RESEARCH ARTICLE

# Investing Modern Learning Theories in Language Didactics

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**Abstract**
This research highlights the importance of investing modern learning theories in language didactics, given the valuable contributions these theories—whether behavioral or cognitive—offer in advancing and enhancing teaching and learning processes. The study aims to demonstrate the role of these theories in language education and in overcoming challenges faced during the learning process. It also sheds light on the most prominent learning theories while emphasizing the fundamental differences in how each theoretical school conceptualizes the nature of learning.

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## Introduction:

The Arabic language, as one of the most prominent living languages that has preserved its characteristics and existence across different eras and civilizations, has always been and continues to be a unique and distinguished language among the world's languages. However, it is currently experiencing a state of social abandonment, having retreated into books and heritage references that are mostly limited to researchers and academics. Arabic is an inseparable part of the legacy of civilization—how could it not be, when it lies at the heart of identity? Interest in the language has grown, along with continuous efforts to elevate the language of *Ḍād* to the ranks of the most widely spoken, influential, and globally circulated languages. Achieving this noble goal requires the synergy of multiple factors and incentives for Arabic to flourish.

This study aims to shed light on the significance of investing modern learning theories in language didactics. These theories deal directly with the processes of learning and teaching. As is well known, behavior in living organisms depends on a set of stimuli from their environment, as well as biological factors that drive their responses, development, and maturation—or their limitations. In other words, the soundness of responses progresses along an ascending developmental scale as individuals grow older, aided by what they have learned and the experiences they have been exposed to, enabling them to defend themselves, advance, persevere, and overcome challenges.

To achieve this, I adopted the descriptive-analytical method, which is appropriate for the nature of the study.

In light of these theories, the following questions arise: What is each theory's perspective on learning? What are the main learning processes according to each theory? And what are the essential differences between these schools regarding the nature of learning?

The study follows a structure consisting of five main sections. The first section addresses the behaviorist school with its three currents:

1. Classical behaviorism, represented by Pavlov.
2. Neo-behaviorism, led by Watson and Thorndike.
3. Operant behaviorism, developed by Skinner.

The second section focuses on the Gestalt school;
The third addresses the constructivist theory of Piaget;
The fourth discusses the contiguous conditioning theory of Guthrie;
And the fifth and final section includes the drive theory and the theory of Clark Hull.

The study concludes with a summary of the main findings reached after this brief scientific exploration of modern learning theories.

## First: The Behaviorist School

This trend emerged as a scientific perspective and psychological project based on the notion of behavior, representing an epistemological break within the field of psychology. It sought to distinguish itself from topics such as consciousness, introspection, inner experience, and the concepts of desire, intention, and purpose.
According to this school, behavior is fundamentally based on the stimulus–response model. From its point of view, learning is essentially an organic process of linking and associating stimuli with responses. These associations constitute the basic units of human behavior.
(*Moussa Biheh, 2014, p. 117*)

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a. Classical behaviorism, represented by Pavlov.
b. Neo-behaviorism, led by Watson and Thorndike.
c. Operant behaviorism, developed by Skinner.

### 1 / The Behaviorist Theory of Pavlov and Watson:

Pavlov (1849–1936), the renowned Russian physiologist, laid the foundational principles of classical conditioning. In addition to his major contributions to physiology, he significantly advanced understanding of the causes behind abnormal behavior and methods of treatment. His work had a global impact, particularly in the field of psychology, influencing the major learning theorists in the United States both in the past and today.
(*Moussa Biheh, 2014, p. 117*)

**Pavlov** attempted, through his empirical experiments, to establish fixed laws of conditioning (the law of stimulus and response), based on his realization that every behavior has a corresponding stimulus. If the relationship between the

two is sound, then the behavior will also be appropriate. Classical learning is the model that **Pavlov** studied, and it refers to the idea that any living being has an innate, unconditioned response to a particular stimulus. For example, when a hungry dog sees food (called the unconditioned stimulus), it begins to salivate (the unconditioned response).

