

Effects of Behaviour Modification Techniques on Disruptive Classroom Communication Behaviour among Secondary School Students in Zaria Metropolis of Kaduna State, Nigeria

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Abstract

The study focused on Behaviour Modification Techniques and placed emphasis on the effects of two of such techniques, Token Economy and Time-out Counselling Techniques, on Disruptive Classroom Communication Behaviour among Secondary School Students in Zaria Metropolis. A quasi-experimental Pre-test, Post-test-Control group design was employed for this study. The purposive sampling technique was used to select three private Secondary Schools in Zaria, Kaduna State of Nigeria. Samples were selected based on the scoring of the pre-test instrument, which guided the selection of students who exhibited disruptive classroom communication behaviour. ANCOVA was used in testing the hypothesis. The result revealed that both behavioural techniques are effective in the reduction of Disruptive Classroom Communication Behaviour. Hence the hypothesis was rejected. It was recommended amongst others that Counselling Psychologists should use both counselling techniques, collectively or separately, in managing Disruptive Classroom Communication Behaviour among Secondary School Students.

Keywords: Behaviour, modification, Token, economy, Time out, disruptive, behaviour.

Introduction

Development of healthy behaviour in every aspect of life is not only for the good of an individual but for the entire family and the Society at large. Behaviour is part of the make-up of an individual, hence every behaviour to a great extent should conform to the norms of the Society. Behaviour is part of identity. As part of development, one grows in what is visible, so ought one to develop emotionally and in all aspects that may not be easily noticed. Most times, individuals actually developed healthy and acceptable behaviour that cuts across the divide, but in the course of growth, due to stress, pressure and other factors of life, one tends to discard or abandon healthy and acceptable behaviour in an attempt to cope with life's struggle and demands.

Behaviour is one's thoughts manifested in the way one acts or behave. Both desired and undesired behaviour are learned.

Behaviour modification techniques come in if one wants to acquire desired behaviour or wants to discard undesired behaviour. The concept of behaviour modification is an intervention based on the principles of conditioning with the aim of changing undesired behaviour and inculcating a desired behaviour. An individual that misbehaves, whether in workplace, home or school, may cause hindrance to the smooth running of daily activities of such a place. Hence an individual's misbehaviour in school or workplace is both detrimental to the person who exhibited such unwanted behaviour and to the workplace or school because progress would be slowed down.

Behaviour modification is viewed by Teasley and Airth (2018) as techniques used to increase or decrease a particular type of behaviour or reaction. Notably, behaviour modification techniques have been in used in the traditional society; even in the contemporary time people make use of these techniques oblivious of the concept. Some of the behaviours put up in the class by students during class instruction speak volume. It may be a way of communicating boredom, lack of interest, dislike for the subject or teacher, restlessness on the part of the student or an attempt to disrupt the smooth running of class activities. The teaching and learning process is enhanced when both the teacher(s) and learners exhibit behaviour that can stimulate assimilation of lesson taught and that can assist the teachers to discharge their teaching duties uninterrupted.

Consequently, the exhibitions of Disruptive Classroom Communication Behaviour (DCCB) by students is met with several and different forms of punishments by the teachers and sometimes the school administrators. These forms of punishments given to students over the years seem not to have yielded much significant effect and the continuous exhibition of Disruptive Classroom Communication Behaviour by students despite all these forms of punishments, also formed a major source of stress for the teachers.

Techniques are methods or procedures used in a counselling sessions for the elimination of undesired behaviour or acquiring/enhancing a desired behaviour. Techniques are used to accomplish the task of behaviour modification. Techniques are essential and vital instruments that must be adequately utilized among professionals in counselling profession in particular. Counselling Psychologists are well equipped with various techniques, as tools for effectiveness in the treatment of unwanted or desired behaviour. Counselling Psychologists keep enriching their knowledge of emerging techniques, as different techniques apply to different behavioural interventions. Wrong use of counselling techniques may result to inconclusive or ineffective counselling

sessions. Counselling Psychologists are expected to arm and be versed with counselling theories and their requisites counselling techniques to function effectively. There are numerous behaviour modification techniques that can be applied to manage or eradicate unwanted behaviour or imbibe a desired behaviour. Attempt is made below to make a list of some of the behaviour modification techniques and also to discuss a few of such techniques:

