Communicative Reciprocity Theory of Behaviour (CRT-B): A Propositional Framework for Understanding Behaviour in Learners with Hearing and Speech Impairment

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Abstract
This article presents the Communicative Reciprocity Theory of Behaviour (CRT-B) as a new theoretical framework for understanding and analyzing Behaviour among learners with hearing and speech impairments in educational environments. Traditional Behavioural models, including classical and operant conditioning, neo-Behaviourist frameworks, and social learning theory, have emphasized environmental variables, reinforcement, and modeling, while often overlooking the essential function of communication in shaping Behaviour. CRT-B asserts that Behavioural patterns in this population mostly stem from disrupted communicative reciprocity rather than intrinsic deficits. The theory outlines five essential constructs: communicative accessibility, reciprocal recognition, reinforcement alignment, adaptive Behavioural signaling, and environmental responsivity, which together clarify the relational mediation of Behaviour. A sequential Behavioural mechanism is postulated, encompassing communicative disruption, reciprocity breakdown, reinforcement distortion, adaptive signaling, and institutional response. CRT-B has significant educational implications, emphasizing communicative evaluation, modality-appropriate reinforcement, teacher training in semiotic competence, and the significance of sign language and multimodal instruction. The concept is logically grounded in relational anthropology and the ethics of recognition, challenging reductionist Behaviourism. CRT-B is intended to be empirically verifiable and open to discussion, offering a novel framework for research, education, and policy in special education.

Keywords:
Communicative Reciprocity Theory, Behaviour, Learners, Hearing Impairment, Speech Impairment

Introduction

Behaviour in educational settings has traditionally been analyzed through psychological frameworks that emphasize individual characteristics, cognitive abilities, or reinforcement histories (Mehrad, et al., 2024). In special education, particularly for leaners with hearing and speech impairments, Behavioural symptoms such as withdrawal, inattentiveness, impulsivity, or oppositional Behaviour have often been interpreted through deficit-oriented perspectives. Such interpretations frequently ascribe Behavioural anomalies to internal deficits, communicative delays, or socio-emotional immaturity. Although these theories possess some validity, they may obscure the relational and structural contexts that shape, sustain, and interpret Behaviour.

Educational environments are inherently communicative areas. Instruction, education, regulation, evaluation, and peer engagement are facilitated through language and symbolic communication. For those with hearing and speech impairments, access to communicative processes is essential to participation. When communicative systems are incompatible with learners' linguistic modalities, Behavioural responses may arise not from inherent dysfunctions but as adaptive reactions to systemic exclusion.

This article introduces the Communicative Reciprocity Theory of Behaviour (CRT-B) as a novel theoretical framework for comprehending Behaviour in learners with

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hearing and speech impairments. The idea posits that Behavioural patterns in this group are significantly influenced by the structure, quality, and reciprocity of communication contexts. Instead of viewing communication as a neutral channel for Behavioural consequences, CRT-B posits communicative accessibility as a fundamental factor in Behavioural development.

The article outlines the theoretical framework of CRT-B, articulates its central premise, defines its underlying structures, and explains its hypothesized Behavioural mechanism. It further analyzes the philosophical foundations of the theory, identifies its intersections with established Behavioural models, and outlines its consequences for educational practice. The paradigm is offered as tentative and receptive to academic scrutiny, empirical verification, and theoretical enhancement.

Theoretical Orientation

The Communicative Reciprocity Theory of Behaviour (CRT-B) is a revolutionary Behavioural framework in special education designed for children with hearing and speech impairments. The theory deliberately opts to deviate from explanations of Behaviour that focus on flaws. The Behavioural patterns of deaf learners are substantially affected by the structure, quality, and reciprocity of communication environments.

CRT-B was founded on three fundamental theoretical foundations. It initially employs Behaviourism, particularly operant training, to demonstrate that Behaviour is shaped by reward contingencies. Behaviour does not exist abstractly; it develops through patterns of reinforcement, correction, and environmental information (Maringanti & Sahu, 2024). Conversely, the CRT-B asserts that a comprehensive knowledge of reinforcement processes is unattainable without prior analysis of the communication contexts in which these conditions are recognized and processed. The notion encompasses social learning methodologies that consider modeling, contextual mediation, and the reciprocal relationship between the individual and the environment. From this viewpoint, Behaviour is shaped not only by direct reinforcement but also by discernible interaction patterns. This is due to the significance of direct reinforcement. A significant correlation exists between the availability of accessible communication models and the Behavioural development of individuals with hearing and speech impairments.

The CRT-B is founded on the concepts of recognition and intersubjectivity, asserting that individuals possess power when they acknowledge each other for the sake of conversation (Ellinor & Girard, 2023). Recognition acts as both a psychological validation and a crucial prerequisite for participation. The learner's agency is limited when communication modalities are disregarded, hence impacting their capacity to express their activities.