If the sound of a bell is repeatedly paired with the presentation of food, then eventually the bell alone—without the presence of food (the conditioned stimulus)—will cause the dog to salivate (the conditioned response). In summary, the dog has learned to respond to a stimulus (the bell) that previously had no relation to food or to salivation, as though this neutral stimulus had become as appetizing as the food itself. (*Mustapha, 1983, p. 65*)

From the moment **Pavlov** noticed this phenomenon, he became intensely focused on conscious observation and continuous monitoring to study it, attempting to regulate its experimental domain by further deepening it through guided modification.(*Hassani, 2014, p. 57*)

Among the key principles that **Pavlov** established in the field of didactics are the following:

- The **law of reinforcement**, or strengthening through reward.
- The **law of internal inhibition or extinction**, which refers to the weakening or fading of a learner's behavior if it is not practiced or reinforced.
- The **law of habit or repetition**, which refers to the associative link between stimulus and response.
- The **law of generalization**, meaning that if an individual learns a response and the situation repeats itself, they will likely apply that response to other similar situations.
- The **law of discrimination**, which is the ability to respond to differences (while generalization responds to similarities).
- The **law of learning**, defined as a change in behavior resulting from experience and practice.
- The **law of relearning**, which occurs after extinction, when a new behavior is learned. (*Hassani, 2014, p. 119*)

As for **Watson**, the founder of the neo-behaviorist theory, he believed that most human behaviors are learned and acquired, whether from the natural or social environment. Based on this, they can be modified and changed—thus, they can be controlled, predicted, and their processes understood, provided that we are able to identify the stimuli that trigger them. From this perspective, it becomes clear that all learning is necessarily based on conditioned reflexes. (*Hassani, 2014, p. 119*)

**Watson** states:

"Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief—and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors."
(*Mebles & Webster, p. 23*)

Thus, we can conclude that an organism's ability to respond to a substitute signal in place of the original natural stimulus is clear evidence of the vitality and progress of its adaptation to the environment. Moreover, linguistic sounds, signals, symbols, and communication systems are, in reality, higher-level forms of conditioning that have no direct connection to natural stimuli. This is the very core and foundation of the educational process and the institutional construction of knowledge and culture. However, the highest degrees of reflex action remain limited in animals but are abundant in humans. (*Moussa Biheh, 2014, p. 119*)

**2 – Behaviorism according to Thorndike and B.F. Skinner.** What is most commonly associated with **Thorndike** in the field of learning is the concept of "learning by trial and error." Unlike his contemporaries, who gave priority to the social and sociological dimensions in educational psychology, **Thorndike** was less concerned with these aspects. Yet, he still shared several views with them. He regarded learning as an individual experience or an internal organic process that occurs within the nervous system of each organism independently. From his perspective, what matters to a teacher in the classroom is that "association" means the link between stimulus and response—not the interaction among students seen as a social unit. (*Mebles & Webster, p. 22*)

Despite the lasting influence of **Thorndike** on the subject of learning, the behaviorist perspective on learning has lost some of the attention it once held in the past.

**Learning by Trial and Error:** The foundations of this approach in modern psychological studies can be credited to **Thorndike**. It is based on the idea that trial-and-error learning is the only path to improving and refining behavior and acquiring new skills—both for humans and animals.(*Hassani, 2014, p. 61*)

When **Thorndike** compared learning in humans and animals, he believed that the mechanical associations observed in animal training and conditioning could form the basis of human learning.(*Salama Adam & Haddad, p. 181*)

However, behavioral improvement and refinement through trial and error occur only when the learner is faced with a problem that has no immediate or ready-made solution—making it difficult to generate an instant response to a stimulus. One researcher noted:

"The expression 'behavior by trial and error' is inaccurate. It would be more correct to say: behavior by eliminating unsuccessful or unnecessary responses, and retaining useful ones."(*Aqel, 1987, p. 25*)

A failed attempt is a response that does not produce a positive outcome—it is not reinforced and does not meet the learner's needs. In contrast, a successful attempt is a positively reinforced response, marked by success or the attainment of a specific goal or skill.

**Thorndike** believed that three fundamental laws govern trial-and-error learning:

**a – The Law of Readiness:**This law relates to the learner's mental and emotional state during the learning process. If the learner is not psychologically prepared to receive and acquire the intended experience or skill, communication between the teacher and learner will be disrupted, and the learning goal will not be achieved. A lack of readiness—both physical and psychological—can hinder the process of learning by trial and error, which fundamentally relies on overcoming obstacles and difficulties.

