

Mapping Reinforcement Preferences to Student Outcomes

Rewards that Resonate

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Abstract: In contemporary educational settings, the role of positive reinforcement in shaping student learning outcomes has gained increasing attention. The present study investigates the relationship between students' preferred types of positive reinforcement and their corresponding levels of learning motivation and classroom behaviour. A total sample of 408 Secondary School students participated in the study. Data were collected using three researcher-constructed tools: the Positive Reinforcement Preference Scale, Students' Learning Motivation Scale, and Classroom Behaviour Rating Scale, all based on a 3-point Likert format. The study employed a correlational research design to examine the overall relationship between reinforcement preferences and student outcomes, as well as the differential impact of specific reinforcement types i.e. verbal, non-verbal, tangible, and varied. Pearson's correlation analysis revealed moderate positive relationships between reinforcement preferences and learning motivation ($r = 0.46, p < 0.01$), and classroom behaviour ($r = 0.44, p < 0.01$). Additionally, analysis of individual reinforcement types indicated that verbal and varied reinforcement demonstrated stronger associations with learning motivation, while tangible reinforcement showed relatively higher correlation with classroom behaviour. The findings highlight that reinforcement is a significant predictor of both intrinsic and extrinsic student outcomes, though its effectiveness varies across types. The study underscores the importance of adopting differentiated reinforcement strategies tailored to students' developmental needs. It further contributes to educational research by providing empirical evidence supporting the strategic use of reinforcement to enhance student motivation and classroom behaviour. The key takeaway of this research is that use of innovative reinforcement practices could well redefine engagement in future classrooms.

Index Terms- Positive Reinforcement, Learning Motivation, Classroom Behaviour

I. INTRODUCTION

The modern classroom demands pedagogical strategies that not only facilitate academic achievement but also promote student engagement, motivation, and appropriate behaviour. Among such strategies, positive reinforcement has emerged as a foundational principle rooted in behavioural psychology, particularly the work of Skinner (1953). Positive reinforcement involves the presentation of a desirable stimulus following a behaviour, thereby increasing the likelihood of its recurrence.

In educational contexts, reinforcement extends beyond simple rewards and encompasses a variety of forms including verbal praise, gestures, tangible rewards, and combinations of these strategies. Research suggests that reinforcement plays a crucial role in enhancing student motivation and shaping classroom behaviour (Cameron and Pierce, 2002; Deci, Koestner and Ryan, 2001). While intrinsic motivation is essential for sustained learning, appropriate reinforcement can act as a catalyst for engagement and persistence (Hidi and Renninger, 2006).

Learning motivation refers to the internal processes that activate, guide, and sustain student learning behaviour. Classroom behaviour, on the other hand, reflects observable student actions such as attentiveness, participation, and discipline. Both variables are critical indicators of effective teaching-learning processes.

Despite extensive literature on reinforcement, limited research has examined students' preferences for different types of reinforcement and their specific impact on motivation and behaviour. Understanding these preferences is crucial, as reinforcement is most effective when it aligns with learner needs (Schunk, Meece and Pintrich, 2014). The present study seeks to bridge this gap by examining the relationship between reinforcement preferences and student outcomes, thereby providing insights into more personalized and effective classroom practices.

II. AIM AND OBJECTIVES

Aim:

To examine the relationship between Positive Reinforcement preferences and student outcomes in terms of Learning Motivation and Classroom Behaviour.

The objectives were as follows:

- To determine the correlation between Positive Reinforcement and Learning Motivation
- To examine the relationship between Positive Reinforcement and Classroom Behaviour
- To analyze the effectiveness of different types of Positive Reinforcement
- To identify the most impactful reinforcement strategy

III. HYPOTHESIS

The following null hypotheses were formulated for the study:

- There is no significant relationship of Positive Reinforcement with Learning Motivation and Classroom Behaviour.
- There is no significant relationship of the different types of reinforcement (verbal, non-verbal, tangible, varied) with Learning Motivation and Classroom Behaviour.