In contrast to conventional Behaviourist theories that perceive communication just as a conduit for transmitting stimuli, the CRT-B posits that the accessibility of communication is a fundamental prerequisite for Behavioural evolution. Communication functions not merely as a conduit for the distribution of rewards but also as the framework that imparts meaning, purpose, and social worth to Behaviour.

Core Proposition

The principal assertion of the Communicative Reciprocity Theory of Behaviour (CRT-B) is that the behaviour of learners with hearing and speech impairments is not predominantly a result of internal deficits, but rather a consequence of broken communicative reciprocity in educational settings(Shoko, 2024).

This assertion questions conventional deficit-oriented explanations of Behaviour, which frequently ascribe withdrawal, inattention, impulsivity, or oppositional Behaviour to the learner's handicap. CRT-B asserts that these Behaviours often arise as adaptive responses to communicative asymmetry rather than inherent pathology.

From a Behaviourist standpoint, Behaviour is influenced by environmental circumstances. Ivan Pavlov (1927) illustrated that classical conditioning transpires through stimulus-response association, indicating that Behaviour may be acquired through repeated pairings. Edward L. Thorndike (1898; 1911) formulated the Law of Effect, positing that Behaviours followed by gratifying outcomes are more likely to be repeated. John B. Watson (1913) expanded these concepts in methodological Behaviourism, asserting that observable Behaviour, rather than interior states, should be

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the primary subject of psychological investigation. Subsequently, B. F. Skinner (1938; 1953) systematized operant conditioning, demonstrating that Behaviour is influenced and sustained by reinforcement and punishment in the environment. CRT-B is in line with these traditions since it understands the need of reinforcement. But it goes farther by saying that reinforcement works only if communication is easy to understand (Cairns, 2025). If instructions, corrections, or incentives are given in ways that the learner can't understand, like not using sign language, not using visual aids, or not being part of classroom discussions, the intended reinforcement is not effective. Thus, Behaviours that seem defiant, inattentive, or hostile may actually be adaptive responses to the breakdown of reciprocal communication that are conditioned by the structure of the situation.

The idea also interacts with neo-Behaviourist and social learning frameworks. Clark L. Hull (1943) underscored the interplay between drives and environmental stimuli, whereas Edward C. Tolman (1932; 1948) focused on goal-directed, purposive Behaviour within environmental circumstances. Albert Bandura (1977; 1986) proposed the concepts of social learning and reciprocal determinism, acknowledging that Behaviour is influenced by the interplay of the individual, the environment, and observable models (Umbra & Fasbender, 2025). CRT-B synthesizes these insights, positing that for learners with hearing and speech impairments, communication constitutes the fundamental structural axis of Behavioural formation: in the absence of accessible, reciprocal communication, observational learning, reinforcement, and goal-directed Behaviour cannot function effectively.

Consequently, CRT-B reconceptualizes Behaviour not as an inherent deficiency but as a relational occurrence, arising from the extent to which communicative contexts facilitate reciprocal involvement (Duck & Secklin, 2025). Behaviour is comprehensible solely when contextualized within the learner's communicative ecology, rendering accessibility and recognition as fundamental prerequisites for Behavioural growth.

Communicative Reciprocity Theory of Behaviour scope and limits

For empirical importance, theoretical framework constructs must be observable and measurable. The Communicative Reciprocity Theory of Behaviour (CRT-B) was conceptually described, but researchers and educators needed operational explanation to assess its prevalence, intensity, and influence in education. Operation measures CRT-B's relational and communication processes, not diminishing theoretical depth.

Communicative accessibility is how well students with auditory and speech challenges can participate in instructional communication utilising sign language, visual representations, captioning, written commands, or multimodal pedagogy. The ratio of accessible instructional communication, sign language interpretation or visual scaffolding, and student comprehension in class might quantify this. Classroom observation or accessibility checklists can assess student communication accessibility.

Reciprocal Recognition is when teachers and peers verify a student's sign language, gestures, writing, or other communication. Instructor acknowledgement of student communication, peer involvement in reciprocal connections, and the extent to which learners' communicative modalities are included in classroom discourse might assess this idea. Behavioural observation tools can track learners' communication attempts and feedback ratios.

Behaviour reinforcement like praise, criticism, teaching, and discipline is communicated to students through reinforcement alignment. Sign-supported speech, visual signs, and written feedback reinforcements can be compared. To understand behavioural results, researchers might assess whether reinforcement matches the learner's communicative modality chronologically and linguistically. Students compensate for communication impairments with adaptive behavioural signals. Attention-seeking gestures, exaggerated physical signals, vocal attempts, disengagement, and other communication expressions might re-establish connection or visibility in the classroom. Operational indicators may include behaviour frequency within observation intervals, situational triggers, and limited communication accessibility.

