

The Impact of the Token Economy Technique on the Self-Development Abilities Related to Dental Hygiene of Students with Physical Disabilities at SLB Langensari

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ABSTRACT

This research was conducted at SLB Langensari, Banjar City, during the 2023/2024 academic year. The study employed a quantitative approach with an experimental design, specifically utilizing a One-Group Pretest-Posttest Design. The sampling technique used was a total sample method, encompassing all SMPLB students with physical disabilities. Data collection techniques included oral tests and observation sheets, with pretest and posttest instruments utilized for measurement. The sample comprised students with disabilities who also demonstrated relatively good cognitive abilities. The study followed a systematic data collection process involving an initial test (pretest), an intervention (treatment), and a final test (posttest). Data analysis was performed using parametric statistical methods, specifically the Paired Sample Test (t-test), at a significance level of $\alpha = 0.05$. The decision-making criterion for hypothesis testing was based on the Asymp Sig. (2-tailed) value, which was 0.045. As this value is smaller than the significance level of 0.05, the alternative hypothesis (H1) was accepted.

Keywords: Token Economy Technique, Self-Development Abilities, Dental Hygiene, Physical Disabilities

INTRODUCTION

Children with physical disabilities fall within the broader category of special needs, characterized by abnormalities in their limbs or disorders stemming from central nervous system dysfunction (Septiaji, 2018). The term "physical disabilities" referring to the body, thus representing a condition of bodily imperfection. Such disabilities adversely affect various bodily functions, including mobility and dexterity, impeding the ability to engage fully in educational activities. Consequently, children with physical disabilities require specialized educational services tailored to their individual capabilities.

One significant challenge faced by students with physical disabilities is their limited ability to perform daily living activities, commonly referred to as Activities of Daily Living (ADL). Enhancing these skills necessitates the development of self-development programs, movement training, and relevant curricular content (Dewi, 2016).

Observations conducted on November 6, 2023, at SLB Langensari, Banjar City, indicated that students categorized with mild physical disabilities exhibited a range of challenges. Specifically, they demonstrated low competence in daily living activities, including personal hygiene and self-care. Routine dental check-ups at the school revealed notable issues such as halitosis, dental caries, and food residues lodged between teeth,

largely attributed to a lack of attention to oral hygiene. An interview with a class teacher highlighted a concerning lack of awareness among students regarding oral health maintenance, evidenced by their reluctance to brush their teeth and suboptimal brushing frequency.

To address these challenges, self-development programs aimed at enhancing dental care behaviors can be implemented using various methods and strategies, notably the token economy technique. This approach has been successfully applied to modify behaviors across diverse contexts and populations (Martin & Pear, 2015). The behavioral framework underlying this technique emphasizes the significance of environmental factors in shaping behavior, focusing on the elimination of undesirable behaviors while promoting desired ones through the provision of tokens symbolic rewards for positive actions (Miltenberger, 2008).

In the context of the identified dental hygiene issues namely bad breath, cavities, and food residue students at SLB Langensari exhibit a lack of awareness regarding oral health maintenance. It is hypothesized that the token economy technique aligns well with the challenges these students face concerning their independence in dental care.

The self-development program for dental care encompasses instructional materials designed to enhance awareness and skills in oral hygiene. This program employs direct demonstrations of proper practices, supplemented by visual aids such as pictures and miniature models relevant to the topic. The integration of the token economy technique involves providing positive reinforcement to encourage desired behaviors, utilizing tokens as rewards for completing specified tasks, such as proper tooth brushing at designated times.

Tokens may take the form of stickers, points, or special cards, which can be redeemed for desirable rewards upon accumulation. These rewards might include additional playtime, participation in special activities, or small valued items. Regular feedback and assessments are critical for fostering motivation and consistency, highlighting the achievements represented by accumulated tokens and positive outcomes in dental care practices.

METHOD

The research design employed in this study utilizes an experimental approach grounded in quantitative methodology to rigorously test the specified hypothesis. Specifically, the study adopts a Pre-Experimental Design, characterized by the "one-group, pretest-posttest design." This research framework involves administering a pretest prior to the intervention and a posttest subsequent to the treatment.

