

## Stimulus Fading Techniques and Token Economic Techniques to Increase Talk Ability in Selective Mutism Students

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**Abstract:** Children with selective mutism generally have difficulty in social communication and communication in class which ultimately affects their academic grades. Therefore, there needs to be an effort to help students who experience selective mutism, especially at school. The purpose of this study was to determine the effectiveness of using stimulus fading techniques and economic tokens in improving speaking skills in students with selective mutism. This study used a single-subject design with the subject of a 7-year-old male student who is in grade 1 of elementary school and has selective mutism. The results of the intervention showed an increase in the number of subjects' speaking ability wherein the baseline condition 1 subject spoke 3 times and at baseline 2 subjects managed to speak 21 times. Based on these results, it can be concluded that the use of stimulus fading techniques and economic tokens can improve the subject's speaking ability, especially in answering the teacher's questions and imitating the teacher's instructions.

**Keywords:** Selective mutism; Stimulus fading; Token economy technique

### Introduction

The success of students in learning certainly cannot be separated from the process they go through while at school, both academically and psychologically. The process is not only related to student grades in each subject but also how students interact with teachers and their friends. The lack of interaction skills can certainly have an impact on the student learning process at school (Raja & Nagasubramani, 2018). When faced with difficulties both when doing assignments and doing other activities at school, students certainly need to convey it to teachers and friends so they can get help.

However, if students fail to convey what they need, it can certainly be a problem for students and have an impact on their learning outcomes at school (Habibi et al., 2019). A study found that there is a positive and significant relationship between effective communication on student learning outcomes (Rusilowati & Wahyudi, 2020). Thus, if students lack the communication skills to interact with teachers and their friends at school, it can also negatively affect their learning outcomes.

In the DSM-IV TR (APA, 2000) it is explained that if a child continuously fails to speak in specific social situations when expected to speak (eg at school), but consistently speaking in other social situations (eg at home with family members) then it can be called selective mutism (selective mute). This condition generally makes it difficult for parents to know that their child has difficulty interacting at school because when at home the child can interact smoothly with his family members (Crowell et al., 2019). Children with selective mutism generally have difficulty in social communication and communication in class which ultimately affects their academic grades (Driessen et al., 2020)

Children with selective mutism can be identified through several criteria. The diagnostic criteria for selective mutism according to the DSM-IV TR (APA, 2000) are: (1) Consistently fails to speak in certain social situations (where it is expected to speak, for example at school), but can speak in other social situations, (2) Disturbance that affects academic achievement and social communication, (3) The duration of the disturbance is at least 1 month (excluding the

first month of school entry), (4) Speech failure is not due to a lack of knowledge or understanding of the language used in social situations, (5) The disturbance is not classified as a communication disorder (eg, stuttering) and does not occur because of a pervasive developmental disorder, schizophrenia, or other psychotic disorder.

Selective mutism is important to treat because it can cause unfavourable effects on children in later life. A follow-up study of 41 youth who had been diagnosed with selective mutism as a child found that as many as 60% of them continued to struggle with problems with self-confidence, independence, achievement, and social communication (Schwenck et al., 2021). Teachers who educate children with selective mutism will usually have difficulty measuring the development of children. Children will find it difficult to participate in tasks that use oral as a determinant of understanding, such as discussions and presentations (Nyborg et al., 2022).

The selective mutism condition was experienced by the subject, who was a male student with the initials M with the age of 7 years 5 months who was sitting in the 1st grade of elementary school where he rarely spoke while at school, including his homeroom teacher. The teacher complained that the subject was often left behind in doing the exercises and did not want to talk. Efforts have been made by the teacher to help the subject, namely by accompanying the subject individually and positioning himself closer to the subject's seat so that he can hear the subject's voice. However, these efforts did not show any change. Based on this, another effort is needed to help students and teachers interact.

One way that can be done is to modify behaviour using stimulus fading techniques and provide reinforcement in the form of token economy techniques (Alessandra & R-Suradijono, 2020). A study using behavioural techniques in the form of stimulus fading and reinforcement. This technique has succeeded in improving children's speaking skills with selective mutism in communicating, especially verbally at school (Fischer et al., 2019). Stimulus fading is done by introducing new people to conditions that make children want to talk (Nelson, 2019). The difference with the intervention carried out by the practitioner is in the number of sessions where the practitioner provides a fading stimulus only in school situations.

