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Abstract: *The aim of this study was to investigate the application of behaviourist theory in classroom instructions, focusing on effectiveness and challenges. Data were collected from public school teachers in Sargodha, Pakistan, using a mixed-method approach. The data analysis highlighted that the majority of teachers are familiar with Classical and Operant Conditioning principles. The findings indicated that behaviourist strategies such as token economies, behaviour contracts, and reinforcement are effective in managing classroom behaviour, improving student engagement and enhancing student academic performance. However, challenges such as inadequate teacher training, extrinsic and intrinsic motivation balancing, and consistency in implementation were noted. Recommendations include improved teacher training, clear behavioural expectations, and increased administrative support to optimize the use of behaviourist strategies in classroom instructions.*

Key Words: Behaviorist Principles, Behaviorist Strategies, Challenges

Introduction

Education is a dynamic field as scholars and practitioners strive to develop better methods of enhancing teaching strategies and learning achievements. Behaviourist theory is one of the most prominent theories that remain relevant when it comes to defining educational practices. Based on the belief that all behaviour is acquired through conditioning, behaviourist theory includes two basic principles: behavioural theory, namely, the process of classical conditioning suggested by Ivan Pavlov and Burrhus Frederic Skinner (Pavlov, 1927; Skinner, 1938; Akpan, 2020). Most of these principles are applied in school settings in an attempt to regulate the students' behaviour in class to enhance their attention and, consequently, their performance (Hadi et al., 2023). It was actually pioneered by Ivan Pavlov. This theory is categorized under classical conditioning, and it refers to learning, which occurs when an innate stimulus is followed by an arbitrary stimulus in the hopes of resulting in a conditioned response. This principle has been found useful in class to maintain order, rules, and regulations since students appreciate orderliness within the class. For instance, raising and pointing facilitate the transition from one class to another and decrease disruptive student behaviours, as well as classroom management (Darch and Kame'enui, 2004; Terry, 2017).

While the former is based on the premise of cognitive behavioural therapy, the latter is based on animal training with the help of rewards and punishments. Many of Skinner's principles in operant conditioning, for example, the use of token economics and positive reinforcements, are well adapted to prescribe and support model student behaviours. It has been established that the use of token economies leads to the enhancement of classroom conduct and learning outcomes (Maggin et al., 2011; Malott & Kohler, 2002). The study by Cameron and Pierce (2002) has shown that by motivating students through positive consequences such as praise and reward, the motivation level and the performance of students are improved. A study postulated that integrating elements of the traditional theory of classical conditioning and the theory of operant conditioning is an effective way of reforming a classroom. The studies that were

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conducted in the past few years showed that applying consistent routines together with reinforcement strategies enhances the outcomes of behavioural skills in educational environments (Simonsen et al., 2008). This integration of all these aspects forwards behaviour management as well as the kind of learning environment that is being sought in the classroom.

This study examined the application of behavioural theory to classroom teaching reform and explored the effectiveness, challenges, and practical applications of behaviourist principles, examined the use of classical conditioning and operant conditioning in educational settings and provided educators with insights and recommendations that will enable them to improve teaching practices and improve student outcomes.

Literature Review

Behaviour theory in education has consistently been the foundation for the strategies of teaching and their changes. The works of Skinner have greatly influenced the steps of behaviourism through passing by; the methods of teaching and learning have changed a lot (Slocum, 2014; Watson, 2013). These basic theories have laid the groundwork for a number of applications within the context of the classroom, particularly classical conditioning. Mackintosh's (2003) principles of associative learning, or classical conditioning, as well as the law of effect or trial and error learning, have been the strong foundation for supporting educational practices and intervention in the real setting (Nelson, 2008; Frese, & Keith, 2015; Martin, & Pear, 2019). Operant conditioning, which is also a part of behaviour theory, deals with the use of reinforcement mechanisms to foster appropriate behaviours. According to Bandura, social learning theory has greatly offered educators a solid understanding that could help to improve learning outcomes, while Skinner's ideas on reinforcement have availed themselves of a backbone that supports learning (Stanley et al., 2020). However, punishment, a technique of behaviour modification, as described by Pokorski and Barton (2021) & Papageorgi (2021), remains debatable due to its perceived unethical nature and diverse impacts on students. As illustrated by Maggin et al. (2011) in the instructional context, behaviour modification includes token economies and reward systems, all of which, when used, are effective in encouraging positive behaviours. Moreover, as for the differentiation and linking approaches discussed by Van Merriënboer & Kirschner (2017) as well as by McGrath (2011), they are highly important for the development of new and increasingly complex skills, as they enable a gradual acquisition of new knowledge and skills. Applying behaviourist approaches in learning environments is accompanied by a rather complex set of issues that have to do with educators and policymakers. The first area of potential concern is the issue of ethics, especially in the use of behaviour modification. Some scholars, for instance, Marinda and Suhardi (2020), advocated that the reinforcement theory suggests that the use of extrinsic incentives to control students' behaviour is counterproductive and may reduce intrinsic motivation and self-direction. Castleman et al. (2018) also raised doubts about whether the mentioned strategies should be employed in the long run due to the impacts they might have on the learner's self-esteem and inherent curiosity. Another complex factor is the differentiation among children enrolled in classes. Weiss et al. (2021) have pointed out that behaviourism may not recognise the learning and learner's individual background; therefore, it may cause inequitable learning results. This is made worse by culture since Heimlich & Ardoin (2008) stress that behaviourism may not fathom cultures, hence the need for culture-sensitive education. Also, the structure of behaviourist techniques is quite controlled, which makes the treatments less compatible with the naturally chaotic environment of a classroom. The educational environment and students' interactions make a classroom rather unstable, and thus, it cannot be assured that the principle of behaviourism, with a strict 'distinct action – distinct reaction' correlation, will function appropriately (Graham, 2018). This is valid in the context of the evidence presented by Yasar (2019), which presents a depiction of punishment effectiveness whereby, positively, punishment has variable effects on the student's behaviour and responses.

