



RESEARCH PAPER

An Investigation of the Impact of Positive and Negative Reinforcement in Motivating Student's Learning

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ABSTRACT

This study delves into the dynamics of reinforcement in Pakistani undergraduate classrooms within government sector university, examining its meaning, application, and impact on student learning. Through a mixed-methods approach involving a questionnaire and interviews with a sample of 40 students, alongside graphical representations, the research investigates both positive and negative reinforcement effects. The findings highlight a consensus among teachers and students on the efficacy of positive reinforcement in enhancing student motivation, while also emphasizing the need to restrict the use of negative reinforcement due to potential negative repercussions on student well-being. The study underscores the importance of educators comprehending student psychology and behavior for the effective implementation of reinforcement strategies. It advocates for ongoing professional development for teachers to optimize learning environments and foster positive student outcomes. Therefore, prioritizing teacher training in reinforcement techniques is imperative, followed by continuous observation of the roles of positive and negative reinforcement across educational level.

Keywords: Motivation, Negative, Positive, Reinforcement

Introduction

The Reinforcement plays an important role to bring a change in a behavior. When a stimulus is given after the reaction, it serves to increase the likelihood that a particular behavior will take place. The uses of reinforcement have been used with both human beings and animals. Positive reinforcement and negative reinforcement are the two main categories of reinforcement. Positive reinforcement is an extremely effective and practical method for modifying and forming behavior. After the desired behavior is displayed, positive reinforcement works by giving the person a stimulating item, increasing the likelihood that the behavior will be repeated in the future. On the other hand negative reinforcement is when a particular stimulus is removed after a specific behavior is exhibited. The likelihood of the particular behavior occurring again in future is increased because of removing the negative stimuli. It should not be thought as a punishment because with negative reinforcement you are increasing a behavior, whereas with punishment, you are decreasing a behavior. The theory of reinforcement was created by B.F. Skinner. He believed that behaviors can be changed by providing subjects with positive and negative reinforcement. This theory has been helpful to manage classroom discipline, because actions that result in pleasure are likely to be repeated. Therefore, reinforcement is a long-standing motivational technique. People try to behave in ways that result in rewards or valued outcome. This reward reinforces the behavior and motivates people to behave in the similar way in future.

The reinforcement is considered as a motivator if the desired behavior is achieved or is increased. Some pupils are propelled by grades, while others are encouraged by introspective techniques. Moreover it is more influenced through repetition with certain amount of inputs and reward and in the result targeted behavior can be achieved. Reinforcement can be an effective motivator when handled properly. Positive reinforcement from teachers in form of rewards and praise will encourage students. It is completely supportive in both the behaviors in the first phase it is helpful administering the productive behavior to suggest the oscillation and persistence in certain attitudes. In second phase it changes the recurrence and density of distracting undisciplined behavior density. Negative reinforcement, on the other hand, quickly puts a stop to a behaviour since it entails the elimination of an unpleasant stimulus, like a test or a threat. Students are consequently put in an undesirable circumstance, which motivates them to flee by taking the necessary action. The learner has a choice because taking the right action will allow them to avoid the undesirable situation. Therefore, the teacher may find positive reinforcement to be rewarding. It suggests that punishment does not include negative reinforcement. Both have correlational impact for each other. Both have an imbedded unpleasant stimulus, or something that a person would want to avoid, which is what causes the mistake. So, the difference lies in consequences. In negative reinforcement we perform well to avoid an aversive situation. Punishment, on the other hand does not reinforce any specific behavior. It only deals with the behavior that needs to be stopped. With means of negative reinforcement "Improvement is limited to the amount of behavior that will terminate or avoid a punisher" (Danial & Danial, 2004, p.103) The problem of punishment is that it is only effective in threatening circumstances. It does not necessarily eliminate a behavior. It is possible that when the threatening situation is out of sight the individual will revert back to the previous behavior. In negative reinforcement the case is opposite. The control is not much there and freedom is there. All what negative reinforcement does is make a behavior more likely to occur in future. Punishments are not effective always as a way of controlling students in class but negative reinforcement is because the nature of control is entirely different.

If we look at Pakistani context, we can see that the concept of reinforcement is more common in private sector than in public sector. Students are rewarded in form of verbal and non-verbal forms of reinforcement in private sector which encourages them to perform better in their studies whereas if we examine the situation of government schools, we can see that students are not provided with reinforcement either positive because of the delayed feedback, as a result they are not motivated to improve their learning. We can see by examining the situation in both public and private institutes that negative reinforcement is rarely used.