The next technique is to reinforce strengthen and motivate the expected behaviour. The reinforcement used is in the form of a token economy technique (Van der Oord & Tripp, 2020). The token economy technique is a behavioural program in which individuals can obtain tokens/signs for various desired behaviours and can exchange these markers to obtain supporting reinforcers called (Aziz & Yasin, 2018). Tokens (markers) are conditioned reinforcements that can be accumulated and exchanged to get supporting boosters (Martin & Pear, 2015). Based on the explanation above, this study aims to determine whether the use of stimulus fading techniques and the provision of economic tokens can improve speaking skills in children who experience selective mutism.

## Methods

This study uses an experimental approach with a single subject design type. The subject in this study was a grade 1 elementary school student who experienced selective mutism. The research design uses the A-B-A formula where A1 is the behavioural baseline before the intervention, B is the behaviour during the intervention, and A2 is the behavioural baseline after the intervention.

The data collection method used was observation, interviews, and psychological tests. Observations in this assessment use non-participant observation because the researcher does not take part in the observer's life. Furthermore, interviews were conducted using a semi-structured technique. Semi-structured interview is an interview technique made using a list of questions, but not in the form of permanent (binding) sentences. Interviews were conducted

with significant others, namely homeroom teachers, parents, and friends of the subject. Interviews were not conducted directly on the subject because the characteristics of the subject were still difficult to talk to because they had selective mutism. To complete the results of observations and interviews, psychological tests were also given to the subject. The psychological test given is an intelligence test. The intelligence test used in data collection is the WISC (Wechsler Intelligence Scale for Children) test. In addition to strengthening the results of observations and interviews, the provision of intelligence tests using the WISC test aims to determine the intelligence capacity of the subject so that it can help answer complaints about the subject's delay in doing assignments, whether due to limited intelligence or due to other factors (selective mutism).

After obtaining data from observations, interviews, and psychological tests, the next method is to provide intervention. The intervention provided is in the form of behaviour modification with stimulus fading techniques and the provision of reinforcement in the form of economic tokens. Stimulus fading is a technique used by introducing new people to conditions that make children want to talk, wherein in each situation the number of people (friends) who participate in the intervention process gradually increases. Meanwhile, economic tokens are conditioned reinforcements that can be accumulated and exchanged for supporting reinforcement.

The purpose of giving this intervention is to improve the speaking ability of subject M while at school. The analytical technique used in this study uses quantitative and qualitative analysis. Quantitative data was obtained from the calculation of the number of behaviours at each baseline, while qualitative data was obtained from observations and interviews.

## **Results and Discussion**

Based on the results of observations and interviews conducted with the subject and significant others, namely the subject's teacher and parents, the results showed that the mutism condition experienced by the subject had appeared since the subject was in kindergarten. The subject is known as a very shy child, but no efforts have been made by the kindergarten and parents have not realized the impact of the subject's behaviour. According to the subject's parents, when at home the subject spoke fluently without fear and embarrassment, but if he was outside the house such as attending an event the subject became quiet and his parents always helped answer when someone else greeted the subject.

This pattern causes the subject to be untrained in communicating with other people outside of their family members. The cause of children experiencing selective mutism is still being debated by experts. Different theories explain the causes of selective mutism differently. Adherents of the school of psychodynamics view selective mutism as an unresolved internal conflict. Adherents of the behavioural school view selective mutism as an inappropriate pattern of reinforcement. Adherents of family systems theory consider selective mutism due to maladaptive family dynamics. In addition, some think that selective mutism is a descendant of parents who tend to be anxious (Milic et al., 2020)

The subject has been in more than 1 semester in grade 1, but when the teaching and learning process took place, the subject seemed to listen to the teacher's explanation but never gave a verbal response when the teacher tried to ask questions. When asked personally the subject also only responded with non-verbal language such as nodding and shaking his head or making a low voice. The subject's friends understood the condition of the quiet subject, so his friends chose not to invite him to communicate. This strengthens the subject's mutism behaviour where the subject's opportunity is reduced to try to communicate verbally.

Children who have selective mutism usually have difficulty in social relationships. Research shows that if a child with selective mutism is not treated properly, there is a possibility of adverse effects for the child later in life. Some of them will experience difficulties in academic, emotional and social fields such as developing anxiety, children becoming depressed, experiencing anxiety disorders, low self-confidence and self-esteem, withdrawing, refusing to go to school, poor academic skills, and underachievement (Klein et al., 2019).