The primary objective of this experimental design is to assess the impact of designated independent variables (i.e., treatments) on dependent variables (i.e., outcomes) (Sugiyono, 2019). By implementing this design, the research facilitates an accurate evaluation of treatment effects, as it allows for a direct comparison of results obtained before and after the intervention. This systematic approach enhances the reliability of the findings, providing insights into the effectiveness of the implemented strategies in achieving the desired outcomes.

RESULT

Pre-Test

The pre-test administered in this study is designed to assess students' understanding of dental care prior to the intervention. The data collected from this phase consist of

performance test results, reflecting the students' initial competencies in dental hygiene practices. During the pre-test, students engage in a performance assessment related to dental care, performing tasks independently while receiving support from the researchers as needed. This approach allows for a comprehensive evaluation of each student's baseline abilities, which serves as a critical reference point for measuring subsequent improvements following the treatment.

Table 1. Pre-test

Sample	Mark
S	56
M	63
N	78
I	84

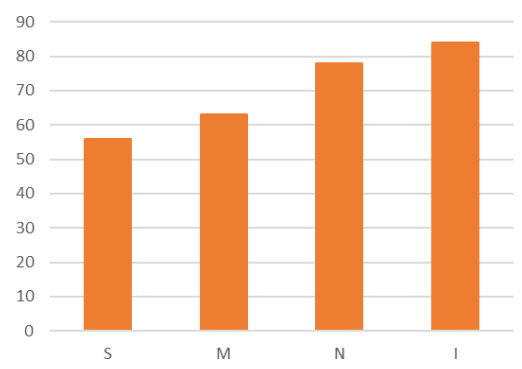


Figure 1. Pre-test

Based on Figure 1, the pre-test results indicate that the highest score achieved by a student was 84, while the lowest score recorded was 56. The total number of students participating in the assessment was four, yielding a cumulative pre-test score of 281.

To elucidate the effectiveness of the token economy intervention, the researcher has compiled and presents the results of each phase of implementation. The data collected during the observational assessments are as follows:

a. Preparation

The planning stage for the token economy was conducted on Wednesday, May 22, 2024. During the preparatory phase, the researchers undertook several critical tasks to facilitate the effective implementation of the token economy. These tasks included identifying specific behavioral targets, establishing a system of rewards, determining the behavioral costs, and setting the prices for the rewards.

To create a comprehensive list of target behaviors, the researchers conducted interviews with the school principal and teachers on May 17, 2024. This qualitative approach aimed to gather insights into the specific behaviors related to dental hygiene that would serve as the foundation for the targeted behaviors within the token economy program. This information is essential for ensuring that the program is tailored to the needs of the students and effectively promotes their dental care practices.

After establishing the list of targeted behaviors, the researcher proceeded to determine the prizes to be awarded to the children as reinforcement for their dental care behaviors. These prizes are exchangeable for tokens, specifically star stickers. The selection of prizes was guided by the researchers' interviews with students regarding their preferences, revealing a desire for rewards such as stickers, snacks, stationery, and other items.

The pricing of behaviors was determined by the researchers, who established a system whereby students would receive chips in the form of star stickers for demonstrating the targeted behaviors. Each instance of the desired behavior would be rewarded with one star sticker. To enhance understanding of the reward system, the researcher created a star chart. This chart visually represented each targeted behavior alongside its corresponding star image and was prominently displayed on the wall for all students to observe their progress in accumulating stars.

In this system, students can earn a maximum of 24 star stickers in a single day. For every five star stickers collected, students receive one reward sticker. The exchange of collected star stickers for prizes occurs according to a predetermined schedule, specifically every three days. In this study, the exchange events were conducted on May 24 and May 29, 2024. The available prizes included stickers, snacks, and character pens. Character pens are awarded for students accumulating between 15 and 24 star stickers, while those who collect between 10 and 14 star stickers are eligible for sticker rewards only.

b. Implementation

The implementation stage of the token economy occurred from Wednesday, May 22, 2024, to Wednesday, May 29, 2024. This phase involved several key activities, including the establishment of contracts, the documentation of children's behaviors, the distribution of tokens, and the facilitation of token exchanges.

During the implementation of the token economy, researchers meticulously observed and recorded the students' dental care behaviors. This documentation process was conducted using an observation sheet, where a score of 1 was assigned to instances of observed dental care behavior, while a score of 0 was designated for behaviors that did not manifest. The following section presents a summary of the recorded behaviors of the students.