Positive reinforcement - Positive reinforcement is one of the widely used behaviour modification techniques because of its efficacy over time and its applicability to the treatment of most behavioural challenges. Positive reinforcement is pairing a positive stimulus to a behaviour. McCathy (2010) stated that positive reinforcement can either be a reward for good behaviour or simply positive communication in the form of praise or encouragement. This technique involves using a reward system (reward as in tangible or praise) to indicate approval and encourage continuity at the exhibition of such desired behaviour. Take a case of a teenager who hardly lays his bed and always leaves his wardrobe unkempt. His mother then took time to explain to him the need for neatness and orderliness. After a while, the mother entered his room and saw that his bed was laid. At such, the mother praised him – Wow this is good! - for laying his bed. This is to spur him to continue with this behaviour of keeping his wardrobe tidy. Positive reinforcement helps in acquiring and maintaining the newly acquired behaviour. However, the use of reward can be abused if not used properly done, because the student/child may refuse to exhibit the new acquired behaviour if he or she sensed reward is not in sight or attached.

Punishment - It is a behaviour modification technique used with the intention to eliminate or reduce undesired behaviour through creating awareness of the consequences of such behaviour which are not pleasant. Punishment means disciplining the child, which involves physical punishment such as flogging, doing activities that may be stressful such as kneeling and hands lifted up, not eating at the right time, cutting grass, flogging or spanking. Sometimes, this technique can be abused by the teacher or educator and may cause low self-esteem for the students on whom this technique is applied. Dad (2010) affirmed that abuse of punishment can lead to resentment, harden of heart and aggression.

Time out - Vaughn and Bos (2009) viewed time-out as a procedure in which a child is placed in different, less-rewarding situation or setting whenever he or she engages in undesirable or inappropriate behaviours. The main principle of time-out procedure is to ensure that the individual in time-out is not able to receive any reinforcement for a particular period of time. Anyebe (2016) defined time-out technique as the removal of an erring student from desiring situation or activity for a brief period of time because the student has behaved in an unacceptable way. Research has shown that, time-out

procedures have been effective in reducing aggression, self-injury, autism and disruptive behaviour among preschoolers, young adults with learning and developmental delays (Martins & Pear, 2016). Anyebe (2016) in her study examined the effect of modelling and time-out techniques on disruptive classroom behaviour among senior secondary school students in Otukpo area of Benue State of Nigeria and discovered that age and gender are not significant factors in the effectiveness of time-out at reducing disruptive behaviour of senior secondary school students.

Ya'u (2017) investigated the effectiveness of response cost and time-out in decreasing lateness among senior secondary school in Jigawa state of Nigeria where the result of his study showed reduced lateness to school. Time-out should not be seen as a punishment but a non-aggressive and non-offensive way of correcting inappropriate behaviour. Ogunwole, Bello and Zakariyah (2017) in the same vein conducted a study to assess the effect of time-out counselling technique on disruptive classroom communication behaviour among secondary school students and the result revealed reduction in the exhibition of such disruptive behaviour that interrupts class instruction. Time-outs must be based on the premise that kids should be raised in environments that are rich with "Time-in": loving, positive interactions like reading a story book, telling stories, laughing with children or students, playing games and so on. Alberto, Heflin and Andrews (2002) stated time-out as being effective in reducing behaviour such as tantrums, inappropriate social behaviours, yelling, aggression, time spent out-of-seat and inappropriate verbalization.

Negative reinforcement - Negative reinforcement is the reverse of positive reinforcement. Ashley (2017) described negative reinforcement as a method that can be used to help teach specific behaviours. With negative reinforcement, Ashley (2017) further explained that something unpleasant or uncomfortable is taken away in response stimulus. In a classroom scenario where a class instruction is ongoing and a student decided to be playing with his pen instead of listening to the teacher's instruction, the teacher on citing him then can take the pen away from the student; this is an example of negative reinforcement. Negative reinforcement is the act of removing something that may hinder effectiveness or productivity.