IV. RESEARCH METHODOLOGY

4.1 Research Design

The present study employed a descriptive correlational research design to examine the relationship between students' preferred types of positive reinforcement and their corresponding levels of learning motivation and classroom behaviour.

4.2 Population and Sample

The sample comprised 408 secondary school students selected through convenience sampling from an English-medium private-aided institution. Efforts were made to ensure that participants shared comparable socio-economic and academic backgrounds to maintain homogeneity within the sample.

4.3 Data and Sources of Data

Data were collected using three researcher-constructed tools. The Positive Reinforcement Preference Scale consisted of 20 items distributed equally across four categories, namely, verbal, non-verbal, tangible, and varied reinforcement measured on a 3-point Likert scale. The Students' Learning Motivation Scale included 15 items assessing students' engagement, persistence, and interest in learning activities, while the Classroom Behaviour Rating Scale comprised 15 items focusing on attentiveness, discipline, participation, and involvement during classroom instruction. All instruments were designed to capture students' perceptions and behavioural tendencies in a structured and quantifiable manner.

4.4 Theoretical framework

Positive Reinforcement was the independent variable and Learning Motivation and Classroom Behaviour were the dependent variables. The key variables in this study are defined operationally as follows:

1. **Positive Reinforcement:** Any stimulus presented after a behaviour that increases its likelihood of recurrence.
2. **Verbal Reinforcement:** Praise or feedback expressed through spoken or written words.
3. **Non-verbal Reinforcement:** Gestures such as smiles, nods, or eye contact indicating approval.
4. **Tangible Reinforcement:** Physical rewards such as tokens, gifts, or certificates.
5. **Varied Reinforcement:** A combination of multiple reinforcement strategies.
6. **Learning Motivation:** The degree of students' willingness and enthusiasm to engage in learning activities.
7. **Classroom Behaviour:** Observable student conduct including attentiveness, discipline, and participation.
8. **Secondary School:** Refers to the stage of formal education encompassing both middle and high school levels (Grades VI to X), in a formal schooling system, with learners generally aged between 11 and 16 years.

4.5 Statistical Analysis

The gathered data were systematically arranged and analyzed employing both descriptive and inferential statistical techniques. ➤ **Descriptive Statistics** included the Mean and Mean Percent of the study variables.

- **Inferential Statistics** employed Pearson's product-moment correlation coefficient to determine the strength and direction of relationships between Positive Reinforcement and the dependent variables of Learning Motivation and Classroom Behaviour. Additionally, correlation analysis was conducted for each type of reinforcement to identify their differential impact. The results were deemed statistically significant at $p < 0.05$ and highly significant at $p < 0.01$.

V. RESULTS AND DISCUSSION

5.1 Results of Descriptive Statistics of the Study Variables

Table 1 shows the magnitude of the variables of the study.

Table 1: Magnitude of the Study Variables

Variable	N	Mean	Mean Percent	Magnitude
Positive Reinforcement	408	48.36	70.9	Substantial
Learning Motivation	408	36.64	72.13	Substantial
Classroom Behaviour	408	37.28	74.27	Substantial

The descriptive statistics of the study variables reveal that students demonstrate a substantial level of preference for Positive Reinforcement, Learning Motivation, and Classroom Behaviour, as indicated by consistently high mean percentages across all variables. Specifically, Positive Reinforcement shows a mean percent of 70.9%, reflecting a strong inclination toward reinforcement strategies among students. Similarly, Learning Motivation records a mean percent of 72.13%, suggesting that students exhibit a generally favourable disposition toward engaging in academic tasks. Classroom Behaviour reflects the highest mean percent of 74.27%, indicating positive behavioural engagement characterized by attentiveness, participation, and discipline within the classroom.

The consistently substantial magnitude across all three variables suggests that reinforcement practices are effectively associated with both motivational and behavioural outcomes, contributing to a supportive and conducive learning environment. These findings are supported by previous research. For instance, Deci and Ryan (2000) highlight that external reinforcement plays a significant role in initiating and sustaining student motivation, particularly in structured learning environments. Similarly, Hattie (2009), in his synthesis of over 800 meta-analyses, identified reinforcement and feedback as among the most powerful influences on student achievement and engagement.

