

**Mediating Role of Motivation between Positive Reinforcement and Learning Behaviour in Young Adults**Hafsa Naeem<sup>1\*</sup>, Saleh Ahmed<sup>2</sup>, Haris Naeem<sup>3</sup>, Muhammad Naeem Ashraf<sup>4</sup>, Farhana Sajjad<sup>5</sup>

- <sup>1</sup> Community Medicine Department, Wah Medical College, National University of Medical Sciences, Rawalpindi, Pakistan
- <sup>2</sup> Community Medicine Department, School of Medicine, Dentistry and Allied Sciences, PAF-IAST, Haripur, KPK, Pakistan.
- <sup>3</sup> University of Bradford, NHS UK
- <sup>4</sup> Department of Surgery, POF Hospital/ Wah Medical College, National University of Medical Sciences, Rawalpindi, Pakistan.
- <sup>5</sup> Psychology Department, University of Rasul, Mandi Bahauddin, Pakistan.

**Abstract**

The study examined the relationship between positive reinforcement and motivation on learning behaviours. Necessarily, when beginning to understand young adults and how positive reinforcement can motivate and improve learning behaviours, reinforcement plays a vital role in the conditioning process. When used appropriately, reinforcement and motivation can be effective tools to encourage desirable behaviours and discourage undesirable behaviours. A sample size of 300 individuals was taken from Rawalpindi, Islamabad, AJK, Faisalabad, Wah Cantt, Dera Ghazi Khan, and Sialkot. Among the participants, there were 150 males and 150 females, between 18 and 25 years. The research was quantitative, and the snowball sampling technique was used. The scale used was the Behavioural Avoidance/Inhibition System and the Behavioural Approach System. From this research, the correlation between positive reinforcement, motivation, and learning behaviour in the young adult population was observed. Motivation acts as a mediator between positive reinforcement and learning behaviour.

**Keywords:** Learning, Mediation analysis, Motivation, Reinforcement, Young Adults

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**Correspondence:** Hafsa Naeem

Community Medicine Department, Wah Medical College, National University of Medical Sciences, Rawalpindi,, Pakistan

Email: [hafsanaeem706@gmail.com](mailto:hafsanaeem706@gmail.com)

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## 1. Introduction

By definition, a behaviour can be thought of as any action carried out by a person, anything a person does. Positive reinforcement is a type of behaviour management that has a centre of attention on rewarding and motivating what is done well by students. (Fatima et al., 2023) Reinforce means to strengthen and support, and is used to refer to any stimulus that nourishes or intensifies the likelihood of any specific response or outcome. Positive reinforcement is a known way to reward certain behaviours. One of the reasons for its admiration is its impact on learning: it is not only an effective and constructive teaching method but also a long-term, lasting learning method. (Gunaretnam, 2021)

Positive reinforcement can be additionally constructive in the educational setting because of important factors: Social Atmosphere, or Peer Pressure. A study indicates that the use and inclusion of positive reinforcement (rewards/praise) in the classroom showed that positive reinforcement can be utilised to motivate and significantly enhance students' age-appropriate behaviours and social skills, such as manners, and the outcome will last longer even when the reward system is removed or discontinued. (Agus et al., 2024) In other words, in the classroom or any other educational setting, positive reinforcement tends to have a longer-lasting impact on individuals.

Positive reinforcement is admired as a learning tool because of its effect on motivation, as it is effective in expanding the chances of required behaviour, along with enthusiasm, engagement, commitment, and a sense of fulfilment among individuals, imparting an uplift of motivation needed to achieve the goals one sets. (Morse & Kelleher, 2022)

Motivation happens to be an important factor to be considered in learning. An individual will become more willing to learn a skill, technique, or behaviour if they are motivated by a pleasant reaction (i.e., positive reinforcement). Motivation is a state of the individual that persuades him to certain behaviours for looking for and attaining a goal. Motivation in school learning involves prompting, continuing, encouraging, and directing desirable behaviour. (Atma et al., 2021)

The motives that increase the mental fortitude and ability of an individual to accomplish something have been named "positive reinforcement". There is very little use of this reinforcement by our rudimentary-level instructors. This is because of the absence of data about psychological teaching practices and techniques. (Xu et al., 2021)

It is necessary for students to feel secure and well-supported. Positive reinforcement is an approach practitioners can apply to ensure that desired student behaviour is being recognised and rewarded. (Pathirana et al., 2024). The main focus of the study is to elaborate on the importance of positive reinforcement and enhance its use in educational settings for the betterment of the whole generation.