The teacher suspects that the subject has problems in the academic aspect because the subject is often left behind when doing assignments. However, the teacher had difficulty knowing the obstacles experienced by the subject because when asked the subject never answered. One of the impacts experienced by selective mutism students as previously described is academic performance, so a test is carried out to reveal the condition of the subject's intelligence. The results of the examination that had been carried out on the subject obtained an IQ test result of 99 (Weschler scale). This figure means that the subject has intelligence abilities that are classified as average among children his age. Overall the ability of the subject in the cognitive aspect did not experience obstacles. The results of the intelligence test show that the subject does not have problems related to intellectual capacity, so it can be concluded that the behaviour of the subject who is more silent in school and is often left behind during the learning process is not caused by learning ability but because of another condition, namely selective mutism. The diagnosis refers to the condition of the child who has selective mutism based on the DSM-IV TR (APA, 2000).

To see changes in the results of the given intervention, researchers need to know the conditions before and after the intervention through behavioural baseline measurements. Based on the results of observations made to determine the baseline of the subject's behaviour related to mutism behaviour, the results obtained are as described in the graph below. The results of observations obtained before the intervention process, during the intervention process, and after the intervention is completed can be seen in Figure 1.

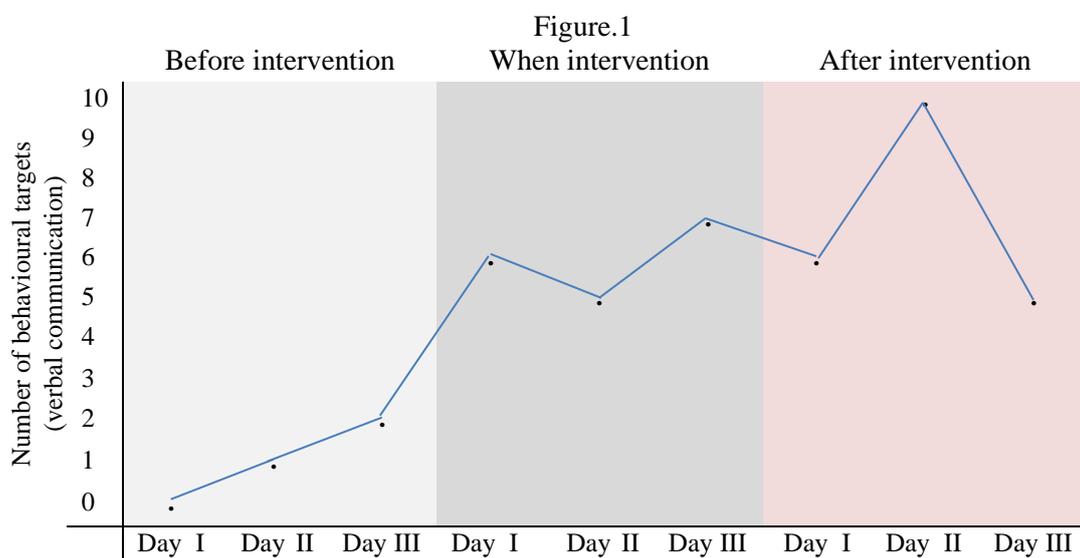
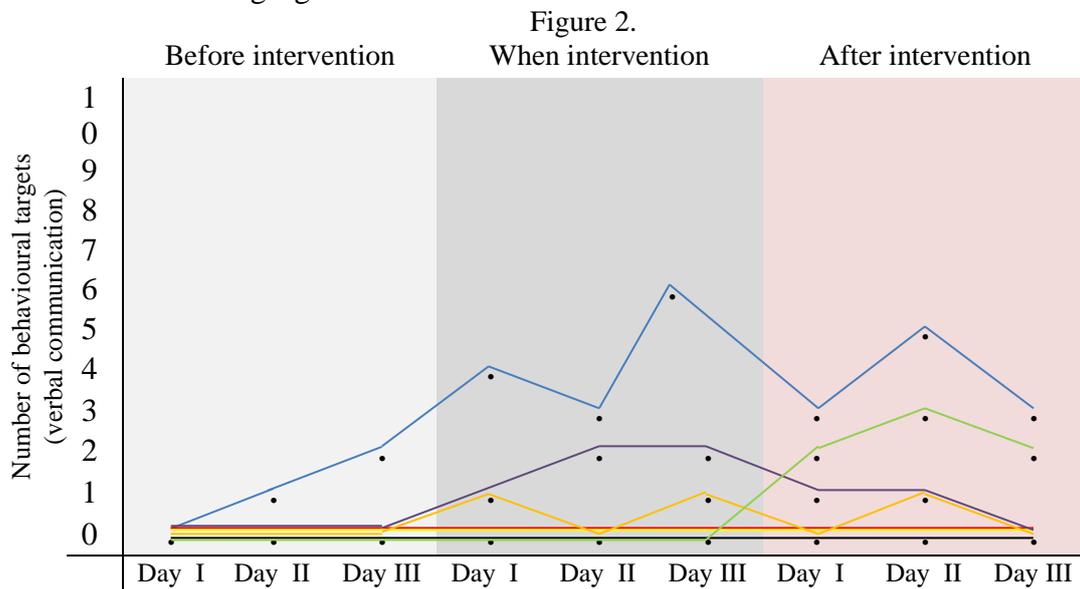