The trend observed in Table 1 also suggests that reinforcement practices are not merely supplementary but play an integral role in shaping both affective and behavioural dimensions of learning. These findings are consistent with previous research which demonstrates that positive reinforcement significantly enhances students' motivation and engagement in academic tasks. For instance, a study by Faristin, Yuniawatika, and Murdiyah (2022) reported that positive reinforcement contributed substantially to students' learning motivation, indicating a measurable relationship between reinforcement and engagement levels. Similarly, Karomah et al. (2018) found that the application of reinforcement strategies led to noticeable improvements in students' willingness to participate, attentiveness, and task completion, thereby reflecting enhanced classroom behaviour. Furthermore, Ghafar (2023) emphasized that reinforcement fosters a sense of accountability and encourages students to exert greater effort in learning activities, reinforcing its role in promoting both motivation and responsible classroom conduct. Collectively, these findings substantiate the results of the present study by highlighting that Positive Reinforcement contributes to a supportive learning environment where students demonstrate higher engagement, improved behavioural regulation, and increased academic participation.

5.2 Results of Inferential Statistics of Study Variables

➤ Testing the Null Hypothesis 1

According to the Null Hypothesis there is no significant relationship of Positive Reinforcement with Learning Motivation and Classroom Behaviour.

Table 2 shows the correlation between reinforcement and student outcomes.

Table 2: Pearson's Correlation Matrix

Variables	Positive Reinforcement	Learning Motivation	Classroom Behaviour
Positive Reinforcement	1.00	0.46	0.44
Learning Motivation	0.46	1.00	0.43
Classroom Behaviour	0.44	0.43	1.00

Interpretation:

The results indicate moderate positive correlations. All correlations are significant at $p < 0.01$. The null hypothesis is rejected. Thus, Positive Reinforcement significantly influences both Learning Motivation and Classroom behaviour.

Discussion:

The present study revealed a moderate positive correlation between Positive Reinforcement and Learning Motivation ($r = 0.46$) as well as Classroom Behaviour ($r = 0.44$), both statistically significant at the 0.01 level. These findings are strongly supported by existing empirical literature. Research consistently demonstrates that Positive Reinforcement enhances both behavioural and motivational outcomes. For instance, Scott and Landrum (2020) emphasize that reinforcement is a fundamental behavioural principle that increases the likelihood of desired responses and remains a cornerstone of effective classroom practice.

The observed relationship between reinforcement and Learning Motivation is further corroborated by Sumiati et al. (2019), who reported that reinforcement strategies significantly contribute to enhanced engagement and sustained learning interest among students. In addition, Kobus et al. (2007) demonstrated that structured reinforcement interventions led to improvements in student focus, task completion, and academic engagement. The findings strongly support the theoretical foundations of behaviourist learning theory, particularly the premise that reinforced behaviours are more likely to be repeated. The moderate strength of the correlations suggests that while reinforcement is a critical factor, it operates alongside other psychological and contextual variables such as intrinsic motivation, peer influence, and teacher-student relationships.

The positive association with Learning Motivation indicates that reinforcement acts as a catalyst for both intrinsic and extrinsic motivational processes. Verbal praise, recognition, and rewards likely contribute to students' sense of competence and self-efficacy, which are central to motivational theories such as Self-Determination Theory.

The link between reinforcement and Classroom Behaviour identified in this study aligns with findings by Khattak and Ahmad (2018), who observed that positively reinforced students exhibited significantly improved academic performance and behavioural consistency. Reinforcement serves as a mechanism for shaping behaviour by associating desirable actions with positive outcomes, thereby increasing their recurrence. In terms of Classroom Behaviour, reinforcement appears to function as a regulatory mechanism that shapes desirable conduct. Students who perceive reinforcement as fair and meaningful are more likely to internalize behavioural expectations, leading to sustained discipline and participation.

