

---

**Quadrant-I      E-Text****Details of Module and its structure**

<b>Module Detail</b>	
<b>Subject Name</b>	<b>Education</b>
<b>Course Name</b>	<b>Understanding the Learner</b>
<b>Course Code</b>	<b>EDU502</b>
<b>Module Name/Title</b>	<i>Learning: process and characteristics of learning ; factors influencing learning and laws of learning</i>
<b>Module Code</b>	<b>UTL007</b>
<b>Pre-requisites</b>	Basic knowledge about principles of growth and development with specific reference to cognitive development.
<b>Learning Outcome</b>	After going through this lesson, the learners will be able to <ul style="list-style-type: none"><li>• Define learning.</li><li>• Describe the process of learning.</li><li>• Write down the characteristics of learning.</li><li>• Enlist various factors influencing learning.</li><li>• Explain laws of learning with suitable examples.</li></ul>
<b>Keywords</b>	Analogy, Behavior, Barriers, Feedback, Maturation, Motivation, Reinforcement

**Development Team**

<b>Role</b>	<b>Name</b>	<b>Affiliation</b>
<b>Principal Investigator (PI)</b>	<b>Dr S K Bawa</b>	<b>Central University of Punjab, Bathinda</b>
<b>Subject Matter Expert (SME)</b>	<b>Mrs. Ramanpreet Kaur</b>	<b>Shukdeva Krishna College of Education for Girls, Moga (PB.)</b>

**Table of Contents**

<b>Sr. No.</b>	<b>Title</b>	<b>Page No.</b>
1.	Introduction	3
2.	Definition of Learning	3
3.	Characteristics of Learning	3-4
4.	Process of Learning	5-6
5.	Factors Influencing Learning	6-8
6.	Laws of Learning	8-12
7.	Summary	12
8.	References	13
9.	Glossary	14
10	Self Assessment	15-16

## 1. INTRODUCTION

Learning is a comprehensive term which is said to be equivalent to modification & improvement thus leading to adjustment. It tends to leave permanent effects on the individual. In other words, learning is a change in behavior, influenced by previous behavior. Therefore, knowledge, habits, attitudes, interests and other personality characteristics are all the result of learning. An individual starts learning right in the womb of the mother and lasts till the individual survives. Experience, direct or indirect plays a major role in moulding the behavior of the individual. For instance, while playing the child gets in contact with the edge of a pin, he immediately withdraws from it. This experience of his will make him more cautious while dealing with sharp edge objects. Likewise, experiences to great extent lead to modification of individual's behavior. These changes in behavior are commonly known as learning.

*Acc. to Kingsley and Garry (1957)*

"Learning is the process by which behaviour (in the broader sense) is originated or changes through practice or training.

*Acc. to Hilgard (1958)*

"Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in the activity cannot be explained on the basis of native tendencies, maturation or temporary states of organism".

*Acc. to Kimble (1961)*

"Learning is a relatively permanent change in behavioural potentiality that occurs as a result of reinforced practice."

*Acc. to Crow and Crow (1973)*

"Learning is the acquisition of habits, knowledge and attitude".

## 2. CHARACTERISTICS OF LEARNING

The above stated definitions reveal the following characteristic features of learning:

### **2.1 Leads to change in behavior :**

Learning leads to relatively permanent change in behavior. When an individual learns, both his nervous system and behaviour undergo changes. However, it is on the basis of observed changes we assume that learning has taken place and not on the basis of the changes that occur at the synaptic level that we make the decision of whether learning has taken place or not. If an individual is seen performing a particular skill (like cycling, driving a car or any other) which he was not able to do earlier, is said to have learned

to have learnt to perform that particular skill. It is significant that the changes are publicly observable and can be observed directly or recorded.

### **2.2 Learning is measurable among individuals:**

The term ' Learning' refers to changes which occur with respect to the actions, attitudes ,understandings or anything else of individual learners. While tracking the progress of a particular class, test is administered to individual students and the result of each child is cumulated. It implies that any procedure which is used to study learning must be capable of tracking changes (over time) in the competencies of individual learners.

### **2.3 Learning is purposeful in formal classroom settingsl:**

Learning is goal- oriented. In case of absence of purpose, there would be hardly any learning. Most individuals have definite ideas about what they want to do. The goals may be short term or long term. Individual needs and attitudes determine to what extent the child learns as much as what the instructor wants them to learn. That is, student's goals are of paramount significance in the process of learning.