Environmental responsiveness allows instructors, peers, and institutions to modify education, conduct, and communication for

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hearing and speech-impaired students. This concept can be operationalised through inclusive educational policy, teacher experience in visual or signed communication, accessibility to assistive communication resources, and institutional readiness to adapt behavioural management tactics. Environmental responsiveness is measured by institutional adaptation indices, teacher competency evaluations, and structured classroom inclusion.

Foundational Constructs

The Communicative Reciprocity Theory of Behaviour (CRT-B) is based on five interconnected notions that together elucidate how Behaviour is influenced in learners with hearing and speech impairments in educational settings (Mushtaq et al., 2024).

Communicative Accessibility denotes the extent to which learners can comprehensively engage with linguistic and instructional interactions via signed, visual, written, or multimodal mediums (Berrezueta-Guzman et al., 2025). Based on Behaviourist concepts, specifically Skinner's operant conditioning (1938; 1953) and Pavlov's classical conditioning (1927), reinforcement and stimulus-response contingencies are effective solely when stimuli are discernible and comprehensible. In the absence of accessible communication, reinforcement becomes misaligned, leading to Behaviours that may manifest as adaptive signals instead of taught compliance.

Reciprocal Recognition

Reciprocal Recognition refers to the degree to which a learner's style of communication, whether sign language, gestures, or other communication is acknowledged, validated, and seen as legitimate by educators and peers (Mafarja et al., 2023). This construct, informed by theories of intersubjectivity and recognition (Honneth, 1995), situates Behavioural formation within relational contexts. According to Tolman's purposive Behaviourism (1932; 1948) and Bandura's social learning theory (1977; 1986), learners watch and adjust to social cues; if these cues do not acknowledge their communication, their Behavioural expression may transition to adaptive signaling.

Reinforcement Alignment

The term "alignment" denotes the extent to which a learner's communicative abilities correspond with Behavioural standards (Rouffet et al., 2023). Skinner (1938; 1953) posits that reinforcement is effective solely when perceived and understood correctly. Misalignment occurs when directives, sanctions, or incentives are conveyed in formats that are inaccessible. This leads to Behaviours sometimes misconstrued as non-compliance or resistance. CRT-B underscores the necessity for reinforcement strategies to be linguistically coherent to effectively shape the desired Behaviour.

Adaptive Behavioural Signalling

Behaviours that serve as compensatory measures in the event that communicative channels are shut are included in the category of adaptive behavioural signalling. These Behaviours, which can include efforts at vocalization, withdrawal, or gestural attention-seeking, all have a purpose in terms of communication. It is possible to view them through the lens of Behaviourism as responses that are conditioned by the environment. This line of thinking is similar to Thorndike's Law of Effect (1898; 1911), which states that Behaviours that produce a type of environmental response are reinforced, even if they are not consciously reinforced (Kumar, 2022). Within the structural boundaries of the communicative environment, this type of signaling is not pathological but rather adaptive than pathological.

Environmental Responsivity

The term "environmental receptivity" refers to the ability of educational institutions to adjust their methods of instruction, reinforcement, and disciplinary practices in accordance with the communicative requirements of leaners. Bandura's reciprocal determinism (1977; 1986) is expanded upon by CRT-B, which places communicative adaptation at the center of environmental mediation. The restoration of reciprocity, the stabilization of adaptive Behaviour, and the alignment of reinforcement with accessible channels are all outcomes of a responsive environment, which supports the development of functional Behaviours.

It is via the combination of these five notions that Behaviour is positioned as a phenomena that is mediated by communication and

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relationships (Si et al., 2022). CRT-B conceptualizes observable Behaviour as emerging from the interplay between the learner, communicative environment, and structural reinforcement contingencies. This is in contrast to the traditional approach, which views observable Behaviour as representing an independent reaction to stimuli.

Conceptual Model of Communicative Reciprocity Theory of Behaviour

Communicative **Accessibility**
↓
Reciprocal **Recognition**
↓
Reinforcement **Alignment**
↓
Adaptive **Behavioural** **Signaling**
↓
Environmental **Responsivity**
↓
Behavioural Stabilization

Operationalization of Core Constructs

A theoretical framework's constructs must be observable and measurable for empirical significance. The Communicative Reciprocity Theory of Behaviour (CRT-B) was conceptually defined, but its practical application needed operational explanation to help researchers and educators assess its presence, intensity, and influence in educational settings. Operation does not reduce theoretical depth; it provides measurable indicators for CRT-B's relational and communicative processes.

Communicative accessibility refers to how well students with auditory and speech disabilities can participate in instructional communication using sign language, visual representations, captioning, written directives, or multimodal pedagogical approaches. This can be measured by the ratio of accessible instructional communication, sign language interpretation or visual scaffolding, and student comprehension during classroom interactions. Classroom observation or accessibility checklists can measure how accessible communicative exchanges are to students.