Figure 1. shows that there are changes between conditions before the intervention (baseline 1), during the intervention, and after the intervention (baseline 2). These changes indicate an increase or success of the intervention in improving the subject's verbal communication skills where at baseline 1 the subject's verbal communication did not appear on day I, 1 time on day II, and 2 times on day III which totalled 3 times. In contrast to the conditions when the intervention was given where the subject's verbal communication

appeared 6 times on the first day, on the second day it appeared 5 times, and on the third day, it appeared 7 times, a total of 18 times. On baseline 2, the subject's verbal communication appeared 6 times on the day I, then on day II it appeared 10 times, and on day III it appeared 5 times for a total of 21 times. Meanwhile, the most common forms of verbal communication are described in the following figure 2.



**Information:**

- (Red) Call
- (Yellow) Greet
- (Brown) Talking
- (Blue) Answer
- (Orange) Comment
- (Black) Ask
- (Green) Imitate

Figure 2. shows that the object experienced an increase in his speaking ability at school. Based on the graph, it can be seen that the target behaviour of the subject that has increased the most compared to the others is his ability to answer questions. At baseline, 1 subject was able to answer questions 3 times out of a total of 3 days of observation. At the time of the intervention, the subject managed to answer the question 13 times out of a total of 3 days of observation. and in the baseline condition, 3 subjects could answer 11 times out of a total of 3 days of observation. His ability to imitate the teacher's instructions, to talk and comment has also increased, although not as much as his ability to answer questions where there is a stimulus that triggers it.

Meanwhile, the ability to call others, greet, and ask questions has not shown any improvement, so it is necessary to pay attention to those closest to the client to practice these abilities. Based on the results of the analysis after the intervention, it can be seen that the increase in the number is influenced by the number of opportunities and stimuli that allow the subject to speak at school, especially in the classroom when the subject is expected to speak. The more opportunities and stimuli are given to the subject, the more verbal communication the subject will have in class. Such as the teacher's efforts to provide a stimulus in the form of simple questions or ask students to repeat their words.

Subjects seem to be easier to respond to the given stimulus than to start talking of their own accord. This can also be done by parents when inviting the subject to an event, where the subject is allowed to respond to other people's questions independently. The subject's friends also became more active in inviting the subject to interact, especially friends who took part in being in the room in the process of giving the intervention. This helps the subject to increase self-confidence and a sense of comfort in the subject when trying to speak.

These results indicate that the provision of fading stimulus techniques and economic tokens can improve speaking skills in children with selective mutism. These results are supported by other studies which also found that the fading stimulus technique can reduce the symptoms of selective mutism in children (Ridha, 2019). The technique gradually places the child in a situation where he feels comfortable talking by gradually increasing the number of people. The term selective mutism itself is still considered foreign to teachers at the school, so this research can help teachers find out the condition of children who have selective mutism and the efforts that can be made to assist students who experience selective mutism.

### Conclusions and Suggestions

Based on the results of the intervention, it can be said that intervention with a behavioural approach using stimulus fading techniques and providing reinforcement in the form of a token economy can improve speaking skills in subjects at school. Based on the results of interventions that have been carried out on the subject, several things can be done to maintain the new behaviour that has been carried out by the subject. By increasing the protective factors and minimizing the risk factors, the new behaviour that the client is successful in can last longer without any assistance from the counsellor. For further researchers, it is recommended to conduct research by increasing the duration of time in the baseline phase so that the results are more optimal.

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