Systematic Desensitization - Systematic desensitization is appropriate in the treatment of fears and anxiety. It was developed by Joseph Wolpe (a South African Psychologist) in the 60s and based on the principle of classical conditioning (McLeod, 2015). The essence of this technique is to train client or student on a deep muscle relaxation technique and breathing exercise plus imagining sources of fears. The student is taught to create fear hierarchy starting from the most feared to the least feared stimuli. The student is helped to deal with these fears based on least severe to most severe situation. There is a continuous practice of the process until the student

started feeling comfortable with evidence that there is less fear on the previously dreaded situation.

Response cost – Response cost is the removal of specified amount of reinforcement contingent on the occurrence of problem; this can be in terms of fine, levy etc (Snowman, McCrown & Biehler, 2009; McGoey & DuPaul, 2000). Scholars have suggested that response cost technique can be used to treat behaviour such as class disturbance, overeating. Response cost works in a way that the student loses a reward or whatever he or she had initially gained for behaving in inappropriate way; the student loses such reward at the point of behaving in an inappropriate way. In other words, displaying undesired behaviour cost him or her the reward of initially behaving in a desired way. Response cost is different from time-out and extinction.

Flooding - Flooding is a behavioural approach used in the elimination of unwanted fears or phobias-related issues. Gay (2009) explained that flooding involves forced and prolonged exposure to that particular stimulus that can provoke the original traumatic experience. The client/student is exposed to his or her fear by the Counselling Psychologist. In the course of interaction, the client is helped to identify the most fearful situation, imagine such fearful scene and the counselling psychologist helps the client to visualize the fear in stages (most fearful to least fearful). Scenarios are created from source of fear for the client to face his fear. Flooding is also referred to as in vivo exposure therapy. Flooding is based on the principles of Pavlov's classical conditioning. There are different forms of exposure - imaginal exposure, virtual reality exposure and in vivo. Flooding exposes the client to actual fear. For instance, a client who has phobia for height would be taken to real height and made to face his fear. As good as flooding is, it can cause more harm if not well administered and managed.

Chaining - Chaining is also one of the behaviour modification techniques. Chaining is effective in learning new behaviour or new task (Alberto & Troutman, 2012). With Chaining generally, tasks or behaviour to work upon must first be broken into workable form or smaller forms from which the student would be taught the skills attached to each of the steps to achieving the desired task or behaviour. Steps are taken in sequential order. Client or student cannot proceed to the next stage until there is evidence of mastery of previous step. Mastery of step is known when the student was able to demonstrate task without any assistance from an adult or the Psychologist. There is reinforcement for the mastery of one step before proceeding to the next step. There are two types of chaining, namely, forward chaining and backward chaining. Forward chaining enables a student to proceed from the first part of training to the last part. Clients/students are made to understand the motive(s) for each of the steps. This understanding may help the clients to be eager and interested to learn. Steps are taken in sequential order. Backward Chaining is the reversed order of forward chaining. As

the name indicates, the student is taught the desired behaviour from the last step identified to the first step (workable smaller parts).

Token Economy - Token economy counselling technique is a behaviour modification technique that uses tangible reinforcers such as prizes, money or gift as systematic application of a reinforcement schedule. Token economy is a form of classroom management in which students receive tokens at the exhibition of desired behaviour; these tokens may then be exchanged for something pleasurable (Elliot, Kratochwill, Cook & Travers, 2000). A Token economy is a system of behaviour modification based on systematic reinforcement of target behaviour. Ogunwole (2016) defined token economy as a counselling intervention technique that involves the use of tokens such as card, points, stickers and the likes to facilitate the target behaviour in classroom. Kazdin (1977) identified two types of token namely: (1) monitorial system and (2) Excelsior system. Ogunwole, Bello and Zakariyah (2017) in their study examined the effect of token economy counselling technique on disruptive classroom communication behaviour among selected secondary school students using twenty-four Junior Secondary II students who exhibited disruptive classroom communication behaviour and discovered that token economy had effect on the reduction of disruptive classroom communication behaviour.

Modelling - Anyebe (2016) defined modelling as the act of showing students an acceptable behaviour with the intention that the students will observe and imitate. Modelling technique aims at developing appropriate behaviour in individual/student through observation/watching someone doing or modelling the desired or appropriate behaviour. Modelling can be used to learn new behaviour or to strengthen newly learnt appropriate behaviour. Scholars have stated that some factors such as the characteristics of the model and the observer and the consequences whether positive or negative determine the success of modelling technique. Live modelling, symbolic, self, and covert have been identified as types of modelling. Teachers are encouraged to adopt the use of modelling as means of interacting with their students to enhance effective teaching and learning process.