### **2.4 Learning is a result of experience**

Since learning takes place individually, one's experience has significant role to play in it. While observing a particular event two people react differently and learn different things from it based on their previous experiences. May it be mental or motor activity, learning is influenced by actual experience.

### **2.5. Learning can be transferred**

“Learning is acquiring knowledge and skills and having them readily available from memory so you can make sense of future problems and opportunities.”

(Prof. Henry L. Roediger )

Transfer of learning refers to learning in one context and applying it to another i.e. the capacity to apply the acquired knowledge and skills to new situations. This transfer can occur in several ways like occurring from prior knowledge to current, from one discipline to another and from one situation to another.

### **2.6. Learning is a process:**

Learning is a process which leads to product. The process gets initiated once the individual learner sets the goal and is motivated to achieve the goal. Learner acts and tries to remove/minimize the barriers leading to selection of most appropriate response. As result he receives reinforcement which paves the way towards achievement of goal .This ultimately brings the desired changes in the behavior of individual.

## **2.7. Learning is a comprehensive process**

All learning includes three domains: cognitive, conative and affective. However, as the immediate measurement of learning narrowly focuses on the acquisition of knowledge and skills and the affective (i.e. emotional) domain is more or less neglected during assessment and evaluation. Whenever an individual is learning something, the learning takes place in all the domains. **For example**, a class learning to apply the scientific method of problem solving may learn the method by trying to solve the real problems. But while doing so, the class engages in verbal learning and sensory perception, interactions at the same time.

## **2.8. Learning may be positive or negative**

As learning leads to change in behavior, that change may not be always desirable leading to improvement. There are equal chances of getting drifted towards the negative side of human personality. That is why it becomes the responsibility of elders-may it be at home or school to provide conducive environment in order to minimize the negative side.

## **2.9. Learning is universal and continuous**

Every living creature learns. It is the man who learns most. Every human being learns, irrespective of age, caste, race or culture. Also, learning takes place from womb to tomb. Everyday new situations are faced and the individual has to bring desired changes to tackle the situation.

# **3. PROCESS OF LEARNING**

Every individual learns from birth to death. The process of learning includes the following steps:

## **3.1 Motivation**

An individual must be motivated to learn. Motivation may be: Internal or External. That is, a learner may have intrinsic choice of learning or may be motivated through external factors to learn.

## **3.2 Response/Action**

When an individual gets motivated, he does variety of responses in order to, initiate the learning. Response can be in the form of approaching friends, teachers or may be neighbours to remove the barriers leading to taking of correct response. An instructor, looking for a book in the library or trying to create a suitable environment etc.

## **3.3 Barriers**

A learner while making variety of responses faces barriers. These barriers in a way force the learners to make and select the correct action. Barriers may be noise in the library, unavailability of instructor or may be some slight physical or mental illness.

## **3.4 Selection of Correct Action**

The learner tries to remove the barrier/barriers and while doing so select the correct action. He/she may be assisted by parents, friends, teachers or may be neighbours to remove the barriers leading to taking care of correct

response.

### 3.5 Reinforcement

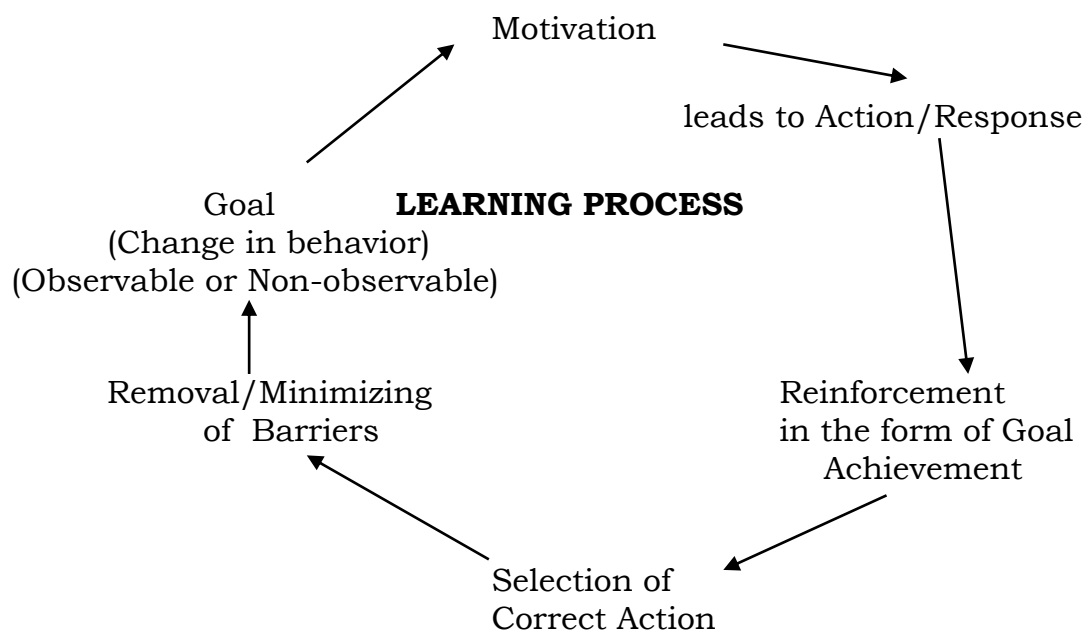
Once learner takes the correct action, he gets reinforced by getting the desired result. The knowledge of result reinforces him to continue the process of learning.

