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Effectiveness of Behaviour Modification Strategies in School Going Children for Specific Classroom Behaviour

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Abstract

Background: It has been seen that normal children have some behavioural problems that may affect their academic performance, despite of having no disability. The prevalence of such behaviour problems in children is alarmingly high. The number of affected children and adolescents is still staggering. Specially, in set ups where, there are very less number of teachers available for students, who are unable to pay attention on these behavioural issues of children. Thus, these problems are been overlooked, which in long run can create difficulties in shaping the future of the children. Hence, there is a need to pay attention by helping the children with the behavioural problems. There are some studies which show that behaviour therapy works to change problematic behaviours in children. Thus these strategies will help the children to change their specific behavioural problems and adapt to the social environment more efficiently.

Methodology: 78 participants were examined for the study. Their particular problematic behaviours were selected and the interventions for them were set. Intervention was given for a period of 8 weeks, twice per week and the session lasted for a period of 40-45 minutes. Daily assessment was taken on time sampling and frequency recording forms. Behaviour Modification was applied.

Results: Baseline data of Time sampling and frequency recording was collected and recorded on the first day before starting the intervention then at fourth week and then at eighth week. The results for the study were analysed through comparison of the results at baseline, fourth week and eighth week readings. The percentage increase or decrease in the behaviours was recorded according to the time sampling and frequency recording

Conclusion: Behaviour Modification Strategies are effective technique to reduce problem behaviours shown by students in the classroom.

Keywords: Behaviour modification; Time sampling; Frequency recording

Introduction

It is rightly said that, human behaviour is the mirror in which everyone shows their image [1]. Behaviour of a human being is determined by four primary factors namely, biological factors that are age and sex, biosocial factors which means how people interact with each other, cultural factors are regards to which culture they belong to, and the situational factors are the environmental challenges they face [2]. Behaviour is strongly influenced by the interpersonal relationships and people usually learn to adapt to a situation by observing other individuals [3,4]. Oxford dictionary of psychology defines behaviour as "a physical activity of an organism including overt bodily movements, internal glandular or other physiological processes constituting the sum total of the organism's physical responses to its environment" [5].

Behaviour is affected both by the genes that we inherit and the environment in which we live [6].

"Homo sapiens" are never static because they undergo several changes from the moment of conception to the time of death. The term

used for these changes is "development". Hurlock defined development as progressive series of orderly, coherent changes [7,8]. Development is a complex process of integrating many structures and functions that occur due to maturation and experiences resulting in network of interactions [8]. Goal of these developmental changes is to strive the best person possible, both physically and mentally [7]. Maturation and learning play an important role in development [7,8]. Hurlock said that; attitudes, habits and patterns of behaviour established during early childhood determine successful adjustment of an individual to life, when he grows old. Each phase of development has characteristic behaviours, in which there are periods of equilibrium wherein, an individual makes good personal and social adjustments and periods of disequilibrium wherein, there are difficulties in adaptation to the environment [7,8]. In every stage of development there are respective social expectations whereby, the approved patterns of behaviour are to be acquired at various ages during the lifespan [8].

Childhood is a period of life characterized by change and the necessity for adaptation. During this phase, a child is immature and developing. The continuous interaction between maturational and environmental factors throughout childhood helps to mould the personality development of the child [9]. John Watson describes a child as raw material waiting to be shaped by parents and others. The

emotional, cognitive, and moral environments to which a child becomes exposed are crucial for healthy development. With increasing age, children are exposed to increasingly complex social networks which provide them with opportunities and expose them to the complications of peer relationships [10].