Literature Review

Reinforcers are present all over in our surroundings and it is natural to every human being that when he receives some form of reinforcement his level of motivation increases and they work hard and can produce better results no matter which area of life is. A reinforcer can be described as "A stimulus that strengthens behavior if it is delivered after the behavior occurs" (Mazur, 2006). There are number of environmental reinforcers that influence our behavior. These reinforcers can have a powerful impact on behavior modification. A lot of work has been done on behavior modification in the field of education and psychology. In this regard B.F. Skinner is very persuasive and authoritative theorist for the advancement in behavior with the pursuance of

rectification and adaptation (Labrador, 2004). Later on in the period of 1930 Skinner enlarged the same ambit in behavioristic approach. But Watson was the precedent as he first introduced the formulation of operant conditioning. This phenomenon provides the mechanisms of impacts and results how to control the specific attitudes and behaviors with reiteration and reinforcement (Miltenberger, 2008,). No doubt Skinner's work has also contributed in the sphere of education and psychology. He offered and presented two types of recurrences and reinforcement awarding. These are called negative and productive reiterations .Positive and productive reinforcement postulates the constructive adaptability among the participants i.e. students and teachers. However negative and compressed reinforcement exhibits the removal of undermining behaviors with introducing the adverse reward in this regard. Basically in this type of compressed reiteration is very helpful as it has strength to stop insertion of the undesirable behavior.

These both types of recurrences reiteration and reinforces have vital significances in educational scenarios and field. Both teachers and students have effective position in this domain. Both are responsible for the construction of the society. Quality of education is interlinked with quality of teacher in order to provide the microcosm. (Salvis 1997). Teaching makes learning easier, and during the learning process, reinforcement can be extremely helpful. Giving positive and negative reinforcement primarily serves to either improve or worsen a learner's behaviour. Students are supported and encouraged to achieve well in their learning process by positive reinforcement. They become more motivated as a result, which is a crucial component of schooling. "Motivation is the force that makes a person to initiate an action, continue with the action, until they achieve goal. (Ryan &Deci,2000 ,p.55). Motivating students in class through reinforcement provokes them to get interested in the learning process. Positive reinforcement comes in different ways like praising; giving rewards and grades.it can be both verbal and non-verbal .Effective teachers use praise to encourage students to improve their academic performance and to foster an environment where everyone can learn.. (Deci,&Reyan,1999)say that positive reinforcement in form of praise had a positive impact on student's interest.(as cited in Tuckman& David,). However, educators must assess how frequently positive reinforcement should be employed in the classroom. Many teachers continuously use praise to encourage their students' usage of social and academic behaviours ,according to Conroy et al. (2009).It is crucial for instructors to understand how to respond to praise in a classroom setting. According to Conroy et al. (2009), praise must contain specific statements about the appropriate behaviour students demonstrate, be conditional upon desired behaviour, be given frequently while students are learning a new skill, and be given less frequently once the skill has been mastered.(n.p).Students are motivated by teachers who employ positive reinforcement.Teachers can increase motivation by praising and rewarding students for their good behaviour. Tokens, stickers, and certificates are examples of useful items. When a teacher or member of the staff use this tactic, it's crucial to acknowledge the outstanding work, find out how the student felt, and explain to them that the reward serves as a reminder of that happy emotion.(Diedrich,2010)

Negative reinforcement can be just as effective as positive reinforcement in helping students learn.According to Levine (1999), "in negative reinforcement, specific behaviours are strengthened by the result of the cessation or avoidance of a negative condition." Aversive situations that people want to end, flee from, or avoid can be thought of as negative reinforcement. Negative reinforcement occurs when a child's behavior enables them to avoid an unpleasant, embarrassing, or disagreeable experience. This behavior is therefore more likely to be acquired and repeated in the

classroom. Negative reinforcement is used in the classroom to provide students the option of skipping an evening homework assignment if they behave appropriately during class activities. Takeaway of an award is one popular negative reinforcement utilized in the classroom.

Therefore negative reinforcement motivates students which leave a strong impact on student learning. It can have long term effects and must be barely used with paying close and careful attention to the aversive stimuli used. If it is used continuously it will lose its effects so both the reinforcements either positive or negative should be used in moderation.