Issues are also present in behaviourist approaches to the use of technology as well. As well as being useful to increase students' interest, digital reinforcement systems and gamification can be problematic because of the time students spend in front of screens, the violation of their privacy, and because technology can distract from learning instead of helping (Dichev, Dicheva, 2017; Christopoulos, & Mystakidis, 2023).

Such issues are investigated by Ding (2019) to try to find the positive sides of technological progress at the same time, paying attention to the negative impacts. Behaviourist strategies require effective practice in the pre-service or in-service preparation of teachers. Teachers need to be well-trained in how to utilize behaviourist approaches. This implies professional learning support and growth to allow teachers to apply such general practices to their specific class environments and make respective improvements based on the research studies and technologies (Reupert & Woodcock, 2010; Wang & Ha, 2013; O'Neill & Stephenson, 2014).

It is evident that with the use of behaviourist approaches, various issues are realized, which have affected its implementation in education. Professional and ethical issues, diversity and cultural differences, social interactions in a classroom, introduction of technology, and adequate teacher training are some of the issues that need to be taken into account to promote the use of behaviourist strategies that can benefit students' learning and outcomes (Sari, 2020; Olson-Sawyer, 2022; Aydın, 2024). Incorporation of behaviour theory with other learning theories brings a better view or approach to learning (Dilshad, 2017). Cognitive-behavioural strategies combine ideas, plans and actions, which are internal processes, with the observable actions of the learner. Also, the link to the social learning theory analyzed the significance of social processes in learning (Davis et al., 2017; Ruggiero et al., 2018; Mangantes, 2021). The current advances in technology have brought new horizons to behaviour theory in the contemporary class. The current technologies of promoting and supporting digital verbal behaviour, described in the paper by Ding (2019), as well as the elements of game design mentioned by Doumanis et al. (2019), depict the changes in educational technology. Thus, when synthesis is done, one gets an understanding that literature is rooted in research and practice of behaviour theory application in education. Some of the significant outcomes point out the revolutionary application of these theories. However, future studies will build on including behaviourist theories to current trends in the process of education and learning technologies (Valverde-Berrocoso et al., 2020; Bernacki, 2020; Gros and García-Peñalvo, 2023). Despite the brief discussion, the review gives a general idea of the current state of behaviour theory in education and how it is important in determining the future of instruction (Khalil & Elkhider, 2016; Ryan & Deci, 2020).

Methodology

In this study, a mixed-methods approach was used to examine the application of behaviourist theory in classroom education reform, combining quantitative and qualitative data to provide a comprehensive analysis of the effectiveness and challenges of behaviourist strategies in an educational context. Public school teachers from the Sargodha district (Punjab, Pakistan) comprised the study population. Data were collected from the participants through a random sampling technique so as to establish the broad whereby the sample is representative of the population. For quantitative data, a self-developed structure (from literature review) questionnaire was used, while qualitative data was collected through open-ended questions. The quantitative data were analyzed through statistical methods, while qualitative data were analyzed through thematic analysis. From this perspective, the paper offers a better understanding of the principles of behaviourism when implemented in an educational setting and offers concrete recommendations concerning educational practice and students.