Research shows that socialization is an essential developmental milestone taking place at school age, which helps a child to cope up in the society [11]. Socialization is defined as the acquisition of behaviour, norms, and abilities in accordance with the social acceptance in a particular society. Early social experiences establish the social and unsocial patterns of behaviour of a child which determines how a child adapts to his life in future [12]. This socialization occurs with the contribution of parents, peer groups and educators [13]. United Kingdom's household longitudinal study, "Understanding society" revealed that 60% of children are satisfied with their parent relationship and home environment which is essential for their willingness to achieve their goals in life. In total 28% of children show quarrelsome behaviour with their parents, when emotional climate of the family is very unpleasant, due to this later childhood is often called Quarrelsome age [14]. Parents can also find this age as troublesome because of the unwillingness of children to do what they are asked to do [15]. Thus, parents usually blame the peer group of children for such kind of oppositional behaviour.

School environment plays a crucial role in the development of child's self-esteem and self-conception. Establishment of such emotional concepts are important for a child to achieve appropriate academic success [16]. Schools impose specific task demands on a child which he has to solve by himself as an active learner. Thus, the pedagogical environments; the family, school and other classes provide unmatchable acknowledgement of the existing qualities of children and aids in gaining new abilities [17]. Education can be termed as an agency set up by the society that offers children a period of experimental social functioning and growth [18]. Vygotsky's emphasized that a child's efficient cognitive development takes place under the invaluable guidance of teachers. Discipline is an important characteristic implemented on middle-school children [19,20]. As discipline is the basis of moral development, it motivates a child to do things in right direction so as to get rewards and avoid punishments [15]. Generally children who constructively cope up with their emotions, performs well in classroom activities. But, some who are unable to do so may encounter failure in tasks given to them which leads to interpersonal conflicts along with aggressive and impulsive behaviours [21]. These experiences help mould the uniqueness of the child's personality which is influenced by the family, peer group and educators [12].

Institute of Education Sciences states that well-managed classrooms and positive relationships between teachers and students are important to avoid behavioural problems at school [22]. But, it is important to focus on the fact that society has some rules and norms and behaviours. Deviations from these rules are considered as problem behaviours. These problem behaviours are not of different kind they are just of different degree and occur under different situation as compared to the normal behaviour [23]. There are multiple interacting variables causing these behaviours such as environmental, individual, motivational, instructional, and biological, and the conflicts between these variables adversely affect the normal behavioural adjustments [23].

Behavioural problems arise due to disruptive an oppositional, distracting or defiant behaviour that disturbs the whole class [22]. The

biggest challenge faced by pupil in improving their social participation is "problem behaviours" which ranges from aggression, stereotypical behaviour, tantrums, self-injurious behaviour, inappropriate social behaviour and so on [24].

Most commonly seen problem behaviours at school are low attendance, difficulty in organizing and caring for materials, inappropriate interactions with peers and/or adults, noncompliance with requests from teachers, off-task behaviours, out of seat, biting, physical aggression, resists transitions between classes/activities, dishonesty, truant or leaving class without permission, refusing to follow, talking in between the class, back answering, passing inappropriate comments, and disinterest in classroom activities [25].

A change could be made by creating specific rules that are concise, clear and age appropriate and then moving ahead with role-playing, discipline setting and providing a positive reinforcing environment in the class [26]. Proper and consistent enforcement of these rules is necessary for the child to abide by them and avoid violations [27]. Use of contingent praise along with the rules, has strong empirical influence on both academic and non-academic behaviours [28]. On the contrary, there is ample evidence available which states that teacher's threats, nags, and reprimands have more immediate impact on student behaviour than praise statements, though it might not be effective in the long run to contain problem behaviour [29].

Behaviour Modification is one of the different methods and philosophies dealing with "inappropriate," "abnormal," or "undesirable" behaviours [30]. Behaviour Modification Therapy is a collection of psychotherapeutic technique aimed at altering maladaptive and unwanted behaviour pattern with the application of principle of conditioning and learning [5]. Behaviour Modification Techniques aim to manipulate the antecedents and consequences of behaviour so that the likelihood of appropriate behaviour is increased and inappropriate behaviour is decreased [30]. Usually all behaviours are maintained, changed, or shaped by the consequences of that behaviour. These modification strategies generally work on observable and measurable behaviours [31].