Reciprocal Recognition refers to how instructors and peers validate a learner's sign language, gestures, written forms, or other communication methods. This notion can be assessed by examining instructor acknowledgement of student communication, peer involvement in reciprocal relationships, and the extent to which learners' communicative modes are included in classroom discourse. Behavioural observation instruments can record learners' communication attempts and the ratio that yields useful feedback.

Reinforcement Alignment is how well behavioural reinforcement like praise, criticism, teaching, and discipline is communicated to learners. The ratio of sign-supported speech, visual signs, or written feedback reinforcements may be measured. Researchers can examine whether reinforcement matches the learner's communicative modality temporally and linguistically to better understand behavioural outcomes.

Learners use adaptive behavioural signalling to compensate for communication deficits. These behaviours may include attention-seeking gestures, exaggerated physical signals, vocal attempts, disengagement, or other communication expressions to re-establish connection or visibility in the classroom. Operational indications may include the frequency of such behaviours within observation intervals, their situational triggers, and their relationship to reduced communication accessibility.

Environmental responsiveness means instructors, peers, and institutional frameworks

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may adapt instructional techniques, behavioural responses, and communication strategies to hearing and speech-impaired students. This construct can be operationalised via inclusive educational policies, teacher expertise in visual or signed communication, accessibility to assistive communication tools, and institutional readiness to adapt behavioural management strategies. Institutional adaptability indices, teacher competency evaluations, and structured classroom inclusion measures quantify environmental responsivity.

Behavioural Mechanism

In order to provide an explanation for the emergence of Behavioural patterns in leaners who have hearing and speech impairments, the Communicative Reciprocity Theory of Behaviour (CRT-B) offers a sequential mechanism. This mechanism incorporates both classical and operant Behaviourist ideas, while also putting an emphasis on the relational and communicative context as a component of the production of Behaviour.

Behaviour starts with communicative disruption, which happens when leaners have limited access to instructional or peer-mediated conversation (Sandoval, 2022). Communication disruption is the first step in Behaviour. It is possible that this is the result of a lack of sign language interpretation, inadequate visual scaffolding, or exclusion from classroom conversation. Pavlov's (1927) principle that unperceived stimuli cannot produce conditioned responses and Skinner's (1938; 1953) assertion that reinforcement requires perceivable contingencies are both echoed in the Behaviourist perspective, which states that the intended stimuli and reinforcement contingencies are unable to effectively reach the learner.

Following this, the collapse of reciprocity occurs. An instance of this occurs when the communicative endeavors of the student are either not recognized by educators or are acknowledged in an insufficient manner by peers. Using Bandura's social learning theory (1977; 1986), it is seen that both observational and vicarious learning are disrupted, and the learner is unable to imitate Behaviour or anticipate social reinforcement. The failure to acknowledge one another results in the formation of a relational void, which in turn undermines the effectiveness of environmental circumstances.

As a result, this results in reinforcement distortion, which is characterized by the misreading of Behavioural cues from the learner and the inconsistent application of corrective feedback. Behaviourist studies, such as Thorndike's Law of Effect (1898; 1911) and Hull's drive-reduction theory (1943), highlights the fact that responses are enhanced when they are followed by results that are satisfying. The misalignment of reinforcement that occurs as a result of communication obstacles might result in Behaviours being unintentionally encouraged or inhibited in an improper manner (Chiemezie & Ik-Iloanusi, 2022).

Learning occurs when leaners engage in adaptive Behavioural signaling as a reaction. As compensating mechanisms, Behaviours such as gestural attention-seeking, disengagement, or other communicative attempts serve the purpose of regaining visibility, control, or clarity within the context of the classroom setting. The learner's contact with the communicative ecosystem is reflected in these Behaviours, which are defined as functional adaptations rather than innate impairments (Raymond & Raymond, 2024).

It is the institutional response that dictates the course of Behaviour changes. Responses that are punitive or non-adaptive have the potential to perpetuate maladaptive Behaviour, whereas adaptive solutions that restore communicative accessibility and reciprocal recognition have the ability to stabilize Behaviour and make learning easier. Therefore, CRT-B is fundamentally aligned with operant conditioning; nevertheless, it shifts the emphasis of explanation away from individual pathology and toward relational and contextual contingency within communicative contexts.

Educational Implications

The Communicative Reciprocity Theory of Behaviour (CRT-B) has substantial implications for pedagogy, Behaviour management, and teacher preparation in special education, especially for leaners with hearing and speech impairments. By framing Behaviour as a product of communicative reciprocity instead of an inherent deficiency, CRT-B reorients interventions to emphasize structural and relational accessibility.

Behaviour management should commence with a verbal assessment rather than quick punitive measures (Hardin & Hardin, 2024). Educators are urged to evaluate the accessibility of classroom language, teaching methods, and

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feedback systems for all learners. Inadequate or inaccessible communication frequently underpins Behaviours that may otherwise be categorized as defiant or inattentive. Reinforcement strategies must align with linguistic and modality principles. According to Skinner's (1938; 1953) principles of operant conditioning, rewards and corrective feedback are effective solely when the learner can effectively detect and comprehend them (Mandouit & Hattie, 2023). This necessitates meticulous alignment of instructional content with comprehensible language and visual aids, so that reinforcement cultivates the desired Behaviour rather than inadvertently promoting maladaptive signaling.