## 2. Method

### 2.1 Study design

A primary quantitative research method was used to measure the relationship between variables. A cross-sectional design was employed. The duration of this study was six months.

### 2.2 Sampling

A non-probability snowball sampling method was utilised because the target audience was spread out over a wide area and relied on collecting data online. People were found through university networks and recommendations from friends. The participants belonged to Islamabad, Rawalpindi, Lahore, Dera Ghazi Khan, Faisalabad, Wah Cantt, Karachi, Sialkot, and Azad Jammu and Kashmir (AJK).

The sample size (N = 300) was established according to guidelines for mediation analysis and was considered acceptable to attain significant statistical power ( $\geq 0.80$ ) at  $\alpha = 0.05$ .

The inclusion criteria encompassed university students aged 18 to 25 years, whilst incomplete replies were omitted from the analysis. To make sure there was a balance between men and women, there were equal numbers of men (n = 150) and women (n = 150) in the study.

### 2.3 Data Collection and Study Instrument

The Ethical Review Board of Foundation University Islamabad granted ethical approval for the study. All participants gave their informed consent before any data was collected, and participation was completely voluntary. We assured participants that their comments would remain anonymous and confidential and that they could withdraw from the study at any point. We sent online questionnaires to different university students, who further passed on the questionnaire to fellow students.

For this research, we used the "BIS/BAS scale (behavioral inhibition system, behavioral activation system). It is a 24-item self-report questionnaire designed to measure two motivational systems: the behavioral inhibition system (BIS), which corresponds to motivation to avoid aversive outcomes, and the behavioral activation system (BAS), which corresponds to motivation to approach goal-oriented outcomes. Participants respond to each item using a 4-point Likert scale: 1 (very true for me), 2 (somewhat true for me), 3 (somewhat false for me), and 4 (very false for me)". The scale has four subscales. One subscale corresponds to the BIS, containing seven items. The three subscales correspond to three components of BAS. BAS Drive measures the motivation to follow one's goals and contains four items. BAS Reward Responsiveness measures the sensitivity to pleasant reinforcers in the environment and also contains four items. BAS Fun Seeking measures the motivation to find novel rewards spontaneously, which is assessed through five items. (Merchán-Clavellino et al., 2019) The reliability statistics for the tool were 0.727 (Cronbach's alpha).

### 2.4 Statistical analysis

Statistical analysis was done on the gathered data through the software SPSS version 23. The process applied to the data included descriptive analysis, correlation, and mediation. Correlation was done to observe the relation between the three variables, whereas mediation was computed through SPSS to study the impact of the mediator on the independent and dependent variables.

## 3. Results

**Table 1**

*Sociodemographic Characteristics of Participants (N=300)*

Variables	f	%
<b>Age</b>		
18-21	157	52.3
22-25	143	47.7
<b>Gender</b>		
Female	150	50
Male	150	50
<b>Education</b>		
Bachelors	270	90
Master	30	10
<b>Birth Order</b>		
First Born	111	37
Middle Born	116	38.7
Youngest Born	73	24.3

Table no. 1 shows the demographic information of the participants. Half of the respondents were male, 157 (52.3%) of the respondents were between 18 and 21 years, and 270 (90%) of the respondents were graduates. 116 (38.7%) of the respondents were Firstborns.

As shown in Table 2, Pearson correlation was computed to assess the relationship between positive reinforcement and learning behaviour. The correlation between positive reinforcement and learning behaviour is .239, the correlation between learning behaviour and motivation is .389, and the correlation between motivation and positive reinforcement is .347 ( $p = 0.000$ ).

**Table 2**  
 Descriptive statistics and correlation analysis (N=300)

Variable	N	M	SD	1	2	3
PE	299	3.2117	0.53029	-	-	-
LB	299	3.1826	0.52650	0.239**	-	-
M	299	3.1361	0.60212	0.347**	0.389**	-

Note: correlation is significant at 0.05 level (2-tailed). PE = positive reinforcement, LB = learning behaviour, M = motivation