Results and Data Analysis

Table 1

School category (gender)

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Male	89	60.5	60.5	60.5
	Female	58	39.5	39.5	100.0
	Total	147	100.0	100.0	

Table 1 shows the analysis of the gender of the school category. 60.5% of male teachers responded, and 39.5% of female teachers responded.

**Table 2**

Familiar with the behaviourist principles of classical conditioning (e.g., Pavlov's experiments)

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Very Familiar	43	29.3	29.3
	Familiar	70	47.6	76.9
	Somewhat Familiar	18	12.2	89.1
	Not Familiar	16	10.8	100.0
	Total	147	100.0	100.0

Table 2 shows the analysis of classical conditioning (e.g., Pavlov's experiments) of behaviour principle. 77% of teachers agreed that they are very familiar with the behaviourist principle of classical conditioning. 12.2% of teachers opined that they are somewhat familiar with behaviourist principles, while the other 10.9% of teachers showed that they were not familiar with Pavlov's experiment of behaviour principles.

Table 3

Operant conditioning (e.g., skinner's reinforcement theory)

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Very Familiar	40	27.2	27.2
	Familiar	67	45.6	72.8
	Somewhat Familiar	33	22.4	95.2
	Not Familiar	7	4.8	100.0
	Total	147	100.0	100.0

Table 3 shows the analysis of operant conditioning of behaviour principle. 72.8% of teachers agreed that they are very familiar with the behaviourist principle of classical conditioning. 22.4% of teachers opined that they are somewhat familiar with behaviourist principles, while 4.8% of teachers showed that they are not familiar with the Skinner experiment of behaviour principle.

Table 4

Behaviorist strategies

		Responses		Percent of Cases
		N	Percent	
Behaviorist strategies in the classroom	Token Economies	49	18.4%	34.0%
	Behavior Contracts	62	23.2%	43.1%
	Positive Reinforcement	40	15.0%	27.8%
	Negative Reinforcement	39	14.6%	27.1%
	Punishment	28	10.5%	19.4%
	Classical Conditioning Techniques	49	18.4%	34.0%
Total		267	100.0%	185.4%

Table 4 shows the analysis of teachers' use of behaviourist strategies in the classroom. This was based on multiple responses, and the teacher could choose more than one option. 41.6% of teachers agreed that they use token economies and behaviour contracts as behaviourist strategies in the classroom. 25.1% of teachers opined that they use positive and negative reinforcement as behaviourist strategies in the classroom. 28.9% of teachers opined that they use punishment and classical conditioning techniques as behaviourist strategies in the classroom.

Table 5*Challenges and barriers in implementing behaviorist strategies*

		Responses		Percent of Cases
		N	Percent	
Challenges and Barriers	Lack of Training	61	16.0%	41.5%
	Insufficient Resources	89	23.4%	60.5%
	Resistance from Students	46	12.1%	31.3%
	Resistance from Parents	49	12.9%	33.3%
	Difficulty in maintaining consistency	74	19.4%	50.3%
	Balancing extrinsic and intrinsic motivation	62	16.3%	42.2%
Total		381	100.0%	259.2%

Table 5 shows the analysis of challenges and barriers for teachers to use behaviourist strategies in the classroom. This was a multiple-response question. The 39.4% of teachers agreed that they face challenges and barriers in training and insufficient resources to use behaviourist strategies in the classroom. The 25% of teachers opined that they face challenges and barriers, such as resistance from students and parents, to use behaviourist strategies in the classroom. 35.7% of teachers opined that they face difficulty in maintaining consistency and balancing extrinsic and intrinsic motivation as behaviourist strategies in the classroom.

Table 6*Effectiveness of behaviourist strategies in managing classroom behaviour*

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Very Effective	68	46.3	46.3	46.3
	Effective	67	45.6	45.6	91.8
	Somewhat Effective	11	7.5	7.5	99.3
	Not Effective	1	.7	.7	100.0
	Total	147	100.0	100.0	

Table 6 shows the analysis of the effectiveness of behaviourist strategies in managing classroom behaviour. The teachers were asked about the effectiveness of behaviourist strategies in managing classroom behaviour, and 91.1% of teachers agreed that behaviourist strategies in managing classroom behaviour are very effective. The 7.5% of teachers opined that behaviourist strategies in managing classroom behaviour are somewhat effective, while the other 0.7% of teachers responded that behaviourist strategies in managing classroom behaviour are not effective.