Sign language access is not only an accommodation; it is an essential infrastructure for Behavioural stabilization (Liu et al., 2024). The provision of interpreters, captioning, and visual aids facilitates comprehensive participation of learners in classroom interactions, thereby enhancing both Behavioural and academic growth. In the absence of this, adaptive signaling Behaviours may continue as compensating reactions to communicativeexclusion.

Teacher training must include semiotic competence, visual pedagogy, and an understanding of communicative modes. Educators must be adept at identifying and interpreting adaptive Behavioural signals, differentiating them from intrinsic maladaptive Behaviours, and responding in ways that restore reciprocity. This methodology corresponds with Bandura's (1977; 1986) focus on observational learning while broadening its applicability to many communicative contexts. Ultimately, Behaviour assessment and intervention must distinguish between Behaviours resulting from adaptive signaling and those originating from cognitive or emotional influences (Wright et al., 2025). Interventions should focus on adjusting the environment to facilitate communicative reciprocity, rather than only altering the learner's Behaviour. This may entail reorganizing classroom interactions, offering multimodal educational assistance, and promoting peer acknowledgment of varied communication methods.

CRT-B provides a framework for developing educational practices that are inclusive, relationally informed, and scientifically based, ensuring that Behavioural support is integrated with communicative accessibility rather than applied in isolation.

To understand the Communicative Reciprocity Theory of Behaviour (CRT-B) in educational institutions, one must consider the cultural and institutional circumstances that shape communication. In many developing nations, including Nigeria, structural and socio-cultural issues affect hearing and speech-impaired leaners' education. These may include limited institutional acknowledgement of sign language, lack of qualified interpreters or visual educational materials, and cultural attitudes about disability that impede classroom participation and inclusion. Communicative asymmetry and CRT-B adaptive behavioural signalling may increase under such settings. The approach advises educators and policymakers to consider cultural attitudes of disability, language accessibility, and institutional capability while implementing communicatively responsive education.

Philosophical Foundations

The Communicative Reciprocity Theory of Behaviour (CRT-B) is fundamentally based on a relational and intersubjective perspective of human agency, positioning Behaviour within the framework of communicative interaction rather than just within the individual learner. This foundation opposes reductionist Behaviourist and deficit-focused viewpoints that perceive observable Behaviour as inherent disease.

Firstly, CRT-B is informed by relational anthropology, which perceives the human individual as inherently dialogical. Behaviour is perceived as arising from social connection and reciprocal participation, rather than just as a response to isolated stimuli. The ability of learners with hearing and speech impairments to engage in collaborative meaning-making directly affects their Behavioural expression (Chen et al., 2024). Adaptive or disruptive Behaviours can be viewed as reactions to relational and communicative contexts, aligning with the neo-Behaviourist recognition of environmental mediation (Tolman, 1932; Bandura, 1977).

Secondly, the theory integrates the ethics of recognition, drawing on philosophical concepts from Honneth (1995). Recognition involves acknowledging the validity, dignity, and communication capacity of individuals. When educators, peers, or institutions neglect to

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acknowledge a learner's communicative modality, Behavioural manifestations such as retreat, attention-seeking, or oppositionality, exemplify the systemic denial of agency. CRT-B characterizes these Behaviours not as deficiencies but as signaling mechanisms resulting from unreciprocated communicative interaction.

Thirdly, CRT-B critically examines reductionist Behaviourism. Classical and radical Behaviourist approaches (Watson, 1913; Skinner, 1938; 1953) prioritize observable Behaviour and reinforcement contingencies, although they detach Behaviour from the relational and symbolic contexts essential for effective learning. CRT-B posits that for individuals with hearing and speech impairments, the efficacy of reinforcement and stimulus control is contingent upon communicative accessibility. Behaviour cannot be comprehensively understood, anticipated, or influenced without accounting for the quality and reciprocity of communication (Chung et al.,2026).

By synthesizing these philosophical viewpoints, CRT-B situates Behaviour as both structurally and morally influenced. Behavioural reactions are not merely results of reinforcement; they also reflect agency, dignity, and relational dynamics within educational systems (Najafov, 2025). This framework emphasizes the ethical obligation of educators and institutions to create conditions of reciprocal communication, linking teaching practices with moral principles and psychological theories.

Points of Convergence with Existing Behavioural Theories

The Communicative Reciprocity Theory of Behaviour (CRT-B) corresponds with various recognized Behavioural frameworks while also broadening their applicability to address the specific circumstances of learners with hearing and speech impairments. By framing communication as a fundamental driver of Behaviour, CRT-B presents both continuity with and divergence from classical, neo-, and social learning theories.