So the following study was conducted to see whether reinforcement plays an important role in motivating student learning. Much work has been done on the impact and effective strategies of positive and negative reinforcement but the following studies tries to find out that whether negative reinforcement is equally effective as is positive reinforcement and does both types of reinforcements motivate students equally to learn. This is the gap that the following study tries to fill.

Hypothesis

- 1) Positive reinforcement is more effective than negative reinforcement.
- 2) Negative reinforcement plays the same role as positive reinforcement.
- 3) Positive and negative reinforcement help teachers to motivate students in their learning.

Material and Methods

The purpose of the study that follows was to determine how positive and negative reinforcement affected student learning motivation. The goal of the study is to determine the best kind of reinforcement. It aims to determine whether positive and negative reinforcement tactics are most useful in the classroom and investigates if negative reinforcement serves the same purpose as positive reinforcement.

Nature of the study

This research is based on pragmatic paradigm and the approach that this study is using is mixed method. Concurrent mixed techniques are used by the researcher because they combine quantitative and qualitative data to produce precise interpretations of the study problem.

Population

The population that was selected for the study was 20 undergraduate students of Bs(Hons) 1st semester. The population comprised of girls and boys. Because the study uses mixed method approach interviews were also conducted so four teachers were also considered as a part of population selected for the study.

Sample

The sample that was selected to conduct the research comprised of four teachers and 20 students. Both the teachers and the students were randomly selected.

Research Tool

The research used a survey questionnaire as a tool to gather relevant data. Researchers approached this according to the information needed. A standardized questionnaire was created to collect the student's responses. Both positive and negative reinforcement, their tactics, and the effects on students were included in the questionnaire. The questions in the survey questionnaire were close ended. To answer close ended questions of the survey questionnaire Likert scale was used. Apart from that a semi-structured interview was also conducted. The teachers were interviewed so that the researcher could find their views about using positive and negative reinforcement in class.

Data Collection

In the following study informational adequacy was sought using a structured questionnaire. There were 16 questions in the survey questionnaire. The questionnaire was administered among 20 undergraduate students. Additionally, a semi-structured interview was conducted to get the opinions of teachers on how reinforcement affects students' learning.

Analysis of Data

The responses of the survey questionnaire were statistically analyzed and explained with the help of graphs. The answers of the teachers were explained which enabled the researcher to analyse their opinion and attitude towards using reinforcement in class.

Design and Format of the Survey Questionnaire

Interviews were also conducted with 4 teachers who were part of the same institute from where the sample of the students was selected. Students' replies to questions related to the function of reinforcement were included in a semi-structured interview questionnaire that was composed of 10 questions. The interview's questions were all open-ended. During the interview, following topics were the main emphasis of the questions:

- How often do teachers use positive and negative reinforcement in the classroom?
- Is it effective to utilize reinforcement constantly?
- In-class planning for both positive and negative repetition.
- Which form of reinforcement has more sway?
- Improving students' motivation for learning through the application of reinforcement.

Pilot -testing of survey Questionnaire

In order to check whether the questionnaire was clear to the respondents, the questionnaire was first administered to a group of students of the same class but was not part of the population selected in the study. The following step was taken to remove ambiguities present in the questionnaire. At first the students were not clear about the difference between reinforcement and feedback. This point was made clear to them. Secondly, they were unable to differentiate between negative reinforcement and

punishment. They were informed that the purpose of punishment is to eradicate a behaviour, and that the purpose of compressed reinforcement is to inhibit a disruptive event from developing a behaviour.

Data Analysis

Survey tool Questionnaire

This study examined the role of productive and negative recurrences on student learning, using a survey questionnaire and graphs.

Table 1

Positive and Negative reinforcement motivate students' learning

Response	Percentile
Strongly Agree	75%
Agree	25%
Disagree	0
Strongly Disagree	0

In response to the first question about reinforcement strategies – both positive and negative – in inspiring children, it was found that all the students agreed. 15 of the students strongly agreed and 5 agreed that positive reinforcement motivates students learning and encourages the student to perform better in future.

Table 2

You think positive and negative reinforcement are equally effective?