**b – The Law of Exercise (Practice):**This law is manifested in two situations:

- First, when the learner discovers a specific connection between a stimulus and a response, the strength of this connection increases with practice, especially when the outcomes are clear and successful.
- Second, if the learner neglects a potential stimulus–response connection for a prolonged period, the association may weaken or disappear entirely from their experiential field. **Thorndike** believed that mechanical repetition does not necessarily lead to the stabilization of behavior or the acquisition of new knowledge unless it is reinforced by success and supported with appropriate reinforcement. (*Salama Adam & Haddad, p. 182*)

**c. Law of Effect:**This law emphasizes the principle of the effect resulting from the attempt. The learner retains successful responses that leave a positive impression and disregards those responses that leave no impact on their experience. (Salama Adam & Haddad, p. 182)

One of the common objections to the theory of trial-and-error learning comes from *Kurt Koffka*, as presented in his work *Principles of Gestalt Psychology* (New York, 1935). He argues that learning through trial and error does not lead to the acquisition of new knowledge, as the behavior associated with it is merely a series of instinctive responses. The learning process merely eliminates some of these responses while retaining others, without any cognitive awareness of their internal relationship—thus excluding the role of conscious thought in the learner. (Aqel, 1987, p. 163)

**3. Operant Behaviorism with B.F. Skinner:**Skinner's theories are among the most influential in contemporary developmental psychology. Like other behaviorists, he believed that an organism's behavior results from external stimuli encountered in life. Accordingly, most modern research focuses—directly or indirectly—on studying or accurately discovering how environmental factors influence a child's behavior. These include conditions of pregnancy and childbirth, parenting styles, social traditions, family lifestyle, poverty or wealth, and intra-family interactions. (Al-Sheibani)

Skinner proposed a program to study behavioral patterns in organisms through the following steps:

1. Expose the experimental organism to a known stimulus.
2. Observe the response resulting from this stimulus.
3. Classify the behavioral patterns based on the relationship between stimulus and response.

Therefore, Skinner suggested viewing any test unit derived from an S-R (stimulus–response) relationship as a reflection. From this perspective, the behaviorist is not concerned with the internal mechanisms of behavior; rather, the focus is on observable behavior that can be monitored, experimented on, and tested based on its external appearance—not its inner workings. (Aqel, 1987, p. 137)

The organism's response is strengthened and reinforced as a procedure by increasing the presence of positive reinforcing stimuli, while it weakens and extinguishes in the presence of negative stimuli. Effective positive learning is built by reinforcing performances that approximate the desired standard behavior, whereas negative learning associated with physical punishment generally remains distant from the construction of operant behaviors as a core objective of the teaching-learning process. (Mostafa, 1983, p. 192)

Skinner also distinguished between two different types of learning, which correspond to two different types of behavior:

1. **Respondent Behavior:** This behavior results from clearly defined stimuli and is closely tied to them. When the stimulus occurs, the response follows automatically. This is a natural reflex to a set of stimuli and is therefore innately comprehensive. Some reflexes may be acquired through conditioning.
2. **Operant Behavior:** This type of behavior differs in that it is not an automatic reaction to a stimulus. Instead, it involves a broader range of actions within the natural and social environment, achieving outcomes without sensory experience, such as speaking, playing, or working. Most human behavior falls into this category. (Salama Adam & Haddad, p. 180)

Skinner believed that multiple factors contribute to the completion of the operant conditioning system, but in his view, the most effective among them is reinforcement or reward, which serves either to promote and develop certain stimuli or to eliminate others and remove them from the experiential field. The first case is known as positive reinforcement—for example, rewarding a hungry person with food after the desired response is performed. The second is known as negative reinforcement—for example, eliminating an electric shock that obstructs the animal's path. Negative reinforcement results from removing a negative stimulus from the experimental context. (Salama Adam & Haddad, p. 181)

Thus, reinforcement is defined as "an event associated with a stimulus that, when presented in a timely manner alongside the response, tends to maintain or increase the strength of that response or strengthen the relationship between the stimulus and the response, or between two stimuli." (Hulse et al., p. 46)

This definition includes the following elements:

1. Reinforcement is an event that accompanies the stimulus.
2. Its appearance coincides temporally with the response, and if this occurs consistently, it will necessarily lead to:
   a. Maintaining the strength of the response.
   b. Increasing the strength of the response.
   c. Strengthening the relationship between stimulus and response.
   d. Strengthening the relationship between one stimulus and another.