Over-corrective technique – This is a behaviour modification technique that engages the student(s) in a corrective repetitive behaviour as a penalty for behaving in inappropriate ways (Roberts, 2019). This technique has the capacity to reduce the effects of punishment and enlightening the student on positive practice of time, place and circumstances to exhibit the desired behaviour. Over correction can be used to treat such behaviours as disruptive and self-injury. This technique can also be useful at the home level where the parents have been trained to so do. Two types of Overcorrection have been highlighted as:

1. Restitutional overcorrection - This is a basic aspect of overcorrection technique which entails a person amending the wrong he or she had done through doing the needful. This technique is applied to rectify the negative consequences of an inappropriate behaviour. The essence of restitutional overcorrection is to restore the situation to its initial state or improve the situation. An instance of a student A, who tears the pages of student B's textbook. A restitutional overcorrection demands a replacement of the textbook to student B by student A.

2. Positive practice overcorrection - The student is taught to exhibit the accepted behaviour by positively practicing such till it becomes part of him or her. A student can be trained using positive practice on hand raise behaviour to indicate the intention to speak during class instruction rather than talking out of turn.

Ogunwole (2016) viewed disruptive classroom communication behaviour as any form of communicable behaviour whether verbal or/and non-verbal, which are frequently exhibited by a student or group of students and which such behaviours are capable of interrupting the teaching-learning process. According to Gerald (2001), disruptive behaviour may indicate a significant level of personal problem or distress on the part of the disrupter. Disruptive classroom communication behaviour is detrimental to the academic community as it interferes with the ability of the teachers to teach effectively and deter other students from benefiting maximally from class instruction. Among the many other consequences of disruptive classroom communication behaviour is that it dissipates teacher's energy and other school resources from the educational mission to that of maintaining class discipline.

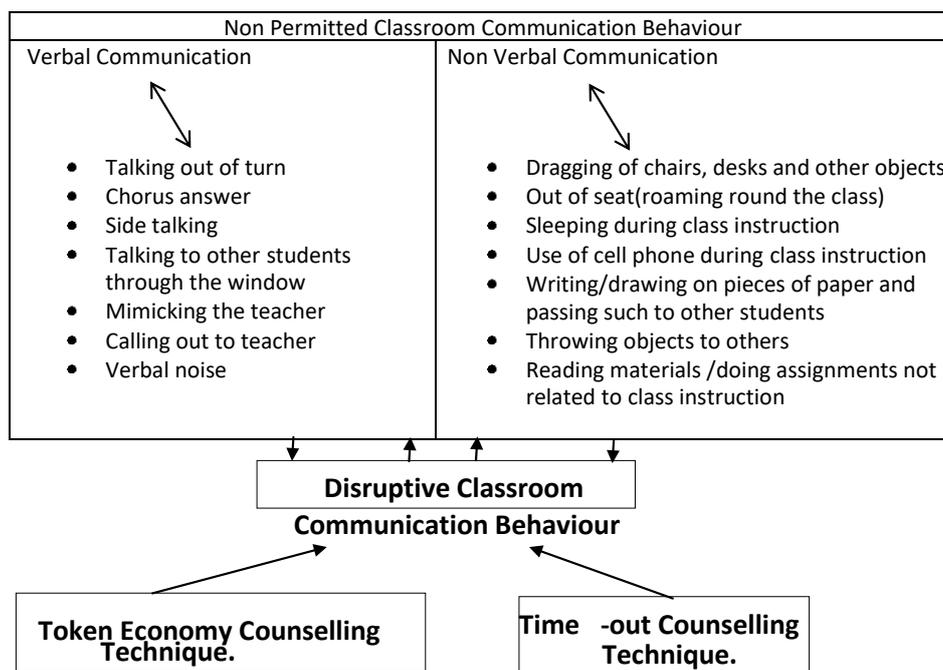


Figure 1: Flow chart showing the disruptive classroom communication treated in this study and the two counselling techniques used for the treatment

This study was anchored on Operant conditioning theory by B. F. Skinner. The purpose of this study is to add to the pool of literature on the relative effects of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students in Zaria Metropolis of Kaduna state of Nigeria. To achieve this purpose, a research question and a hypothesis were formulated to guide the study.

