in reducing gadget addiction.
- Significant statistical results confirm measurable behavioral improvement.
- Practical integration into school counseling to enhance discipline and focus.

Keywords: Behavior Contract, Gadget Addiction, Group Counseling, Quasi-Experimental, Student Intervention

Introduction

The 21st century is marked by the rapid development of digital technology that brings significant changes to human life. The presence of technology, especially gadgets, has provided many conveniences as well as challenges. In Indonesia, around 160 million people or about 59% of the population use gadgets to access social media and various entertainment applications. Gadgets have a positive impact by providing ease of communication, access to information, and enhanced creativity, but they also lead to negative effects such as health issues, decreased concentration in learning, antisocial behavior, and exposure to negative content.

One of the techniques in group counseling services that can be used to reduce gadget addiction among students in this study is the Behavior Contract technique. The Behavior Contract technique was developed by B.F. Skinner based on behaviorism learning theory, which is founded on the idea that learning is a function of clearly changing an individual's behavior. Behavior Contract is defined as a written agreement between two or more individuals where one or both parties agree to engage in a target behavior. There are several things to consider in a Behavior Contract, namely: (1) State the contract in positive sentences, (2) Arrange tasks and criteria that are achievable, (3) Provide reinforcement as soon as possible, (4) Encourage individuals to develop self-reinforcement, (5) Use tiered contracts (contracts that refer to tasks, followed by rewards that create new contracts, followed by task execution, rewards, contracts, and so on).

Observations at MTs Darul Ulum Budi Agung Medan reveal that several eighth-grade Tahfidz students are showing signs of gadget addiction. They often ignore school assignments, engage less with peers, and even resort to using gadgets covertly during lessons . This behavior indicates challenges in regulating gadget use. To mitigate the problem, guidance and counseling interventions are needed, particularly through group counseling sessions. Group counseling allows students to gain support, prevention, and personal development through interaction with counselors and group members. One of the techniques that can be used is a Behavior Contract, which is a written agreement between the counselor and the student to change maladaptive behavior with mutually agreed consequences. Previous research has proven the effectiveness of this technique in reducing symptoms of gadget and online game addiction among junior high school students. Based on this description, this study aims to examine the effectiveness of group counseling with the Behavior Contract technique in reducing gadget addiction among students, using a quasi-experimental pretest-posttest design.

Method

The title of the article, the name of the author (without academic titles), the affiliation and the address of the author's affiliation are centered on the first page below the title of the article. The spacing between the title and the author’s name is set at two lines, while the distance between the author’s affiliation address and the abstract heading is one line . Keywords must be placed below the abstract in each language, arranged alphabetically, and separated by semicolons, with a total of three to five terms. For articles written in Indonesian, the English translation of the title should appear at the beginning of the English abstract (see example above). This research uses a quasi-experimental method with a Non-Equivalent Control Group Design, which consists of two groups: the experimental group that receives the treatment and the control group that does not receive the treatment [12]. Both groups are given pretests and posttests [13]. The research population consists of 41 students from class VIII-1 and VIII-3 Tahfidz.

The samples were determined using purposive sampling technique based on the criteria of high gadget addiction level obtained from the pretest results. From 41 students, 12 students who met the criteria were obtained, then divided into two groups, namely 6 students in the experimental group and 6 students in the control group [13]. The purposive sampling technique was chosen because it aligns with the opinion that samples are determined based on certain criteria or characteristics. The research instrument is a questionnaire that is formulated based on the indicators of gadget addiction according to [14]. The instrument development process consists of several stages, including drafting a blueprint, conducting a pilot test, applying the treatment, and performing data analysis. The questionnaire adopts a five-point Likert scale with response options ranging from Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), to Strongly Disagree (SD). Favorable items are scored from 5 to 1, while unfavorable items are scored in reverse, from 1 to 5. Validity testing is carried out using the product-moment correlation technique, with items considered valid when the calculated r exceeds the r-table value. Reliability testing, assessed through Cronbach’s Alpha, produced a coefficient of 0.864, confirming the instrument’s reliability. Data analysis techniques use non-parametric tests, namely the Wilcoxon Signed-Rank Test to measure the difference between pretest and posttest within the group, and the Mann-Whitney U

Academia Open
Vol. 10 No. 2 (2025): December
DOI: 10.21070/acopen.10.2025.12477

Test to compare results between the experimental group and the control group. Data analysis is conducted with the aid of SPSS for Windows version 25 [15].