Hence, we conclude that reinforcement is simply a form of strengthening and eliciting the response through reward or punishment, whether the reward is material or moral—such as satisfying needs, fulfilling desires, or enabling the learner to achieve their educational goals through such reward or incentive. ( *Wattas*, p. 28).

Great credit goes to Skinner for his significant contributions in the field of education, especially in what is known as "Programmed Learning". He considered that programmed learning is effective when the following conditions are met:

1. The information to be taught should be presented in small, quick steps related to the outcome of learning in the situation—meaning the learner should be given feedback.
2. The learner should be given the opportunity to know whether their performance was correct or incorrect.
3. The learner should be able to engage in the learning process at a pace that suits their abilities.

However, according to Skinner, these principles are not respected in current education, because the prevailing method of teaching is the lecture method, which hinders the application of the principles he advocated. Thus, Skinner proposed an alternative to the lecture method, which he called "Programmed Instruction". This latter includes the principles underlying effective learning:

- The concept of the Teaching Machine, which presents the programmed instructional material in a way that facilitates the implementation of programmed learning.
- The use of programs to overcome certain learning problems, to train and professionally qualify teachers, to serve as a supportive teaching aid, and to be used in educational research.
- The use of programmed learning integrated with the teacher to achieve cognitive educational goals in the classroom is better than using it alone. (*Mossabih*, 2014, p. 122)
- The suitability of programmed learning for teaching language skills in high school.
- Using programmed instruction in the form of a programmed textbook is more effective in achieving the educational objectives targeted by the study than the traditional method.
- Applying the programmed method to acquire accuracy in skill performance is better than using the traditional method. Thus, the study results affirm the validity of programmed learning in helping students gain precision in performing skills. (*El-Sharqawi, The Learning Process: Theories and Applications*, 1988, p. 113)

**Second: The Gestalt School.**

The Gestalt School emerged as a reaction to the behaviorist school, criticizing it for fragmenting perception into small parts. Gestalt theorists argued that individuals perceive situations as whole units, not as isolated, interconnected parts, since experience usually presents itself in the form of composite images. Therefore, there is no need to break them down or search for links between individual components (*Moussabeh*, 2014, p. 123).

The term Gestalt itself refers to the form, pattern, structure, or overall configuration—a whole composed of consistently and coherently related parts, where each element has its own place, role, and function within the whole. In this regard, *Lewin* defines Gestalt as "a general organization in which the elements are genuinely interconnected. When one part changes, the whole configuration is affected." (*Nassif, Théorie de l'apprentissage gestaliste* by *Michael Wertheimer*, p. 199)

The central focus of the Gestalt School is the idea that perception of a given object is determined by the overall context in which it exists. The whole is not merely the sum of its parts; rather, each part derives its identity from the whole. These parts work together to form a meaningful configuration. The same principle applies to the concept of *insight*, which refers to a moment of analytical reflection that enables the learner to gain understanding. Insight is achieved by recognizing the elements of a problematic situation and restructuring them in a meaningful way, thus resolving ambiguity and achieving genuine comprehension. Learners who reach this level of understanding can transfer their insights to other similar or even diverse situations (*Moussabeh*, 2014, p. 123).

Furthermore, Gestaltists believe that reinforcement should be internal, meaning it arises from within the learner. When a learner successfully resolves a problematic situation—by deconstructing its structure and understanding its internal logic—he or she experiences intrinsic satisfaction, a sense of balance and clarity. This moment of resolution becomes a powerful and lasting internal motivator for learning.

In essence, *insight* is the transition from lack of meaning to meaning, taking place at the level of learner perception. According to *Koffka*, trial-and-error learning "essentially teaches nothing new," as it merely involves eliminating failed responses while retaining the successful ones (*Guillaume*, 1963, p. 33).