Table 7*Effectiveness of behaviourist strategies in improving student engagement*

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Very Effective	55	37.4	37.4	37.4
	Effective	75	51.0	51.0	88.4
	Somewhat Effective	16	10.9	10.9	99.3
	Not Effective	1	.7	.7	100.0
	Total	147	100.0	100.0	

Table 7 shows the analysis of behaviourist strategies for improving student engagement. 88.4% of teachers agreed that behaviourist strategies in improving student engagement are very effective. 10.9% of teachers opined that behaviourist strategies in improving student engagement are somewhat effective, while the other 0.7% of teachers responded that behaviourist strategies in improving student engagement are not effective.

**Table 8**

Effectiveness behaviourist strategies in enhancing academic performance

	Frequency	Per cent	Valid Percent	Cumulative Percent
Very Effective	56	38.1	38.1	38.1
Effective	71	48.3	48.3	86.4
Valid Somewhat Effective	14	9.5	9.5	95.9
Not Effective	6	4.1	4.1	100.0
Total	147	100.0	100.0	

Table 8 shows the analysis of behaviourist strategies in enhancing academic performance. The 86.4% of teachers agreed that behaviourist strategies in enhancing academic performance are very effective. 9.5% of teachers opined that behaviourist strategies in enhancing academic performance are somewhat effective, while the other 4.1% of teachers responded that behaviourist strategies in enhancing academic performance are not effective.

Thematic Analysis (Themes and Subtheme)

Effectiveness of Behavioral Strategies

Positive reinforcement, contingent classroom contracts, token savings, and behaviour charting are some of the reinforcement techniques that have been known to work very well in class settings. The use of a token economy that often involves issuing tokens that can be used to purchase incentives as a result of the student's positive behaviours helps all the students immediately to be reinforced as well as learn about issues to do with delayed gratification, which is highly motivational. Rewarding students verbally and or with incentives encourages students to work harder and feel better about themselves, and the classroom mood is enhanced. Praise that is specific is useful to students as they are able to know what action has been applauded, hence promoting the right conduct. Contingency agreements of acceptable behaviours in a classroom entitle both the teacher and the learner to proper expectations and encourage the students to pursue a given goal in order to secure a stated reward. Many children like tangible and visible targets, outlined in behaviour charts, as they offer great ways of giving feedback right from the classroom. Altogether, the above-mentioned strategies enhance the effective management of the classroom and the overall environmental conduct.

Implementation Challenges

Although these behavioural strategies are effective, the following are some of the challenges that hinder their implementation. The greatest problem is seen in the poor preparation of teachers who are not knowledgeable enough to ensure the implementation of these strategies. Such professional development is supposed to be done more often and continuously so that the teachers can be in a position to develop proper skills and knowledge. Another challenge is in relation to encouraging good behaviour and use of discipline and ensuring that the two are administered well, fairly and appropriately. This is because teachers usually require direction on how to maintain order in the classroom while at the same time fulfilling the role of counsellors. It is also worth noting that for proper deployment of behavioural approaches, administrative support for such strategies is crucial. This is closely related to offering the kind of support that enables such strategies to be employed consistently all over the school. Solving these issues is crucial to enhancing the effectiveness of behaviourists' principles in education.

Impact on the Classroom Environment

Principles of classical conditioning, like having set routines and signals in a learning setting, assist in establishing orderliness in a classroom setting. This helps to minimize stress levels among students and boosts students' interest in their classes, thus improving the learning environment. While using classical conditioning together with the parts of operant conditioning, including the reinforcement schemes, the teachers will be in a position to boost the effectiveness of the behaviourist type of intervention. This combination does not only increase mannerisms in the class but also boosts performance in class work. Ordinary schools' structured environment, together with the students' clarity of the organizational rules and the acts' penalties, help create a positive learning environment that leads to appropriate behaviour

and academic achievement. By using both classical and operant conditioning together, it offers a holistic method of proactively addressing classroom management issues and instructional reform, culminating in enhanced student learning and achievement.

Improvement Suggestions

Several primary recommendations appear to enhance the application of behaviourist strategies. Clear behavioural codes must be set, and these are then made well understood across the school setting. These expectations are best communicated in classes and other common areas with posters and charts as supporting tools. Teachers need training and professional development in behaviourist approaches and classroom management skills that are required for imparting education. Implementing strategies that promote collaboration among the staff and offering training to share how they have implemented the strategies, as well as their experiences, can add value to the extent to which the strategies will be implemented. Parent support is also crucial; the parents must participate in the behaviour management plan being applied at home so that the child is rewarded for good behaviours practised in school. Also, instructional and organizational procedures for the classroom facilitate students' ability to adhere to behavioural expectations, thus affecting a positive learning environment. Thus, it can be understood that when these strategies are used at school, they can ensure positive and well-ordered social attitudes for the improvement of positive behaviour in students and a rise in learning behaviour among all the students.