Results and Discussion

A. Validity Test

Validity testing in research aims to ensure that each statement in the questionnaire can measure what is intended to be studied[16]. Therefore, before being used, the questionnaire must undergo validity and reliability testing. In this study, the researcher distributed a questionnaire containing 40 statement items to 52 respondents, and the test results showed that 30 items were declared valid.

No	R_{Hitung}	R_{Table}	Description
1	0.506	0,2732	Valid
2	0. 403	0,2732	Valid
3	0.239	0,2732	InValid
4	0.408	0,2732	Valid
5	0.252	0,2732	InValid
6	0.391	0,2732	Valid
7	0.487	0,2732	Valid
8	0.450	0,2732	Valid
9	0.418	0,2732	Valid
10	0.465	0,2732	Valid
11	0.402	0,2732	Valid
12	0.211	0,2732	InValid
13	0.428	0,2732	Valid
14	0.169	0,2732	InValid
15	0.528	0,2732	Valid
16	0.537	0,2732	Valid
17	0.440	0,2732	Valid
18	0.425	0,2732	Valid
19	0.478	0,2732	Valid
20	0.246	0,2732	InValid
21	0.208	0,2732	InValid
22	0.414	0,2732	Valid
23	0.421	0,2732	Valid
24	0.470	0,2732	Valid
25	0.392	0,2732	Valid
26	0.422	0,2732	Valid
27	0.556	0,2732	Valid
28	0.532	0,2732	Valid
29	0.419	0,2732	Valid
30	0.228	0,2732	InValid
31	0.259	0,2732	InValid
32	0.478	0,2732	Valid
33	0.408	0,2732	Valid
34	0.441	0,2732	Valid
35	0.425	0,2732	Valid
36	0.209	0,2732	InValid
37	0.401	0,2732	Valid
38	0.380	0,2732	Valid
39	0.240	0,2732	InValid

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40	0.392	0,2732	Valid

Table 1. *Results of the Validity Test of the Gadget Addiction Questionnaire Instrument*

Based on Table 1, the questionnaire items are declared valid if the calculated r value is greater than the table r value. The calculated r value is obtained through the corrected item-total correlation, while the table r value is determined from the Pearson product moment table with degrees of freedom (df) = n - 2. With a total of 52 respondents, df = 50 is obtained, thus the table r = 0.2732. Because the calculated r > table r, the item is declared valid.

B. Reliability Test of the Instrument

Reliability testing is used to measure the consistency of questionnaires as indicators of research variables. An instrument is considered reliable if its reliability coefficient, measured using Cronbach's Alpha, has a value of ≥ 0.60. Conversely, if the Cronbach's Alpha value is < 0.60, the instrument is considered unreliable.

Reliability Statistics	Cronbach's Alpha	N of Items
	0.864	30

Table 2. *Results of the Reliability Test*

Based on the reliability test results in Table 2 using SPSS 25 for Windows, a Cronbach’s Alpha value of 0.864 was obtained, which is greater than 0.60. Thus, the questionnaire instrument used is declared reliable (suitable). This research measures the variable of gadget addiction, which includes five aspects: inability to manage time, lack of social interaction, tendency to be alone, decreased concentration in learning, and inability to self-control. The research instrument consists of 40 statement items; however, after undergoing validity and reliability tests, 30 items were found to be suitable for use. Measurement was performed using a Likert scale with five answer choices (scores 1–5). Therefore, the highest score is 150 (5 × 30) and the lowest score is 30 (1 × 30). The score range is 120 (150 – 30) and then divided into three categories with an interval distance of 40[17].