Additionally, learning is a dynamic process because it involves forming accurate impressions of learning material—impressions that are, in fact, insightful perceptions essential for knowledge construction and skill acquisition. According to *Wertheimer*, this process requires starting with the overall structure, as memory operates based on an organized whole. This is only possible through restructuring the given material or learning situation. Learners cannot simply receive ready-made knowledge or be exposed to a problem without engaging actively with it to create meaningful impact (*Wertheimer*, 1983, p. 209).

### Third: Piaget's Constructivist Theory (Piaget)

Piaget links learning to the dual processes of assimilation and accommodation, through which the active self engages with the cognitive subject in order to attain a kind of balance necessary for its dynamic existence. Real learning, in essence, is a constructive process of awareness between the knowing subject and the object of knowledge, whose ultimate goal is to achieve a positive adaptive system associated with satisfaction or equilibrium resulting from active interaction with the external world.

Piaget acknowledges that what a person knows partly results from what they learn from their social and physical environment—that is, the world of people and objects. He also affirms that a sound state of being is a primary condition for learning. In addition to the social, material, and maturational factors of learning, he introduces another essential factor: the process of *equilibration*, which drives learning. By equilibration, Piaget means the human ability to organize scattered information into a coherent, non-contradictory cognitive system. Through this innate capacity, which we refer to as equilibration, humans gradually develop the ability to *infer* how things ought to be in the world. (Nassif, *La théorie constructiviste de Piaget*, George E. Forman, p. 283)

For Piaget, knowledge is neither acquired passively from the outside nor a mere reproduction or automatic reflection of reality. It is also not a sensory imprint as understood by Locke or the empirical materialist school, nor is it an innate or inherited truth. Rather, learning is established and constructed, according to Piaget, through the process of *representation*, which involves the dismantling of erroneous prior knowledge stored in memory and the construction of new knowledge grounded in logic and reason. (Haqqi, n.d., p. 296) That is, knowledge is rebuilt in the mind based on the cognitive map created by the free human intellect concerning the world of nature, people, and things.

True learning, according to Piaget, is rooted in experience, not rote instruction. It occurs primarily through internal experiential activities of the child. Every assimilation is a process of structuring and discovering reality. Thus, learning for Piaget is the denial and overcoming of confusion. For the learner to assimilate new knowledge and adapt to it, they must apply a philosophy of cancellation and rejection—negating previous levels of understanding and all pre-existing and inherited knowledge. (Haqqi, n.d., p. 303)

**Fourth: Contiguity and Contingent Conditioning Theory of "Edwin Guthrie" (Guthrie)**

Guthrie's theory is based on the premise that science should concern itself only with objective and observable phenomena. He was known for his strict scientific stance, opposing any association between behavioral events and the brain or nervous system. He also rejected Thorndike's "Law of Effect" and Pavlov's "Law of Reinforcement." Instead, he formulated what is known as the "Contiguous Conditioning Law." His theory is characterized by the following features (Carlson, December 1986, p. 55):

1. His interpretation of learning relied on a main principle similar to Watson's conditioning approach, namely the "principle of contiguity."
2. If a response is paired once with a particular stimulus, it is likely that this stimulus will elicit the same response again. In simple conditioning, the natural response occurs in the presence of the conditioned stimulus during training because it is initiated by the unconditioned stimulus (Carlson, December 1986, p. 60).
3. The last behavior a person performs tends to be repeated.
4. If the individual fails to find a solution, they will abandon the problem without resolving it.
5. Whether the individual succeeds in solving the problem or abandons it, the response has been learned based on the principle of contiguity between stimuli and movements.
6. Guthrie excludes the effect of practice in forming the connection between stimulus and response; i.e., further practice does not strengthen the bond — learning happens with the first association.
7. Effective performance of any behavioral pattern involves many distinctive events, each appearing as a response to a specific composite set of stimuli.
8. Improvement in skill performance occurs gradually, even though the learning itself may happen suddenly without prior preparation of the instructional variables or control procedures (Mesabih, 2014, pp. 127–128).
9. He did not explicitly address the concept of reinforcement but approached it differently, asserting that whatever the individual does — whether successful or not — is what they are likely to repeat.
10. From Guthrie's perspective, we do not learn through success or reinforcement, but through action itself. What we do is what we learn, regardless of whether it leads to success or failure. This gave rise to the concept of *Learning by Doing*, which gained prominence among educators. Curriculum designers and teaching method specialists began emphasizing the activity-based approach, especially in early education (Sharqawi, *Learning: Theories and Applications*, 1988, p. 116).