The focus of Behaviour Modification Strategies is to shape and increase the use of the replacement behaviours. Replacement behaviours are the behaviours that meet the same need as the behaviour of concern, but in a more socially acceptable way. They are not merely the absence of the problematic behaviours. It is important for the skills to be appropriate to the communication and cognitive level of the student and ideally to exist already in the student's repertoire of behaviour [32]. A child is seen as working as equal with the educator working empirically with their thoughts and feelings, behaviours and coping style, learning to notice their responses to their own internal and external cues from important others and the environment and then using this information to alter their responses which are more adaptive and successful [10]. Hence this study is aimed to achieve the same through Behaviour Modification Strategies.

Methodology

It was an experimental pre-post-test study design. Participants, school authority and parents were explained about the nature of the study, the duration of intervention of the study, and intervention and its benefits in the language best understood by them. They were encouraged to clarify queries regarding the study, if any. A written informed consent was obtained from their parents. In total of 140 participants were taken from the school. Out of which, 85 participants

were randomly selected based on the inclusion and exclusion criteria, and through Behaviour Analysis sheet. Three participants refused to participate in the study as they didn't want to. There were four dropouts during the intervention period due to their health issues. A total of 78 participants were examined for the study. The mean age of the participants was 10.39 with a standard deviation of \pm 1.176. The gender ratio of boys to girls in the intervention group was 59: 19.

The children were first observed for sessions and then their particular problematic behaviours were selected and the interventions for them were set. Intervention was given for a period of 8 weeks, twice per week and the session lasted for a period of 40-45 minutes. Daily assessment was carried out on time sampling and frequency recording forms. Behaviour Modification was applied, for the problem behaviours. The intervention was given as follows:

Introductory sessions

During the initial sessions the children were explained about the modification strategies for their particular problem behaviours. They were encouraged to replace these behaviours with the appropriate ones and were told about the rewards they will get if they follow the strategies.

Behaviour modification strategies

Five most common behaviours seen at the classrooms were selected and the following strategies were used for them.

Out of seat: Getting out of seat, leaving desk, or leaving group without teachers permission in between the class.

Intervention:

- Allow student to carry items like workbooks to another location.
- Make him class monitor.
- · Schedule short activities.

Replacement behaviours:

- The child can be the class monitor and can be out of his seat for the monitor work.
- He can use sticky notes to inform the teacher about the reason of his out of seat behaviour.

Non-compliance of request from teachers and other adults: Refusing to comply with request of teachers or other adults in authority.

Intervention:

- Make them sit in front rows of the class.
- Make him sit with more obedient students.
- Develop a plan to earn rewards.

Replacement behaviours:

- To become teachers aid.
- · Request simpler format for task at hand.

Off task: Student often does not stay focused on or complete task within time allowed. Student does not participate in classroom activities and discussions. Does not complete tasks of which he or she is capable of.

Intervention:

Give student extra responsibilities.

- Divide assignment into parts and check.
- Dividing the class into groups for activities and discussions.
- Help peer to complete work.

Replacement behaviours:

- Child should raise his hands whenever he is not in synchrony with the on-going task.
- Child could be the main speaker for his group.
- He can use the break card to tell teacher about any difficulty he is facing.

Physical aggression: Any instance of hitting, kicking, scratching, or pinching of the class mates or group members; instigating fights.

Intervention:

- Reduce activities those are more threatening.
- Do not compare with partner.
- Provide pillow or punching bag and ask to hit it when agitated.
- Can go and run around the playground and come back to the class.

Replacement behaviour:

- Show Problem card.
- Go to his pillow or bean bag.
- · Looking after weaker classmates.

Talking out/back/inappropriate comments: Talking out of turn during class time, talking back in rude manner to adults, inappropriate comments in class.

Intervention:

- Remind student of classroom rules.
- Praise of the other appropriate behaviours shown by the student.
- Provide opportunities to discuss thoughts of the day.