Kategori	Interval	Frekuensi	Persentase
Tinggi	111–150	12	100%
Sedang	71–110	0	0%
Rendah	30–70	0	0%
Jumlah		12	100%

Table 3. *Criteria Interval*

Based on Table 3, the pretest results indicate that all respondents (12 students or 100%) fall into the high gadget addiction category. Subsequently, the 12 students were divided into two groups, namely 6 students as the experimental group and 6 students as the control group.

Table 4. Results of Pretest and Posttest of the Experimental Group

No	Initial	Pretest Score	Pretest Criteria	Posttest Score	Posttest Criteria	Difference
1	DRS	124	Tall	35	Low	89
2	SA	123	Tall	42	Low	81
3	WSA	129	Tall	30	Low	99
4	SG	119	Tall	48	Low	71
5	MIB	117	Tall	37	Low	80

Academia Open
Vol. 10 No. 2 (2025): December
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6	DA	127	Tall	40	Low	87
Amount	**739**	**232**				

Table 4.

Based on the results of the pretest in Table 4, six students were in the high gadget addiction category before receiving the Behavior Contract treatment. After the treatment, the posttest results showed a decrease in gadget addiction levels to a low category, with score differences ranging from 71 to 99 points. These findings indicate that group counseling using the Behavior Contract technique is effective in reducing gadget addiction among students[18].

No	Initial	Pretest Score	Pretest Criteria	Posttest Score	Posttest Criteria	Difference
1	CR	114	Tall	65	Low	49
2	NA	120	Tall	72	Low	48
3	FPD	119	Tall	60	Low	59
4	ANR	117	Tall	120	Low	-3
5	CP	111	Tall	68	Low	43
6	AMA	115	Tall	112	Low	3
Amount		696		497		

Table 5. *Hasil Pretest dan Posttest Kelompok Kontrol*

Based on the results of the pretest in Table 5, six students in the control group were in the high gadget addiction category. After being given group counseling, the posttest results showed that three students were in the low category, one student in the medium category, and two students remained in the high category. The difference in score reduction in the control group ranged from 43 to 59 points. These results indicate that some students experienced changes, but not significantly, as there were still students who did not show a decrease or only a slight decrease. Thus, group counseling in the control group was not consistently effective in reducing gadget addiction, unlike the experimental group that received the Behavior Contract treatment[19].

C. Wilcoxon Signed Rank Test

The Wilcoxon Signed Rank Test is used to determine the difference in scores between the pretest and posttest in the experimental and control groups[20]. The results of the test are presented as follows:

	Posttest Experiment – Pretest Experiment	Control Posttest - Control Pretest
Z	-2.201b	-1.892b
Asymp. Sig. (2-tailed)	0.028	0.058
a. Wilcoxon Signed Ranks Test		
b. Based on positive ranks		

Table 6. *Statistical Test Results*

Based on table 6, the results of the Wilcoxon test indicate that the Asymp. Sig. (2-tailed) value for the experimental group is 0.028 < 0.05, suggesting a significant difference between the pretest and posttest scores. Meanwhile, for the control group, the Asymp. Sig. value obtained is 0.058 > 0.05, which means there is no significant difference. Thus, group counseling using the Behavior Contract technique has been proven effective in reducing students' gadget addiction.

D. Uji Mann-Whitney U Test

Academia Open
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Ranks				
	Kelompok	N	Mean Rank	Sum of Ranks
The Results of Gadget Addiction	Kelompok Eksperimen	6	3.50	21.00
	Kelompok Kontrol	6	9.50	57.00
	Total	12		

Table 7. *Results of the Mann-Whitney U Test*

The results of the Mann-Whitney U Test using SPSS 25 show that the mean rank of the experimental group is 3.50, which is lower than the control group at 9.50. The total sum of ranks in the experimental group is 21.00, while in the control group it is 57.00. This difference indicates that gadget addiction in the experimental group decreased after being treated with the Behavior Contract technique compared to the control group. The details of the test results can be seen in the following test statistic table.