Research Question: What are the relative effects of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students?

Hypothesis

Ho1: There are no significant relative effects of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students.

Methodology

This study adopted a Quasi-experimental design that uses the non-randomized pre-test and post-test control group design. Quasi-experimental design aims to evaluate

interventions but do not use randomization (Kolo, 2003). This research design was also used on the basis that the participants in this research were purposively selected due to the peculiarity of the problem being investigated. The population of this study was two hundred and twenty (220) students, and thirty-six students were purposively selected from three private secondary schools in Zaria Metropolis of Kaduna state. Junior Secondary II students were used. There was no random sampling of subjects because the scores from the pre-test determined the selection of subjects into the treatment groups. There were three groups used for this study, two treatments groups and one control group. Twelve subjects were in each group which totalled thirty-six students who exhibited disruptive classroom communication behaviour based on the scoring of the pre-test instrument. The two treatment groups were token economy counselling technique and time out counselling technique. Both treatment groups and the control group were pre-tested using Disruptive Classroom Communication Behaviour Rating Scale instrument. The two experimental groups received treatments for seven weeks while the control group received normal classroom instructions for same period. After the treatment, Post-test was administered to both the experimental groups and the control group using the same instrument that was administered for the pre-test.

The instrument used for this study was titled “Disruptive Classroom Communication Behaviour Rating Scale” (DCCBRS), and it was adapted from Coulby and Harper (1985) titled Child Behaviour Checklist (CBCL). The scale was delineated on a four point Likert scale, ranging from 1 (Not at all), 2 (just a little), 3 (pretty much) and 4 (very much). The instrument used for this study was trial tested through test-retest pilot study. The test–retest was for a space of two weeks. Junior secondary II students of Demonstration Secondary School, Ahmadu Bello University, Kongo Campus, Zaria were used for the pilot test. Thirty (30) students were given the instrument to respond to. The same instrument was re-administered to the same students after two weeks. The data collected from the pilot study were analysed using Pearson Product Moment Correlation. This gave a reliability coefficient of 0.71. ANCOVA statistical method was used test the hypothesis at 0.05 level of significance.

Presentation of results

Research Question: What are the relative effects of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students?

Table 1 - Mean and standard deviation on the relative effects of Token Economy counselling technique (TECT) and Time-out Counselling Technique (TOCT) on Disruptive Classroom Communication Behaviour DCCB of Secondary School Students

Subject		Pre-test	Post-test	Mean reduction effect
Token Economy	N	12	12	
	Mean	48.83	25.50	23.33
	SD	4.30	2.31	
Time Out	N	12	12	
	Mean	48.91	26.00	22.91
	SD	4.73	2.25	
Control	N	12	12	
	Mean	50.83	50.66	0.17
	SD	7.23	5.17	

Table 1 showed the mean and standard deviation of pre-test and post-test scores of token economy, time-out counselling techniques and control groups respectively. The calculated mean scores were 48.83 ± 4.30 and 25.50 ± 2.31 for TECT group, while TOCT group mean scores showed 48.91 ± 4.73 and 26.00 ± 2.25 and the Control group had 50.83 ± 7.23 and 50.66 ± 5.17 . The post-test mean scores indicated mean reduction by 23.33 and 22.91 on disruptive classroom communication behaviour by students exposed to token economy, time-out counselling techniques treatments and 0.17 for control group respectively. Therefore, the mean disruptive classroom communication behaviour (DCCB) have lower post-test mean scores among the students in token economy counselling technique and time-out counselling technique than those in the control group. The observed effects in the post-test lower mean scores may be due to token economy counselling technique and time-out counselling technique treatments.

Ho1: There is no significant relative effect of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students.

The hypothesis was formulated and tested at 0.05 level of significance using analysis of covariance (ANCOVA). The result of the test from the data collected is presented on table 2.