Discussion

The application of behaviourist principles to classroom education reforms highlights several important findings from quantitative and qualitative data analyses. The effectiveness of behavioural strategies such as token savings, positive reinforcement, classroom emergency contracts, and behaviour charts has been consistently confirmed in numerous studies. These strategies have shown significant effectiveness in managing classroom behaviour, increasing student engagement, and improving academic performance (Akpan, 2020; Hadi et al., 2023). The quantitative analysis of this study supports the findings, and most teachers reported that they have knowledge and efficiency in applying the classical and operant conditioning principles. In particular, 77% and 72.8% of teachers are familiar with classical conditioning and operant conditioning; they highlighted the well-known knowledge and application of these principles in educational settings.

Behavioural strategies offer prompt rewards and promote the maintenance of explicit behavioural expectations that enable timely control of students' discipline and order, which are attributes of well-ordered classrooms. It takes a systematic way of eliminating nervousness and enhancing students' participation, thus improving the overall learning environment. However, from the thematic analysis, the following implementation problems are identified. Behavioural strategies are not used as effectively as they should be due to inadequate and insufficient teacher training. To address this issue and ensure that these measures enhance the learners' educational experience, professional development and managerial support are crucial and should be consistent. Design high-quality continuing professional development for the training of teachers to meet the teachers' needs in various contexts. Such programs should comprise live and online workshops, lecture-style courses, and peer-working sessions that are devoted to behaviourist approaches. Assume policy supporters of continuous teacher training and readily available material for behaviourist approaches application. This comprises having a budget to facilitate training, carrying out any necessary training and ensuring the best environment for the training is provided. Facilitate procedural/instructional resources (curricular and technological) that support the behaviourist approaches in diverse cultural schools. Also, it emerged from the literature that there is a need to balance extrinsic motivation and its opposite. This problem may be rooted in the fact that the reliance on extrinsic rewards can harm intrinsic motivation and self-regulation and, as a result, decrease students' lasting interest and curiosity (Johnson, 2018; Castleman et al., 2018). These concerns are represented in the study's qualitative findings and point towards the need for balance so as to sustain students' motivation in the classroom. Besides, there are cultural and ethical issues that have to be taken into account, as behavioural intervention plans may not be appropriate for some students from culturally or ethically different origins (Heimlich & Ardoin, 2008; Graham, 2018). Classical and operant conditioning are both integrated into the classroom management system since both are effective in the H-behavioural model. The former is



structured programming, while the latter deals with the effective use of reinforcement. Such usage enhances behavioural and academic performances since the environment created is healthy (Simonsen et al., 2008). However, thematic analysis has revealed that in order to apply these strategies throughout all schools, some schools should be provided with more administrative support and necessary resources to fulfil the standards.

Conclusion and Recommendations

The effectiveness of the behaviourist principles in classroom instructional reform will yield several useful outcomes in the management of learners' misconduct, motivation, and achievement. The strategy of the token economy for behavioural management, positive reinforcement technique, and contingency contracts have been identified to have statistically and qualitatively significant improvements made. However, to strengthen the use of behavioural strategies, it is necessary to discuss some problems, including insufficient preparation of teachers, the proportion of extrinsic and intrinsic motivation, and the need for high administrative support. The following key recommendations were made to enhance the application of behaviourist principles in education. First of all, defining and asserting the appropriate behaviour at different schools is necessary. Posters and classroom charts can remind students and teachers of proper conduct expectations on various matters. Second, there is a requirement of giving professional practice and recurrent training to the teachers and the educators and instructing them on behavioural intervention and classroom management methods are required. Thus, it is also suggested that employee engagement be fostered, wherein employees can discuss the particular strategies they have adopted and the related experiences to strengthen overall implementation. Parent participation is also crucial; parents should be involved in managing the student's behaviour since they will also have to deal with the same behaviour once they are at home. Also, the daily organization of time, as well as maintaining an orderly learning environment and social context, ensures that learners comprehend and respond appropriately to behavioural expectations required for a positive academic environment. By tackling such challenges and targeting modifications as prescribed by research, schools can design learning environments that encourage appropriate conduct and enhance the achievement of intended learner outcomes. Indeed, the above analysis states that the full implementation of behaviourist principles holds a lot of prospects for enhancing the classroom management process and the process of instructional reform, consequently raising student outcomes. Furthermore, future research should be conducted on the long-term impacts of behaviourist strategies on student engagement and motivation, as well as on the integration of behaviourist theories with modern educational technologies and practices.

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