Mediation Analysis

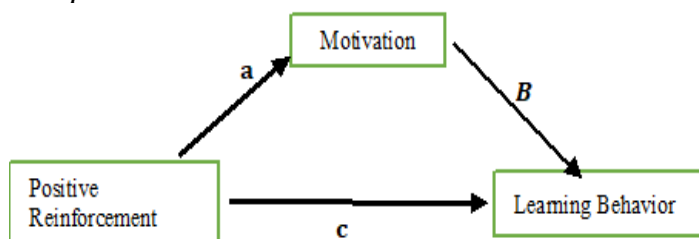
Finally, mediation was computed using the Hayes process through SPSS 23 to observe the relationship between positive reinforcement and learning behaviour using motivation as a mediator. The results of the mediation analysis were: association between positive reinforcement and learning behaviour is ( $\beta = 0.117$ ,  $t = 2.08$ ,  $p < 0.038$ ), between positive reinforcement and motivation is ( $\beta = .394$ ,  $t = 6.37$ ,  $p < 0.000$ ), and between motivation and learning behaviour is ( $\beta = 0.305$ ,  $t = 6.14$ ,  $p < 0.000$ ), as shown in Table 3.

**Table 3**  
 Motivation as Mediator between Positive Reinforcement and Learning Behaviour (N=300)

Mediator: Motivation and DV: Learning Behaviour						
	B	S.E	T	P	LLCI	ULCI
PE→LB	0.117	0.056	2.084	0.038	0.007	0.228
PE→M	0.394	0.062	6.376	0.000	0.207	0.402
M→LB	0.305	0.050	6.147	0.000	0.54	0.94
Indirect Effect						
	B	S.E	LLCI	ULCI		
PE→M→LB	0.18	0.032	0.068	0.195		
Normal Theory Test for Indirect Effect						
	Effect	S.E	Z	p		
	0.120	0.027	4.398	0.000		

Note:  $p < 0.05$ , DV=Learning Behavior, IV= Positive Reinforcement and Mediator=Motivation

**Figure 1**  
 Conceptual Framework



4. Discussion

The current study evaluated the mediating impact of motivation between positive reinforcement and learning behaviour among young people. These results show the importance of motivation as a mediator and suggest that reinforcement tactics alone are not sufficient unless they stimulate motivational processes. This explanation is congruent with current theories of learning and motivation, especially Self-Determination Theory (SDT) and Social Cognitive Theory, which emphasize the importance of motivation in transforming environmental inputs into lasting behavioural results.

Positive reinforcement is known to be a key factor in learning behaviour, but how well it works relies on the learner's psychological state. Deci and Ryan's SDT states that external rewards might serve to promote or hinder intrinsic motivation based on their perceived effect. (Ryan & Deci, 2017) Our results indicate that reinforcement in educational settings does not directly induce learning behaviour but rather through motivation, which serves as the psychological mechanism that converts reinforcement into action. This is in line with Bandura's Social Cognitive Theory, which states that reinforcement affects behaviour indirectly via self-efficacy and motivating beliefs. (Laila Hijriyah et al., 2024)

The results of this research also provide supporting evidence according to Pavlov's theory that motivation acts as a reward in positive reinforcement and learning behaviour. In another theory, B.F. Skinner produced a theory of operant conditioning that defines that the reinforcement that is delivered after the behaviour is performed strengthens the behaviour. (McLaren, 2024) Vygotsky explained through his theory that rewards do motivate students to continue learning. This helps a student to have a positive self-image. Adding an extra amount of support helps students to complete their tasks in a better way and boosts the ego of an individual just through praise. (Jawad et al., 2021) The Awards include certificates, scholarships, and prizes. Praise always plays a positive role in pushing the individual for better performance as a student. (Xiao Yuhe, 2025)

Furthermore, research by Li et al. (2024) explored the mediating role of intention in learning behaviour, revealing that students' attitudes and self-efficacy significantly influence learning outcomes through their intention to learn. Our study extends this understanding by demonstrating that motivation, as a form of internal drive, mediates the relationship between positive reinforcement and learning behaviour, thereby enhancing learning outcomes. (Li et al., 2024)

The moderate connections between reinforcement, motivation and learning behaviour depicted in our study underline that reinforcement is not a deterministic element. Rather, it offers indications that are interpreted by learners using motivational frameworks. This perspective is consistent with recent empirical work indicating that reinforcement tactics are more effective when they promote autonomy and competence rather than obedience. (Schunk & DiBenedetto, 2020)

Although the statistical significance of mediation is obvious, the correlation coefficients are rather small (varying from 0.239 to 0.389), suggesting that motivation accounts for some, but not all, of the variance in learning behaviour. This shows that other variables, such as self-regulation, peer influence, or institutional support, may also have a mediating or moderating effect. Recent research, for instance, emphasises the role of metacognitive techniques in maintaining learning behaviour after reward. (Zimmermann & de Araújo, 2024) Motivation is therefore a key mediator but has to be seen as one factor in a constellation of psychological and contextual factors.