Replacement behaviour:

- Use turn card.
- Ask time to speak with a personal privately and help if there are issues.
- Note doubts or grievances and then discuss later.
- Count to 10 silently before responding.

Reinforcement Scheduling

Rewards were given at the end of every intervention session according to the performance of the student.

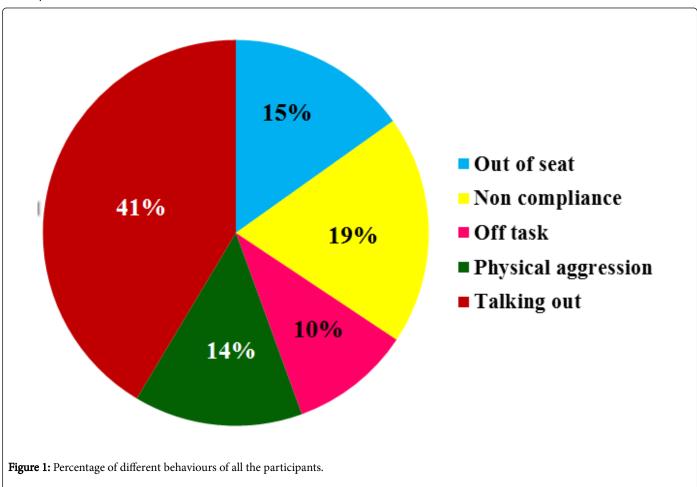
- First reward was cardboard stars, which were given in order of yellow stars, then green stars and then big pink stars respectively.
- Second reward was pasting the photos of children who behaved properly in class, on the good behaviour chart.
- Then lastly small gifts were given.
- These tangible rewards were accompanied with social verbal rewards

Rewards were changed every two to three sessions to maintain the interest of students. At the end the overall increase or decrease of the behaviours were recorded. Baseline data of Time sampling and frequency recording was collected and recorded on the first day before starting the intervention then at 4th week and then at 8th week. Data was then collected at each session of the intervention period. The results for the study were analysed in terms of behaviour which was

indicated by change in scores in time sampling and frequency recording scales. The percentage increase or decrease in the behaviours was recorded according to the time sampling and frequency recording. Comparison of the results with percentage was made at baseline, $4^{\rm th}$ week and $8^{\rm th}$ week readings. As the data collected was regarding frequency of behaviour observed in participants, authors thought to have comparison between Pre and Post intervention data to simplify the analysis.

Description of Participants

In total 78 participants were included in the study showing different problem behaviours in the classroom. Maximum number of participants that is 41% showed talking out behaviour; noncompliance behaviour was showed in 19%, out of seat behaviour in 15%, physical aggression behaviour in 14% and off-task behaviour in 10% participants (Figure 1).



Time Sampling

Occurrence of behaviour was analysed using time sampling in terms of percentage. The percentage of occurrence of all the five behaviours was recorded at the pre intervention week, 4th week and 8th week. The percentage of occurrence of off-task behaviour at pre intervention week was 79%, at the 4th week was 51% and at the 8th week was 23%. For out of seat behaviour it was 77% at the pre intervention week, 52% at the 4th week and 18% at the 8th week. Occurrence of non-

compliance of teachers, behaviour was noted 78% at the pre intervention week, 47% at the 4^{th} week and 18.3% at the 8^{th} week. Consecutively, physical aggression was 75% at the pre intervention week, 43% at the 4^{th} week, and 23% at the 8^{th} week. Lastly, for talking out back and inappropriate comments, occurrence of behaviour was 81% at the pre intervention week, 64% at the 4^{th} week and 22% at the 8^{th} week (Table 1).

Sr. No	Behaviours	% of Behaviour occurrence		
		Pre	4 th Week	8 th Week
1.	Off-task	79	51	23
2.	Out of seat	77	52	18

3.	Non-compliance to teachers	77	47	18.3
4.	Physical aggression	75	43	23
5.	Talking out, back, and inappropriate comments	81	64	22

Table 1: Comparison of Time sampling Scores at Pre, 4th week, and 8th week of intervention.