CRT-B aligns with classical Behaviourism, especially Pavlov's (1927) research on classical conditioning, by acknowledging that environmental stimuli affect Behavioural responses. This coincides with Thorndike's Law of Effect (1898; 1911), which posits that Behaviours followed by favorable outcomes are reinforced, and with Skinner's operant conditioning theory (1938; 1953), which highlights the significance of reinforcement and punishment in Behaviour modification. In CRT-B, these principles are maintained; however, the efficacy of reinforcement depends on communicative accessibility.

The theory incorporates aspects of neo-behaviourism, including Hull's drive-reduction theory (1943) and Tolman's purposive behaviourism (1932; 1948), which acknowledge internal states and goal-oriented Behaviour as intermediaries of environmental inputs. CRT-B emphasizes purposive Behaviour within communicative contexts, stating that learners' goal-directed activities are comprehensible only when the environment facilitates reciprocal communication. Moreover, CRT-B corresponds with social learning theory, as delineated by Bandura (1977; 1986), especially the principles of observational learning, modeling, and reciprocal determinism. Behavioural learning in CRT-B is similarly influenced by the interplay among the individual, the environment, and observed models. Nonetheless, the theory contends that communication is not simply one variable among several, but the fundamental axis around which Behavioural organization for learners with hearing and speech impairments revolves (Rathod, 2024). In the absence of accessible communication, observational learning and reinforcement are hindered, causing adaptive Behaviours to manifest as compensatory signals instead of reflecting internalized norms or inadequacies.

Consequently, CRT-B preserves continuity with previous Behavioural theories by acknowledging contextual effect, reinforcement, and observational learning. Its distinction resides in reinterpreting communication as fundamental rather than ancillary, highlighting relational reciprocity as the essential requirement for Behavioural development. This frames CRT-B as both an extension and a significant reorientation of Behaviourist frameworks, adapted to the educational needs of learners with hearing and speech impairments.

Falsifiability and Critique

The Communicative Reciprocity Theory of Behaviour (CRT-B) is purposefully designed to

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be a framework that is both provisional and testable, and it is open to both empirical examination and scholarly criticism. The core premise of the study, which states that learners with hearing and speech impairments exhibit Behaviour that is governed by communicative reciprocity, may be operationalized, evaluated, and falsified through the application of rigorous research (Nkosi, 2022).

One could criticize CRT-B for a number of different reasons. To begin, it gives communication an excessive amount of priority in comparison to other factors, such as cognitive, emotional, or neurological factors that also have an effect on Behaviour. Critics may argue that this theory does not adequately account for differences in sensory-motor processing or internal cognitive processing, despite the fact that communication is a fundamental component in the production of Behaviours according to this theory. Second, the CRT-B may be prone to underestimating the psychological heterogeneity of individuals. Not all leaners who have difficulties with hearing and speaking react in the same way to disruptions in communication; factors such as personal temperament, previous learning history, and motivation may play a role in mediating the expression of Behaviour. Third, the theory may be questioned on the problems associated with operationalization, particularly with regard to the measurement of constructs such as environmental responsivity or reciprocal recognition as they pertain to reliability and validity.

Methodological Pathways for Testing CRT-B

The Communicative Reciprocity Theory of Behaviour (CRT-B) requires systematic empirical investigation to evaluate its explanatory and predictive capacity within educational settings. Several research designs may be employed to test the theory and examine the relationships among its core constructs. Possible methodological approaches include:

1. Classroom experimental interventions assessing behavioural changes following improved communicative accessibility.
2. Comparative case studies of inclusive and non-inclusive classrooms.
3. Behaviour observation coding systems documenting adaptive signalling and communicative interactions.
4. Structural equation modelling to test relationships among CRT-B constructs.
5. Longitudinal studies tracking behavioural development following communicative interventions.

Testable Propositions and Hypotheses of CRT-B

H1: Greater communicative accessibility will significantly reduce adaptive behavioural signaling.

H2: Reciprocal recognition by teachers predicts higher behavioural engagement among deaf learners.

H3: Misalignment between reinforcement and communication modality increases perceived non-compliant behaviour.

H4: Classrooms with high environmental responsivity will show lower behavioural disruption among hearing-impaired learners.

Despite these potential limitations, CRT-B is empirically testable. Suggested approaches include:

Comparative Behavioural analysis across classrooms with varying degrees of communicative accessibility, assessing the frequency and nature of adaptive Behaviours. Longitudinal monitoring of Behavioural modifications subsequent to specific interventions that improve reciprocal communication, including sign language integration, visual pedagogical support, or multimodal reinforcement.

Mixed-method approaches that integrate direct Behavioural observation, teacher reporting, and phenomenological research into learner experiences, facilitating a nuanced comprehension of adaptive signaling and environmental responsiveness (Jackson, 2024).