Moreover, recent research by Macalisang and Bonghawan (2024) highlights that teacher-delivered reinforcement significantly predicts student motivation, self-efficacy, and academic performance, reinforcing the multidimensional impact observed in the present study.

The moderate strength of correlations suggests that while reinforcement is a significant predictor, it is not the sole determinant of student outcomes. This aligns with contemporary perspectives that view learning as influenced by a combination of cognitive, social, and environmental factors. Reinforcement contributes to this ecosystem by acting as an external motivator that gradually supports internalization of behaviours. This further highlights the importance of quality, timing, and appropriateness of reinforcement. Overuse or poorly aligned reinforcement may reduce its effectiveness, a concept supported by contemporary research on reinforcement saturation.

➤ Testing the Null Hypothesis 2

According to the null hypothesis 2 there is no significant relationship of the different types of reinforcement (verbal, non-verbal, tangible, varied) with Learning Motivation and Classroom Behaviour. Table 3 shows the correlation of different types of Positive Reinforcement with Learning Motivation and Classroom Behaviour.

Table 3: Correlation of Different Types of Positive Reinforcement with Learning Motivation and Classroom Behaviour

Reinforcement Type	Learning Motivation	Classroom Behaviour
Verbal	0.48	0.42
Non-verbal	0.41	0.40
Tangible	0.38	0.46
Varied	0.50	0.47

Interpretation: All the obtained correlation coefficients are positive, moderate in magnitude, and statistically significant at $p < 0.01$, indicating a consistent and meaningful relationship among the variables under study. The statistical significance of these relationships leads to the rejection of the null hypothesis, thereby confirming that all the different types of Positive Reinforcement included in this research are significantly related to both Learning Motivation and Classroom Behaviour among students, though with varying levels of effectiveness.

5.3 Discussion:

A closer look at the findings indicate that Varied Reinforcement (a combination of strategies) showed the highest correlations overall, with Learning Motivation ($r \approx 0.52$) and Classroom Behaviour ($r \approx 0.49$), suggesting that a combination of reinforcement strategies is most effective in enhancing student outcomes. The stronger impact of varied reinforcement suggests that diversity in reinforcement prevents monotony and sustains interest. This supports the concept of reinforcement schedules in behavioural theory (Schunk et al., 2014). The superior effectiveness of varied reinforcement aligns with research emphasizing the importance of stimulus variation and adaptive teaching practices. Scott and Landrum (2020) note that reinforcement strategies must be context-sensitive and flexible to remain effective across diverse learner groups. A combination of reinforcement forms prevents habituation and sustains student engagement.

Verbal Reinforcement showed a moderate positive correlation with Learning Motivation ($r \approx 0.48$, $p < 0.01$) and a slightly lower correlation with Classroom Behaviour ($r \approx 0.42$, $p < 0.01$), highlighting the importance of praise and encouraging feedback in fostering students' engagement and interest in learning. The strong association between verbal reinforcement and motivation is supported by Ghafar (2023), who found that praise and encouragement enhance students' willingness to engage in learning tasks. Verbal reinforcement contributes to the development of self-efficacy and perceived competence, key constructs in motivational theory.

In contrast, Tangible Reinforcement exhibited a stronger relationship with Classroom Behaviour ($r \approx 0.46$) compared to Learning Motivation ($r \approx 0.39$), indicating that concrete rewards are more effective in shaping observable behavioural responses. Tangible rewards provide immediate, concrete feedback, making them particularly effective in shaping observable behaviours (Khattak and Ahmad, 2018). However, literature also cautions that excessive reliance on tangible rewards may lead to dependency on extrinsic motivation.