11. Learning occurs through the association of observed stimuli with the individual's observed responses, without the need for reinforcement.

12. Guthrie divided stimuli into three elements:

- (a) External stimuli
- (b) Muscular stimuli
- (c) Internal stimuli
  These elements are associated with the corresponding response from the first instance of contiguity in a learning situation. However, learning does not occur after the first trial; the organism requires repeated attempts (repetition) for the correct response to become associated with the appropriate stimuli.

13. A skill consists of many actions, and each action can only be learned if its stimulus elements are associated with its responses. For example, reading is a set of actions relying on a sequence of experiences performed in varied circumstances.

14. Reward has no role in strengthening the bond between stimulus and response. Its only function is to preserve the coherence of experiences (Carlson, December 1986, p. 59).

15. Punishment creates a state of tension that can promote the continuation of behavior if the punishment is mild. However, if the punishment is severe, it changes the habit and allows the stimuli to be associated with new and different experiences. If punishment is continuous, it leads to sustained tension that drives the learner to persist in the activity until reaching a goal that reduces this tension.

16. There are three methods to change undesirable behavioral habits — what Guthrie called *Breaking of Habits* or *Inhibitory Unlearning*. These are based on identifying the stimuli that trigger unwanted responses:

- **(a) Threshold Method**: Present the stimuli to be eliminated gradually until the unwanted response fades away. The stimulus thus falls below the threshold needed to elicit the response (Carlson, December 1986, p. 56). This method is effective for eliminating bad habits such as anger or fear.
- **(b) Fatigue Method**: In this method, the unwanted response is repeatedly elicited in a behavioral scenario until the individual becomes fatigued and ceases the behavior.
- **(c) Incompatible Stimuli Method**: This involves presenting the stimulus that elicits the unwanted response alongside new stimuli that generate a different, incompatible response, thereby replacing the undesired behavior (Sharqawi, *Learning: Theories and Applications*, 1988, p. 127).

**Fifth: The Drive Theory – Theory of *Clark Hull***

This theory is also referred to as the "New Behaviorist Theory," the "Reinforcement Theory," or the "Hypothetico-Deductive Theory." Its proponent, *Hull*, an American psychologist, believed that human behavior results from continuous interaction between the organism and the environment. This interaction, in his view, extends beyond the simple stimulus-response concept. The continuation of an organism's life depends on its biological adaptation. *Hull*'s goal in adopting this theory was to construct a behavioral psychology that excludes concepts such as feeling, purpose, or any similar mental ideas. He attempted to translate all psychological concepts into physical terms and regarded human behavior as automatic. He also believed that observing behavior must be entirely objective, with no room for subjectivity (Moussaabih, 2014, p. 130).

*Hull* maintained that the laws of behavior should be formulated in precise mathematical language, and that the advancement of psychology would be impossible without the use of mathematical methodology. He proposed four methods he deemed suitable and beneficial to the discipline:

1. Simple observation
2. Structured and controlled observation
3. Experimental testing of hypotheses
4. The hypothetico-deductive method and introspection

According to him, it is through the last method that psychology could become as objective as the natural sciences (Shehata, R., 1986, p. 331).

*Hull* also considered the divergence of psychological schools to be evidence that psychology had not yet advanced to the level of a true science (Aqel, 1987, p. 134). In building his theory, he relied on the hypothetico-deductive method to construct his explanation of learning. This method, used in mathematical sciences, was favored by *Hull*, who argued that objectivity in behavioral sciences does not mean adopting the inductive method used in natural sciences, since behavioral phenomena are difficult to subject to strict experimental validation.