Frequency Recording

The number of occurrence of the problem behaviours per day was recorded using the frequency recording scores in terms of percentage. The percentage of occurrence of all the five behaviours throughout the day was recorded at the pre intervention week, 4th week and 8th week. The percentage of occurrence of off-task behaviour at pre intervention week was 70%, at the 4th week was 56% and at the 8th week was 26%. For out of seat behaviour it was 75% at the pre intervention week, 60%

at the 4th week and 34% at the 8th week. Occurrence of non-compliance of teachers, behaviour was noted 68% at the pre intervention week, 50% at the 4th week and 25% at the 8th week. Consecutively, physical aggression was 65% at the pre intervention week, 46% at the 4th week and 24% at the 8th week. Lastly, for talking out back and inappropriate comments, occurrence of behaviour was 62% at the pre intervention week, 43% at the 4th week and 26% at the 8th week (Table 2).

Sr. No	Behaviours	% of Behaviour occurrence		
		Pre	4 th Week	8 th Week
1.	Off-task	70	56	26
2.	Out of seat	75	60	34
3.	Non-compliance to teachers	68	50	25
4.	Physical aggression	65	46	24
5.	Talking out, back, and inappropriate comments	62	43	26

Table 2: Comparison of Frequency recording scores at Pre, 4th week and 8th week of intervention.

The data analysis shows that there was marked reduction in the presentation of the five selected problem behaviours in the 78 participants of the study. A little reduction was seen after 4th week of intervention but a considerable decrease was seen after 8th week of intervention.

Results and Discussion

Problem behaviours at school are a cluster of behaviours characterized by noncompliance, aggressive behaviour and refusal to obey adults and ignoring instructions, lying, off-task and out of seat behaviours, which are all in violation to societal and familial rules [32]. According to American Psychiatric Association persistent pattern of behaviours violating basic rights of age-related societal norms, may result in significant clinical impairment as in social skills, academics, and occupational functioning. Etiology of such disorders is multifactorial like disadvantaged, dysfunctional, and disorganized home environments, low socioeconomic status and impaired cognitive and psychological profiles. Crowell et al., in 2006, reviewed several studies where the results revealed the role of autonomic under arousal in conduct disorder [33].

The present study was aimed at finding a solution to such problem behaviours at regular schools. The results of the study found significant difference in the pre intervention reading that was taken on the first day of the intervention and in 8th week in both time sampling and frequency recording scores which signifies that behaviour modification strategies applied for specific behaviours are effective in reducing the

problem behaviours at school. Thus, these strategies could be applied on a regular basis for helping such children to overcome their behaviour issues and to cope up effectively with the school environment.

The biggest challenge schools face today is to create and sustain a positive and behaviourally effective school environment [34]. Approaches aimed at improving school and classroom environments, including reduction in the negative effects of disruptive or distracting behaviours, can enhance the chances that effective teaching and learning will occur, both for the students exhibiting problem behaviours and for their classmates. Sometimes when a number of students in a classroom demonstrate such behaviours, teachers may fall short of management strategies to deal with such problem behaviours in their classroom [21].

Behaviour Modification is one of the tools for managing inappropriate or undesirable behaviours that are observable, describable, and measurable behaviours [30]. Operant conditioning is the basic principle for the Modification Strategies used in this study namely positive reinforcement, negative reinforcement, time out technique and assertiveness training [23]. Nemeroff and Karoly described that varied range of childhood behaviour problems are successfully treated with operant conditioning. Basis of operant conditioning by B. F. Skinner is Law of effect formulated by Edward Thorndike (1874-1949), which states that behaviour that is followed by consequences satisfying to the organism will be repeated, and behaviour that is followed by unpleasant consequences will be discouraged. Reinforces can be the best consequences, which are of

various types such as attention, feedback, tokens, edibles, auditory, and visual stimulus [35].