Test Statisticsa	
	The Results of Gadget Addiction
Mann-Whitney U	.000
Wilcoxon W	21.000
Z	-2.882
Asymp. Sig. (2-tailed)	.004
Exact Sig. [2*(1-tailed Sig.)]	.002b
a. Grouping Variable: Kelas	
b. Not corrected for ties.	

Table 8. *Results of the Mann-Whitney U Test*

Based on table 8, the results of the Mann-Whitney U Test show an Asymp. Sig. (2-tailed) value of 0.004 < 0.05. Therefore, H_0 is rejected and H_a is accepted, which means there is a significant difference in the level of gadget addiction between the experimental and control groups. This proves that group counseling services using the Behavior Contract technique are effective in reducing gadget addiction. Group counseling services with the Behavior Contract technique were provided to the experimental group for a total of four sessions, each lasting 45 minutes, led by the guidance counselor. Meanwhile, the control group also received group counseling services with similar material, but without using the Behavior Contract technique. The Behavior Contract technique is a written agreement between the counselor and the participants to change certain behaviors [21]. In this study, the contract contains students' commitments to reduce screen time, increase social interactions, be aware of the negative impacts of addiction, and improve discipline and focus on learning. Students who achieve the set targets are given rewards in the form of praise or recognition, whereas those who do not fulfill the agreements receive sanctions, such as follow-up counseling with their parents or the requirement to read books and prepare summaries.

Each session addressed a different theme: (1) understanding the effects of gadget use and developing self-control, (2) identifying factors contributing to academic procrastination, (3) practicing emotional regulation with the support of worksheets, and (4) managing time alongside evaluating behavior contracts. The outcomes of these discussions indicated positive behavioral improvements, including a stronger commitment to finishing assignments before gadget use, better emotional regulation, and heightened awareness of gadget consumption. In contrast, the control group was only provided with material discussions, without behavior contracts, rewards, or targeted evaluations. As a result, the behavioral changes observed were more spontaneous and relatively less substantial than those in the experimental group[22].

The results of the study prove that the Behavior Contract technique is effective in reducing students' gadget addiction. The Wilcoxon Signed-Rank Test showed a significant difference in the

experimental group (Asymp. Sig. 0.028 < 0.05), while the control group did not show a significant difference (Asymp. Sig. 0.058 > 0.05). The Mann-Whitney U Test also confirmed a significant difference between the two groups (Asymp. Sig. 0.004 < 0.05), with the mean rank of the experimental group (3.50) being lower than that of the control group (9.50).

This finding is in line with research that emphasizes the effectiveness of Behavior Contracts in reducing addictive behaviors such as gadget addiction and phubbing. The implication is that group counseling services with Behavior Contract techniques can be implemented in schools to help students reduce gadget addiction, improve responsibility, social interaction, and focus on learning[23].

Conclusion

The research results indicate that group counseling using the Behavior Contract technique is effective in reducing gadget addiction among students. This is evidenced by the Wilcoxon Signed-Rank Test with an Asymp. Sig. value of 0.028 < 0.05 and the Mann-Whitney U Test with an Asymp. Sig. value of 0.004 < 0.05, which indicate a significant difference between the experimental and control groups. These findings imply that the Behavior Contract technique can be an effective strategy in counseling services to help students develop discipline, reduce excessive gadget use, and enhance learning focus. However, this study is limited by a small sample size and the limited hours of specific counseling services in schools. Therefore, future research is recommended to use a larger and more diverse sample, conduct long-term observations, and more structurally integrate counseling services into school programs.

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