Response	Percentile
Strongly Agree	0
Agree	30%
Disagree	50%
Strongly Disagree	20%

In the second question the students were asked that whether both positive and negative reinforcements are equally effective or not. In response to this questions 6 students agreed, 3 strongly agreed that both are effective but a large number of students felt that negative reinforcement cannot play the same role as positive reinforcement.

Table 3

Long lasting effect of positive reinforcement on student's learning.

Response	Percentile
Strongly Agree	45%
Agree	55%
Disagree	0
Strongly Disagree	0

The third question helped in finding out their views about the long lasting effect of positive reinforcement. It was found that all the responses were positive 11 students agreed and 9 strongly agreed that positive reinforcement in form of praises grades leaves a strong and long lasting impact because it's likely that they will repeat a certain behavior in future.

Table 4

Long term negative reinforcement does not get the job done.

Response	Percentile
Strongly Agree	0

Agree	50%
Disagree	40%
Strongly Disagree	10%

In response to the fourth question it was found that 10 students agreed that the students will develop a behavior with negative reinforcement but if it is used for a longer period of time it will lose its affects. However, 2 Students strongly disagreed and 8 agreed that long term negative reinforcement cannot be effective for longer use.

Table 5
Negative reinforcement motivates student to perform well in future.

Response	Percentile
Strongly Agree	0
Agree	65%
Disagree	5%
Strongly Disagree	30%

Students were questioned in this question whether they believed that punishment motivated them to perform well in the future. In contrast to the 6 students who strongly opposed and the 1 student who disagreed, 13 students agreed that it can stimulate students' learning since it will give them relaxation by eliminating the negative reinforcement.

Table 6
Rewarding children always makes them take teachers for granted.

Response	Percentile
Strongly Agree	0
Agree	25%
Disagree	50%
Strongly Disagree	25%

In answer to the question of always rewarding children for good behavior will eventually become useless, 10 students disagreed, 5 agreed but 5 students strongly disagreed that its continuous use will make it ineffective.

Table 7
Negative reinforcement can work with younger students than adults.

Response	Percentile
Strongly Agree	0
Agree	45%
Disagree	50%
Strongly Disagree	5%

In response to this question 10 students agreed that negative reinforcement can be more effective with younger students 1 student strongly disagreed however, 9 students believed that it can be effective with only younger students.

Table 8
Positive reinforcement develops good relation and understanding of teacher and learning.

Response	Percentile
Strongly Agree	75%
Agree	25%
Disagree	0
Strongly Disagree	0

This question focused on the point that positive reinforcement develops a good relation and understanding of teacher and learning. It was found 15 students strongly agreed and 5 students just agreed that for a behavior to develop its good if the teacher uses positive reinforcement.

Table 9
Nonverbal reinforcement in form of head nods, smiles and eye contact is equally important as verbal reinforcement.

Response	Percentile
Strongly Agree	5%
Agree	55%
Disagree	30%
Strongly Disagree	10%

When students were asked about the effectiveness of non-verbal reinforcement it was found 11 students agreed that it has the same impact as verbal reinforcement. However, 6 students disagreed and 2 strongly disagreed that non-verbal reinforcement cannot play the same role.

Table 10
Negative reinforcement for a longer period de-motivates students and lead to complexity in learning process.

Response	Percentile
Strongly Agree	0
Agree	75%
Disagree	25%
Strongly Disagree	0

15 students agreed that continuous use of negative reinforcement can demotivate students and makes the learning process complex. Whereas, 5 students disagreed that it can de-motivate students and creates complexities.

Table 11
Reinforcement in form of praises, rewards and grades is more effective than negative reinforcement.

Response	Percentile
Strongly Agree	45%
Agree	40%
Disagree	15%
Strongly Disagree	0

Nine students highly agreed, eight agreed, and three disputed that reinforcement in the form of compliments, awards, and grades was valued by the students.

Interviews with Teachers

Apart from using a survey questionnaire interviews were conducted with four teachers of the same institution and who were teaching at the same level.

Teachers A, B, C, and D were used to identify the educators and a comparison was made to of the responses given by the different teachers.