Foxx in 1972 said that attention is an extremely powerful reinforces used in variety of behaviour modification to teach skill behaviour. Even though it is so powerful it may have a negative effect if not given in an appropriate manner. The participants in the current study were given attention at proper intervals and only after particular response. Immediate attention to the behaviour change is essential to see required effects. Tokens were also used along with verbal attention to address at every progression in student's improvement of behaviours. Alter et al. in 2008 stated tokens are symbolic and conditioned rewards to represent the actual reinforcement which the students will receive in the future, so that frequent rewarding does not disrupt in the academic learning [36]. Here, the tokens were cardboard stars of yellow, green, and pink colours which were consecutively given every third day of intervention. This motivated the students to decrease their problem behaviours and maintain discipline in the class. Researchers have found that positive behaviour supports such as motivating and applying fair discipline rules for children are associated with improved acquisition of academic skills [34]. For children best motivation is to allow them to do their work of interest or play, so with the help of teachers they were provided extra games, music and other recreational activity classes if they showed the desired behaviour.

Visual reinforcements were given in the form of photos of the students pasted on the wall of their classroom. These reinforcements are effective during responding rather than after responding, and they are natural, relaxing, and pleasant experiences [35]. Verbal praise was exclusively added to increase the confidence and self-image of the children and encourage acting in right manner. Numerous studies have been conducted to see the effectiveness of praise statements on children in schools [27]. Feldman and Weinstein in 2003 mentioned in their study that behaviour specific feedbacks are more effective in which the behaviours are praised precisely.

Some of the most common behaviour problems were chosen for the study, that are out of seat, non-compliance with request from teachers and adults, off-task, physical aggression and talking out/back/inappropriate comments. Inappropriate talking was a problem behaviour that was seen in maximum participants, which was apparently due to less opportunity for interaction in the class, short break times, disinterest in the subjects and monotonous teaching pattern. But the effect of Behaviour Modifications was considerably less for this behaviour, as compared to other behaviour such as physical aggression. A research report presented by Wilson and Lipsey in 2005 stated that school-based aggression behaviour can be prevented by psychosocial interventions [37].

Present study showed visible improvements in children with, out of seat and non-compliance to teachers, which could be due to Hawthrone effect. As described by Henry Landsberger Hawthorne effect is a term referring to the tendency of some people to work harder and perform better when they are participants in an experiment. Individuals may change their behaviour due to the attention they are receiving from researchers rather than because of any manipulation of independent variables [38]. Hence, Time out procedure of differential reinforcements is specifically used for these two behaviours, where a response removes the access to reinforcement for a specified period of time [39]. More appropriately response cost is used, that is a procedure in which an inappropriate response leads to removal of some portion of accumulated reinforcements [40]. This is used in conjunction with

token economy where one disruptive behaviour can reduce one token that was earned.

Behaviours such as non-compliance to teachers and adults were benefited with one of the Behaviour Modification techniques called modelling. Modelling is a kind of observational learning where the children are inspired by others who are able to perform better in comparison to them. It demystifies the behaviour, makes it less frightening and encourages the belief that "I can do it, too." In this technique, a role model is given to the children to follow and they are taught to deal with a situation with role playing [41].

According to a study done by Jeffrey Sprague and Robert Horner 2000, there are no schools immune from challenging problem behaviours. Thus, in such scenario Behaviour Modification can greatly help parents, teachers and children to learn specific techniques and skills from an educator knowing the approach, that will help improve children's behaviour. In combination with all these strategies, contribution and support of the parents is equally important as parental guidance plays an important role in the personality development of children.

Richard Coleman in his study stated that there was a decrease in such behaviours in the school classrooms when conditioning techniques were applied. At the end of the present study, there was about 52-59% decrease in the problem behaviours on the time sampling scores and 36-44% decrease in the frequency recording scores. Henceforth the study has successfully contributed to decreasing the problem behaviours in a primary school setup.

Conclusion

The final outcome of the study depicted that, the behaviour modification strategies are effective techniques to reduce problem behaviours shown by students in the classroom.

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