The findings of this study have consequences for educational practices that should be taken into account throughout instruction. Commendation can serve as an effective positive reinforcement approach. Research suggests that praise is a useful method to encourage desirable behaviours and improve students' learning within the context of operant conditioning. The instructor can impact the learning environment by rewarding or punishing certain behaviours in the classroom. (Sidin, 2021) Behaviour-Precise Praise (BSP) is a positive reinforcement method that claims that students can only value praise that is specific and can assist them in acknowledging their efforts and results while also encouraging them to engage in task-relevant behaviour. (Pérez et al., 2023) Praise from a teacher is used as a social reinforcement approach and a positive behavioural intervention to motivate pupils, especially those who are suffering from low self-efficacy. In the classroom, opportunities to respond (OTR) and praise are commonly employed as preventative measures to lessen disruptive behaviour and encourage positive behaviour. Students gain from having the opportunity to express their concerns in response. (Alzahrani, 2021)

Feedback serves as a crucial positive reinforcement strategy for addressing disruptive behaviour. Students with low efficacy can benefit from prompt, comprehensive, and critical feedback as a kind of positive reinforcement. It also diminishes the frequency of disruptive behaviour situations in the classroom. (Hasanah et al., 2024) The culture of self-regulated learning is fostered by task-specific feedback to the learner. Feedback's usefulness as a reinforcement method immediately following an action or task allows for self-reflection and identification of strengths and deficiencies. (Kutasi, 2023)

Additionally, research by Bashir et al. (2020) examined the effects of positive reinforcement on learners' behaviour in an English as a Second Language (ESL) context. Their results indicated that positive reinforcement, coupled with performance feedback, significantly improved learners' academic performance and behaviour. (Bashir et al., 2020)

Various classroom management tactics may be employed to mitigate disruptive behaviour. Several Skinnerian instructional design-based classroom management methods are available, including the Classroom-wide Function-related Intervention Teams (CWFIT) approach, which utilises structured reinforcement contingencies. (Luo, 2024) A pre-correction method is a classroom management strategy that involves identifying expected behaviours and modifying the learning environment to facilitate those behaviours. Students receive significant incentives to participate in the preferred activity. (Meran et al., 2025)

Educators must also receive training to manage problematic behaviour in the classroom. A behaviourist approach is a teacher-centred strategy wherein the educator modifies the environment to impact the student's cognitive, emotional, and motivational growth. (Anwar et al., 2024) A positive motivation to accomplish the intended goal behaviour can be developed in pupils through appropriate role modelling. To cause a change, teachers should be trained through seminars that showcase success stories in personal and professional development to bring a change in their behaviour as well. (Hayes et al., 2024)

Although there are merits to this study, there are several limitations that must be considered. Self-report measurements may be biased as participants may overestimate their motivation or learning behaviour. Longitudinal designs and experimental manipulations of reinforcement may provide better causal evidence. The interaction between reinforcement and motivation may also be affected by cultural factors. The concept that social reinforcement may be more important

than individual rewards in collectivist situations is validated by recent cross-cultural studies. (Chen et al., 2014)

Another significant matter is the demographic features of the sample. Participants were mostly young adults in bachelor's programs, which may restrict generalisability. In this population, motivation is often influenced by job goals and societal pressures, which may increase the mediating impact. Studies of older persons or non-traditional learners imply that motivation may work differently, with reinforcement perhaps playing a more direct role. (Richardson et al., 2012) Thus, other studies on different groups should be conducted to confirm the generalizability of these results.

Future studies should study the interaction between forms of motivation (intrinsic vs extrinsic) and their distinct mediating effects. We can reasonably assume that reinforcement mediates more intrinsic motivation in the academic situation and more extrinsic incentive in the context of professional learning. Getting a grasp on these distinctions might improve the means of reinforcement in several disciplines.

### Conclusion

Current research reveals the importance of positive reinforcement and motivation on the learning behaviour of individuals. The results demonstrate a significant relation between all three variables: positive reinforcement, motivation and learning behaviour and prove that motivation acts as a mediator between positive reinforcement and learning behaviour.

### Conflict of Interest

None to declare

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