Table 2. Table of Notes on Student Dental Care Behavior During Treatment

Initials	Score					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
S	5	5	7	6	8	5
N	4	5	5	7	6	5
M	7	6	7	6	6	7
I	7	6	7	8	8	7

c. Evaluation

Following the implementation phase of the token economy, the researcher proceeded to the evaluation stage, which took place on Thursday, May 30, 2024. During this stage, the researcher assessed various factors that warranted modification, either through the addition or removal of specific reinforcements or behavioral targets previously established.

The evaluation involved a critical analysis of the overall effectiveness of the token economy's implementation, with particular emphasis on the extent to which behavioral changes among students were achieved. The researcher provided an informed opinion regarding the smoothness of the token economy's execution, drawing conclusions based on the observed changes in student behavior throughout the intervention period.

Post-Test

Following the treatment, the research subjects underwent a final assessment, referred to as the post-test, which was conducted on Friday, May 31, 2024. The primary objective of the posttest in this study was to evaluate the enhancement in students' understanding of dental care subsequent to the implementation of the token economy technique.

During the administration of the post-test, the environment was notably more conducive compared to the pre-test phase. Students exhibited a greater willingness to adhere to instructions and demonstrated attentiveness to the researcher's guidance. They were able to complete the performance test independently, albeit with the researcher's support.

Data from the post-test were derived from the students' scores on the provided questions. To assess the development of the sample, the same questions used in the pretest were administered, allowing for a comparison of students' progress and an evaluation of their comprehension of the instructional material presented. The results of the post-test are summarized in the following table:

Table 3. Post-test

Sample	Mark
I	100
M	91
N	84
S	68



Figure 2. Pre-test and Post-test score

In this study, hypothesis testing was conducted utilizing the paired sample t-test. This statistical method was employed to determine whether there was a significant difference in the mean scores of the sample group that received treatment through the token economy

technique. The paired sample t-test facilitates a comparison between the pretest and posttest scores to ascertain whether an improvement occurred within the sample group.

The decision-making process for hypothesis testing using the paired sample t-test is based on the significance value (sig) obtained from the results generated by SPSS version 26 for Windows, as outlined by Santoso (2014):

- a. Null Hypothesis (H_0): Rejected, and the Alternative Hypothesis (H_1) accepted if the sig value (2-tailed) is less than 0.05.
- b. Null Hypothesis (H_0): Accepted, and the Alternative Hypothesis (H_1) rejected if the sig value (2-tailed) is greater than 0.05.

Table 4. Paired Samples Statistics Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	70,25	4	12,971	6,486
	Post test	85,75	4	13,525	6,762

Table 5. Paired Samples Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test - Post Test	-15,500	9,292	4,646	-30,285	-,715	-3,336	3	,045

In this paired sample statistic test, the results summarize the descriptive statistics for both the pretest and posttest data. The average score for the pretest was 70.25, while the average score for the posttest increased to 85.75, based on a sample size (N) of four participants.

The paired samples test further elucidates the existence of any differences between the pretest and posttest scores. According to the decision-making criteria established for the paired samples t-test:

If the Sig value (2-tailed) is less than 0.05, there is a significant difference in the results between the pretest and posttest data.

Conversely, if the Sig value (2-tailed) is greater than 0.05, there is no significant difference in the treatment outcomes between the pretest and posttest data.

In this analysis, the obtained Sig value (2-tailed) was 0.045. Since 0.045 is less than 0.05, it can be concluded that there is a statistically significant difference between the pretest and posttest scores. This indicates that the application of the token economy technique effectively enhanced participants' self-help knowledge regarding dental care, as evidenced by the improvement in scores from the pretest to the posttest.

CONCLUSION

Based on the research findings presented above, it can be concluded that the implementation of token economy techniques significantly influences the self-help abilities related to dental care among physically disabled students at Langensari State Special School. The statistical analysis demonstrates a notable improvement in participants' knowledge and behaviors regarding dental hygiene following the intervention, highlighting the effectiveness of the token economy approach as a viable strategy for enhancing self-care practices in this population. These results underscore the importance of structured reinforcement methods in promoting essential life skills among students with disabilities, thereby contributing to their overall well-being and independence.

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