Table 2: Summary of ANCOVA results on the relative effect of token economy and time-out counselling techniques on DCCB of secondary school students

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9307.958 ^a	5	1861.592	85.566	.000
Intercept	125751.125	1	125751.125	5779.983	.000
Group	2890.083	2	1445.042	66.419	.000
Tests	4309.014	1	4309.014	198.058	.000
group * Tests	2108.861	2	1054.431	48.465	.000
Error	1435.917	66	21.756		
Total	136495.000	72			
Corrected Total	10743.875	71			

a. R Squared = .866 (Adjusted R Squared = .856)

The result of the ANCOVA showed the significant effects of the two techniques on students' disruptive classroom communication behaviour. This is because the calculated p is below 0.05 level of significance and computed F is greater than the 3.0 F-critical value. There is a significant effect of both counselling techniques in the reduction of the exhibition of disruptive classroom communication behaviour among students when exposed to treatments. Therefore, the null hypothesis which stated that there is no significant relative effect of token economy and time-out counselling techniques on disruptive classroom communication behaviour is hereby rejected because both techniques have effect on the reduction of disruptive classroom communication behaviour among students when exposed to the treatments.

Table 3: Post hoc using scheffe test of homogeneous subsets

Test_Scores

Scheffe^{a,b}

Group	N	Subset	
		1	2
Token Economy	12	37.1667	
Time out	12	37.4583	
Control	12		50.7500
Sig.		.977	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square (Error) = 21.756.

a. Uses Harmonic Mean Sample Size = 24.000.

Table 3 was the result of post hoc using Scheffe's test which showed token economy counselling technique and time-out counselling technique in subset 1 with lower mean

scores 37.1667 and 37.4583 respectively with lower mean level of significance while those in the control group were placed in subset 2 with the highest mean scores 50.7500 which showed higher level of significance because they were not exposed to treatment. The two experimental groups in subset 1 were the treatment groups and their result revealed the same mean scores after being exposed to treatment and this indicated that both counselling techniques do not differ in their effects in reducing disruptive classroom communication behaviour among JS2 students exposed to the treatments.

Discussion of findings

The hypothesis that there is no significant relative effect of token economy and time-out counselling techniques on disruptive classroom communication behaviour of secondary school students was rejected because the p-value was found to be lower than the 0.5 alpha level of significance. The findings from the ANCOVA test result revealed that both token economy and time-out counselling techniques have similar effects in reducing the exhibition of disruptive classroom communication behaviour among JS2 students exposed to token economy counselling technique and time out counselling technique treatments when compared with those of the control group. In addition, the research question was answered through the computation of the pre-test and post-test mean scores which showed that both treatments had effect on disruptive classroom communication behaviour. The result of a lower disruptive classroom communication behaviour post-test mean score confirmed the reduction in the exhibition of such disruptive behaviour among students exposed to the two treatments. The findings of this study confirmed that of Anyebe (2016) and Ya'u (2017) whose findings indicated that time-out (restraints) was more effective at reducing the number of times behavioural problems that warrant constrain occur. The findings also confirmed Ogunwole, Bello and Zakariyah (2017) whose study on the effect of token economy counselling technique on disruptive classroom communication behaviour indicated the effectiveness of these two techniques at reducing the exhibition of disruptive behaviour. The display of these disruptive behaviours during class instruction may not only deter teacher's professional efforts but may also, if unchecked, spread and breed more disciplinary problems in the classrooms. Therefore, the findings of this study are in agreement with Operant conditioning by B. F. Skinner that the best way to understand behaviour is to look at the causes of an action and its consequences (Mcleod, 2007).

Conclusion

The results of this study have provided empirical evidence to suggest that both token economy and time-out counselling techniques have same significant effect on the reduction of disruptive classroom communication behaviour. The outcome of this study implies that these techniques can be used to remedy unhealthy behaviour and also to promote healthy behaviour needed for effective teaching and learning.

Recommendations

1) Counselling Psychologists should use any or both techniques to treat disruptive classroom communication behaviour, to enhance healthy behaviour which has become an essential attribute for effective learning.

2) School Psychologists should organise workshops and seminars to create awareness on the application of these two techniques, for school administrators, classroom teachers and parents. These two counselling techniques can be useful tools in their delivery of class instructions and handling misbehaviour among students or as parents.

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