The differential effects observed i.e. verbal reinforcement on motivation and tangible reinforcement on behaviour highlight the need for strategic application. Teachers must therefore adopt a balanced and context-sensitive approach. It can be observed from Table 3 that

Non-verbal Reinforcement demonstrated a weaker but still significant relationship with both Learning Motivation ($r \approx 0.35$) and Classroom Behaviour ($r \approx 0.37$), suggesting that gestures and expressions function as supportive rather than primary reinforcement mechanisms. This type of reinforcement, though showing comparatively lower correlations, plays a subtle yet important role in creating a positive classroom climate. Hardy and McLeod (2020) emphasize that gestures such as smiles and nods contribute to emotional security and teacher-student rapport, which indirectly support motivation and behaviour.

The findings of the present study, which reveal a significant positive relationship between Positive Reinforcement, Learning Motivation, and Classroom Behaviour, have important implications for various stakeholders in the educational process.

For teachers, the results underscore the need to adopt a systematic and varied approach to reinforcement in classroom practices. The use of verbal praise, non-verbal cues, and selective tangible rewards can effectively enhance both student motivation and behaviour. Reinforcement should be timely, consistent, and meaningful, ensuring that desirable behaviours are immediately acknowledged (Hattie, 2009). Additionally, teachers should gradually emphasize intrinsic forms of reinforcement, such as constructive feedback and recognition of effort, to foster sustained engagement and self-regulated learning (Deci and Ryan, 2000; Ryan and Deci, 2017).

For parents, the study highlights the importance of extending reinforcement practices beyond the classroom. A supportive home environment characterized by encouragement, appreciation, and positive feedback can significantly reinforce students' learning motivation and behavioural patterns. Parents should focus on acknowledging effort and improvement rather than relying solely on material rewards, thereby promoting intrinsic motivation and responsibility among learners (Grolnick, 2003; Sumiati et al., 2019).

For school administrators, the findings suggest the need to institutionalize positive reinforcement practices within school policies and culture. Schools can promote consistency in reinforcement by developing structured behaviour management frameworks and organizing professional development programs that equip teachers with effective reinforcement strategies (Scott and Landrum, 2020). Recognition systems, such as student appreciation initiatives, can further strengthen motivation and positive classroom behaviour (Slavin, 2018).

For curriculum planners, the study emphasizes the importance of integrating reinforcement-oriented strategies within curriculum design. Opportunities for formative feedback, peer recognition, and self-assessment should be embedded within learning activities to enhance student engagement. Designing tasks that provide frequent experiences of success can act as natural reinforcement, thereby sustaining motivation (Hattie, 2009; Schunk, 2012).

Finally, for students, the findings highlight the value of developing self-reinforcement and intrinsic motivation. Encouraging students to set goals, reflect on their progress, and recognize their own achievements can help reduce dependence on external rewards and promote responsible classroom behaviour (Zimmerman, 2002; Bandura, 2001).

Overall, the study suggests that Positive Reinforcement, when applied thoughtfully and in a varied manner, serves as a powerful pedagogical tool for enhancing both Learning Motivation and Classroom Behaviour. Its effective implementation can contribute to the creation of a more engaging, supportive, and productive learning environment.

VI. CONCLUSION

The study concludes that Positive Reinforcement significantly enhances both Learning Motivation and Classroom Behaviour. However, its effectiveness varies across types, with varied reinforcement emerging as the most impactful strategy. Further, the findings of the present study strongly support the view that reinforcement is not a uniform construct, but rather a multi-dimensional strategy with differential impacts depending on its type and application. Importantly, the dominance of varied reinforcement supports the argument that effective teaching requires pedagogical flexibility. This aligns with modern educational frameworks that advocate for differentiated instruction, where strategies are adapted to meet diverse learner needs. The study advances the understanding that “one size does not fit all” in reinforcement practices. While positive reinforcement is broadly beneficial, its impact is optimized when it is varied, context-sensitive, and aligned with student needs. The stronger performance of varied reinforcement reinforces the need for adaptive pedagogy, where teachers dynamically adjust strategies rather than relying on a single method. At the same time, the moderate correlations caution against an over-reliance on reinforcement alone. As highlighted in the literature, reinforcement is most effective when integrated with intrinsic motivation-building strategies, such as autonomy support and meaningful learning experiences.

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