The core principles of this theory include:

- Learning in both humans and animals is the acquisition of automatic habits that help the individual adapt to the environment.
- These habits are formed through conditioned associations between stimuli and responses, with repetition linked to reinforcement.
- *Hull* emphasized the effect of repeated temporal pairing accompanied by a pleasant, satisfying outcome. That is, the formation and strength of the habit connecting a particular stimulus to a response depends on the number of repetitions paired with reinforcement (Sayed, 1984, p. 21).
- He referred to the strength of the stimulus-response connection as "habit strength," which reflects the continuity of reinforcement. Learning cannot occur in the absence of reinforcement, as it fulfills the individual's needs (Shehata, R., 1986, p. 336).
- He rejected any hypothesis suggesting that goals, alongside stimuli, play a significant role in determining and directing behavior during learning.
- All forms of classical conditioning and trial-and-error learning can, according to *Hull*, be explained by a single principle: generalization.
- Reinforcement is a necessary and sufficient condition for learning to occur. Without drive and reinforcement, learning becomes impossible.
- Reinforcement serves to strengthen the bond between stimulus and response.

There are two types of reinforcement:

- Primary reinforcement, which results from the satisfaction of a primary drive
- Secondary reinforcement, which results from the satisfaction of a secondary drive (Sayed, 1984, p. 23).

## Sixth: *Bruner*'s Theory of Cognitive Development

Jerome S. Bruner, one of the contemporary psychologists, advocated for the need to improve the educational process both quantitatively and qualitatively. In his book titled *Vers une théorie de l'enseignement* (*Toward a Theory of Instruction*), he strived to provide a clear and integrated picture of the structure of the subject matter for learners — meaning the collection of principles, concepts, generalizations, and research methods that led to these foundational pieces of knowledge. (Ajili et al., 1996, p. 73)

The fundamentals of his theory include:

1. His emphasis that the methods and approaches learners use to represent reality take three forms:
    - a) **Enactive representation** (practical activity)
    - b) **Iconic representation** (imagery or visualization)
    - c) **Symbolic representation** (use of language or symbols)
2. Enactive activity refers to the actual performance of a specific mental operation.
3. A symbol differs from the object it represents. There is a distinction between the spoken or written word and the real-world entity it signifies.
4. He focused on the role of language in thinking and learning, considering it a tool offered by culture and environment to help the child expand the use of the mind — that is, to facilitate learning.
5. Cognitive development in children occurs through acquiring the methods that allow them to represent the organization and coherence of surrounding objects effectively.
6. Language has roots that are independent from the roots of thinking. While language emerges from biological origins, thinking results from experience and learning.
7. Symbolic representation, especially through language, embodies the final structure of thought.
8. *Bruner* emphasized the role of both formal and informal educational institutions in promoting cognitive development. At the same time, he did not overlook the influence of genetic and innate factors. (El-Sayed, 2000, p. 201)
9. *Bruner*'s theory provided invaluable assistance to curriculum designers and educators by offering a vision of how learners develop cognitive structures (concepts) through perceiving the properties of things and recognizing similarities and differences between them.

His educational principles include:

- **The Principle of Motivation**: Learning depends on the learner's readiness and orientation toward learning.
- **The Principle of Cognitive Structure**: The effectiveness of learning is linked to the accuracy of choosing the appropriate teaching method suited to the learner's cognitive development level and their capacity to comprehend the presented material.
- **The Principle of Sequencing**: The way learning content is organized facilitates ease of learning, reducing the effort required from both teacher and learner.
- **The Principle of Reinforcement**: Reinforcing behavior in a desired direction increases the likelihood of repeating that behavior in similar future situations. (Mosabeh, 2014, pp. 141–142)

**Conclusion:**

From the findings of this research, we can draw several conclusions:

- Despite their differences in origin and diversity, these theories converge in treating learning as an acquisitive activity.
- The behaviorist school focused its understanding of learning as a set of conditioned responses to environmental stimuli.
- Procedural and performance skills are acquired through processes of conditioning, reinforcement, training, and trial and error.
- The Gestalt theory links learning to achieving insight into the holistic field of the learning subject, reaching its true meaning and organizational principles, and being able to generalize this understanding to other situations.
- Behaviorism portrays the learner as responsive to external stimuli and equates learning with observable changes in behavior, focusing on outward behavioral modifications.
- The constructivist theory ties learning to active engagement, focusing on the learner as the central agent in the teaching-learning process.
- Constructivism emphasizes internal cognitive processes of human thinking.

Finally, we conclude that there is a significant overlap among these theories. They are hardly separable in their benefits and value within the educational and learning domain.

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