In the event that the systematic strengthening of communicative reciprocity does not result in visible Behavioural stabilization or if adaptive Behaviours continue to exist regardless of communicative accessibility, then the CRT-B would be considered to be false. On the other hand, the idea that Behaviour among leaners who have hearing and speech impairments is relationally and communicatively constructed rather than of an essential or pathological nature would be strengthened by empirical confirmation.

As a result, CRT-B frames itself as a theory that is capable of dialogue with current Behavioural, cognitive, and social learning frameworks, is open to further development, and is suited for

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guiding research and pedagogical practice in the field of special education.

Limitations of the Communicative Reciprocity Theory of Behaviour (CRT-B)

Future Research Directions

Empirically testing and developing the Communicative Reciprocity Theory of Behaviour is needed. To assess if greater communicative accessibility affects adaptive behavioural signals, classroom-based studies in schools for hearing and speech-impaired leaners are needed. Second, researchers should create standardised CRT-B behavioural assessment scales for communicative accessibility, reciprocal recognition, and environmental responsivity. Third, intervention-based studies should evaluate how sign language, visual, and multimodal teacher training affects student behaviour and involvement. Finally, captioning systems, visual learning platforms, and assistive communication tools should be examined to determine how they improve communicative reciprocity and deaf learners' behaviour in modern educational settings.

Conclusion

According to the Communicative Reciprocity Theory of Behaviour (CRT-B), behavioural challenges among leaners who have hearing and speech impairments are rethought as relational phenomena that emerge from communicative asymmetry. This is in contrast to the traditional understanding of behavioural difficulties as being caused by underlying deficits or pathology. The CRT-B framework places Behaviour into the context of the interaction between accessibility, recognition, reinforcement, and environmental responsiveness. This is accomplished by putting the structural and reciprocal aspects of communication at the forefront. The classic deficit models, reductionist Behaviourism, and solely cognitive interpretations are all challenged by this perspective, which provides a paradigm that is not only philosophically founded but also educationally applicable.

A number of significant contributions are advanced by CRT-B. Through this approach, adaptive or disruptive Behaviours are reframed as meaningful responses to communicative disruptions. Additionally, the necessity of inclusive communication tactics, multimodal instruction, and relational acknowledgment is emphasized. In addition to incorporating classical Behaviourist principles, neo-Behaviourist insights, and social learning theory, it extends these concepts in order to address the specific educational challenges that are faced by leaners who have hearing and speech impairments. It is important to note that the theory can be disproved and is susceptible to empirical validation. It is welcome to do research using mixed methods, comparative methods, and longitudinal research in order to examine its central assertions. CRT-B encourages educators, administrators, and policymakers to prioritise communicative accessibility and reciprocity as core components of behavioural management, curriculum design, and teacher training. This is done in terms of the practical application of the concept. A path for special education that is ethically informed, pedagogically sound, and attentive to the lived realities of leaners who have hearing and speech impairments is provided as a result of this provision. CRT-B is, in the end, a propositional and generative framework that is designed to provoke scholarly debate, lead empirical research, and influence inclusive educational practice. According to this theory, Behaviour can only be understood when it is viewed through the lens of communication and relational reciprocity. This theory offers a fresh paradigm for comprehending, supporting, and maximizing learning for this population.

Reference

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Berrezueta-Guzman, S., Daya, R., & Wagner, S. (2025). Virtual reality in sign language education: opportunities, challenges, and the road ahead. *Frontiers in Virtual Reality*, *6*, 1625910.

Cairns, L. (2025). Reinforcement. In *The handbook of communication skills* (pp. 209-234). Routledge.

Chen, S., Waller, J., Seita, M., Vogler, C., Kushalnagar, R., & Wang, Q. (2024). Towards Co-Creating Access and Inclusion: A Group Autoethnography on a Hearing Individual's Journey Towards Effective Communication in Mixed-Hearing Ability Higher Education Settings. Proceedings of the 2024 CHI

DOI: https://doi.org/10.5281/zenodo.19284509

Conference on Human Factors in Computing Systems,

Chiemezie, O. A., & Ik-Iloanusi, A. I. (2022). Communication and Behaviour in human management. *Nigerian Journal of Social Psychology*, *5*(2).

Chung, H., Jiang, R., Shen, S., & Yang, X. J. (2026). Predicting human altruistic and compliance Behaviours in multiple-operator single-agent (Mosa) interaction. *International Journal of Human–Computer Interaction*, *42*(4), 2212-2230.

Duck, S., & Secklin, P. L. (2025). Relational communication. In *The Handbook of Communication Skills* (pp. 515-540). Routledge.

Ellinor, L., & Girard, G. (2023). *Dialogue: Rediscover the transforming power of conversation*. Crossroad Press.

Hardin, C., & Hardin, C. J. (2024). *Effective classroom management: Models and strategies for today's classrooms*. BoD–Books on Demand.