The researcher asked the teacher that do they often use any type of reinforcement in the classroom all the teachers agreed that yes they do use both types of reinforcement in the class depending on the situation. The teachers were also asked that which type of

reinforcement they use in class 3 teachers said they try to use positive reinforcement in the class whereas Teacher D said that he selects reinforcement which is appropriate within a particular context. The teachers responses about whether both the reinforcements are equally effective or not. Teacher A and B said that both reinforcements are effective but teacher D and said that negative is not as effective as positive reinforcement ,however it can play an effective role if used properly in class. All the teachers except teacher A agreed that positive reinforcement is more effective as it has something attractive to offer which a student always want. With regard to the continues use of positive reinforcement Teacher A and D were in favor because they think that if students are praised for their work they will likely behave in the same way again but Teacher B and C said that if positive reinforcement is continuously the students will become over confident and their motivation to perform better in future will be badly affected. In response to the question that negative reinforcement increases students' behavior all the teachers agreed that yes it does but they raised the point that it can be effective for shorter duration. Teacher D and B said the type of class and students matter a lot when using negative reinforcement because some student can get irritated by negative reinforcement and in this way their level of motivation will decrease which will affect their learning process. Additionally, students' behavior was uninspired, dreary, and pertinent to their academics. When the teachers were ask that positive reinforcement is more easy to practice in the class all the four teachers agreed to it because praising students is something natural a teacher does to his students. In another question the teachers were asked that whether they think the use of negative reinforcement should be increased in the class Teacher B said yes because he believed that When an aversive task is removed from student he feels relaxed and performs well while all the other teachers said that its use should not be increased because it can de-motivate them. They were also asked about the effects of both types of reinforcement on students results all were of the view that yes it does have a positive effect on student's results. The teachers were also asked about the type of reinforcements teacher use in class Teacher A said he sometimes gives money to students, teacher B said giving grades is the best form of positive reinforcement and teacher C and D said that they use both verbal and nonverbal reinforcement in class.

Analysis of Teacher's Responses

So it can be seen from the responses of teachers that the entire teacher prefers using both types of reinforcement in the class because in this way the students will be more motivated and their performance will be affected by it. The teachers agreed on a point that it is the child background and behavior that makes a teacher to decide which kind of reinforcement should be used in class however all were too much extent in favor of positive reinforcement. The teachers expressed that they should be careful in selecting the type of reinforcement because it may suit to a particular group of students but can be extremely ineffective for the rest of the class. Teachers agreed that positive reinforcement is more effective than negative because negative will lose its effects after some time. They even believed that the continuous use of positive reinforcement can become ineffective for students will start taking it for granted .However; all the teachers agreed that both the reinforcement does motivate and improve results and learning of the students if appropriately used. Negative reinforcement was difficult to practice in class as compared to positive reinforcement as it is easily practiced and has more fruitful results. All the teachers were using reinforcement in form of praises, rewards, grades and sometimes with money but some of them also agreed that nonverbal reinforcement is equally effective.

Conclusion

The purpose of the study that follows was to determine how positive and negative reinforcement affected student learning motivation. The study looked at how teachers and students felt about using reinforcement in the classroom. It was discovered that while few teachers and students supported negative reinforcement, both groups agreed that reinforcement in any form can boost students' drive to learn. Positive reinforcement was found to be beneficial for both teachers and students, and teachers and students both preferred positive reinforcement in the form of compliments, awards, and grades. Although both teachers and students agreed that negative reinforcement is somewhat beneficial, they felt that the teachers should think carefully about how much punishment is administered in class. For a shorter period of time and with younger pupils, the teachers thought negative reinforcement may be quite helpful. Even when utilizing positive reinforcement, the instructor should exercise caution because it loses its effectiveness if employed often. The students will begin to consider it commonplace. It follows that teachers should first assess the psychology and behavior of their pupils before deciding on the appropriate kind of reinforcement to apply in class.

If we examine the function of reinforcement in the Pakistani setting, we can observe that teachers tend to favor positive reinforcement because it is more likely to result in greater performance, as was described in the literature review. The results show that teachers also believe that the type of reinforcement should be determined by the type of class, and that both positive and negative reinforcement should be used sparingly. Both forms of reinforcement are quite powerful at motivating pupils to improve their learning.

Recommendations

1) Professional training should be provided to teachers on how and when to employ reinforcement in the classroom.

2) The research-focused assignment ought to be presented at the undergraduate level. It also ought to be conducted at elementary levels to get the views of students and teachers regarding reinforcement.

3) The study should be conducted at institutions of all types public private.

4) Survey questionnaire and interviews were the tools selected for getting the information. In future, observations should be utilized to see the impact of reinforcement on students and teachers views about reinforcement.

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