Honneth, A. (1995). *The Struggle for Recognition: The Moral Grammar of Social Conflicts*. Cambridge, MA: MIT Press.

Hull, C. L. (1943). *Principles of Behaviour: An Introduction to Behaviour Theory*. New York: Appleton-Century-Crofts.

Jackson, K. (2024). Teachers' Perceptions of a Blended Learning Environment for Children with Special Education Needs: Challenges and Opportunities.

Kumar, V. (2022). Environmental Influences. In *Encyclopedia of Animal Cognition and Behaviour* (pp. 2352-2357). Springer.

Liu, H. T., Hsieh, H. H., Lin, W. Y., Andrews, J. F., & Liu, C. J. (2024). Sign language support in an inclusive environment: Educational sign language interpreting services in Taiwan. *Deafness & Education International*, *26*(1), 37-57.

Mafarja, N., Mohamad, M. M., Zulnaidi, H., & Fadzil, H. M. (2023). Using of reciprocal teaching to enhance academic achievement: A systematic literature review. *Heliyon*, *9*(7).

Mandouit, L., & Hattie, J. (2023). Revisiting "The Power of Feedback" from the perspective of the learner. *Learning and Instruction*, *84*, 101718.

Maringanti, H. B., & Sahu, M. (2024). Cognitive Learning. In *Digital Skill Development for Industry 4.0* (pp. 15-32). Auerbach Publications.

Mehrad, A., Bouzedif, M., & George Rweramila, N. (2024). Integrating Psychology, Cognitive, and Behavioural Science in the Concept of Education and Student Success in the Educational System. *Tuijin Jishu/Journal of Propulsion Technology*, *45*(3), 4127-4144.

Mushtaq, R. S., Mahsud, K., Siddiqui, T. A., & Khalid, A. (2024). Exploring the role of early diagnosis of hearing loss in children and its impact on educational outcomes, language development, and social integration in special education settings. *Review of Applied Management and Social Sciences*, *7*(4), 899-913.

Najafov, R. (2025). Socio-psychological determinants of value development in leaners: A meta-analytical review of negative Behaviours and the educational-social dynamic. *Revista Mexicana de Investigación e Intervención Educativa*, *4*(3), 275-289.

Nkosi, N. H. (2022). *Communication Experiences in Learning Environments of Learners with Hearing Impairments*. University of Johannesburg (South Africa).

Pavlov, I. P. (1927). *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*. London: Oxford University Press.

Rathod, R. S. (2024). *Silent Voices, Stronger Bonds: Strategies for Communication with Hearing and Speech Impaired*. Laxmi Book Publication.

Raymond, E., & Raymond, E. B. (2024). *Learners with mild disabilities: A characteristics approach*. BoD–Books on Demand.

Rouffet, C., van Beuningen, C., & de Graaff, R. (2023). Constructive alignment in foreign language curricula: an exploration of teaching and assessment practices in Dutch secondary education. *The Language Learning Journal*, *51*(3), 344-358.

Sandoval, J. A. (2022). Peer-mediated interventions to improve the transition Behaviour of children and young adolescents with disabilities: A systematic review of 50 years of literature.

Shoko, R. (2024). Communication barriers and deaf learner misbehaviour in a South African special needs school. *African Journal of Teacher Education*, *13*(1), 126-148.

Si, W., Jiang, C., & Meng, L. (2022). The relationship between environmental awareness, habitat quality, and community residents' pro-environmental Behaviour—mediated effects

DOI: https://doi.org/10.5281/zenodo.19284509

model analysis based on social capital. *International journal of environmental research and public health*, *19*(20), 13253.

Skinner, B. F. (1938). *The Behaviour of Organisms: An Experimental Analysis*. New York: Appleton-Century.

Skinner, B. F. (1953). *Science and Human Behaviour*. New York: Macmillan.

Thorndike, E. L. (1898). *Animal Intelligence: An Experimental Study of the Associative Processes in Animals*. Psychological Review Monograph Supplements, 2(4), i–109.

Thorndike, E. L. (1911). *Animal Intelligence: Experimental Studies*. New York: Macmillan.

Tolman, E. C. (1932). Purposive Behaviour in animals and men. *The Psychological Review*, *39*(4), 182–205.

Tolman, E. C. (1948). Cognitive maps in rats and men. *Psychological Review*, *55*(4), 189–208.

Umbra, R., & Fasbender, U. (2025). The interaction discrepancy model: a theoretical framework for understanding person-environment interactions. *Frontiers in Psychology*, *16*, 1554567.

Watson, J. B. (1913). Psychology as the Behaviourist views it. *Psychological Review*, *20*(2), 158–177.

Wright, R. N., Adcock, R. A., & LaBar, K. S. (2025). Learning emotion regulation: An integrative framework. *Psychological Review*, *132*(1), 173.

DOI: https://doi.org/10.5281/zenodo.19284509