### 3.6 Achievement of Goal (Leading to change in behavior)

Reinforcement leads to continuity in the process resulting into the achievement of goal. The goal may be to learn driving, to get good marks in examination or any other.

Let us understand the above stated process with the help of an *example*:

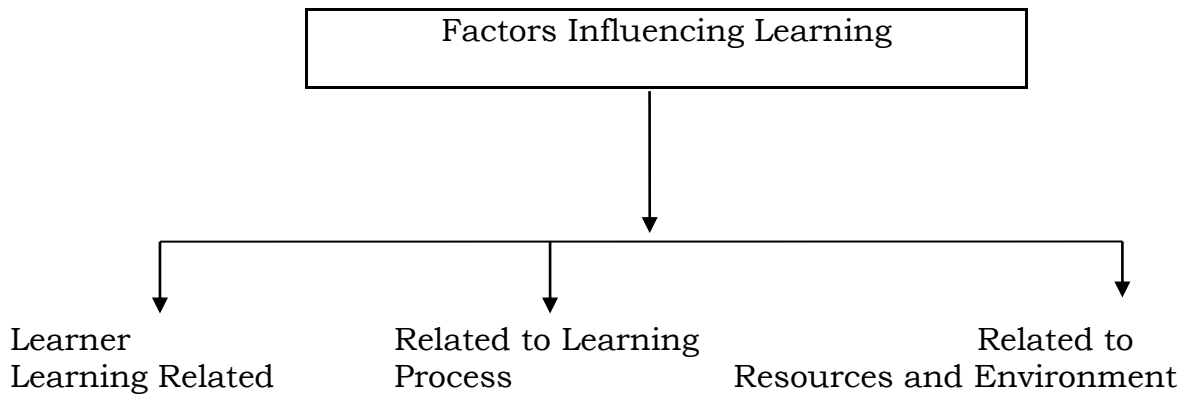
A student gets motivated by looking at his friend to score high in exams. In order to score high, he takes several actions like looks for quality content in various books, may be seeks help of tutors/teacher for better understanding etc. While doing so, he may find difficulty in searching for quality content, good guide, etc. Learner removes or minimizes the barrier/barriers by taking appropriate action. He manages to get the desired contents, guidance or environment leading to good preparation for the exams. Appearing in the first exam and attempting them in the satisfactory manner reinforces him to learn in the same manners. By doing so, learner not only achieves his goal but successfully complete the learning process.



**Figure 1.1 Showing Process of Learning**

## 4. FACTORS INFLUENCING LEARNING

Learning is a comprehensive term which influenced by several factors. These factors can be broadly categorized as under:-



**Figure 1.2 Showing factors Influencing Learning**

### 4.1 LEARNER RELATED

Learner is the focal point in the learning process.

#### 4.1.1 Motivation:

Learning is greatly influenced by the level of motivation of the learner. Greater the level of motivation, greater will be the effectiveness of learning. Teaching-learning situation, therefore, must be created appropriately so that learner gets the correct level of motivation to initiate learning.

#### 4.1.2 Physical and Mental Health:

Learning is also influenced by the health of the learner-may it be physical or mental. Slight pain, injury or mental disturbance can adversely affect the learning capacity of the learner. On the other hand, sound physical and mental health can prove to be a great asset to boost the learning.

#### 4.1.3. Basic potential of the learner:

Learner's innate abilities, interests, attitudes, aptitudes also exert a great impact on the learning. His basic knowledge, understanding and skills related to a particular area also affect the learning.

#### 4.1.4. Maturation of the learner.

Learning and maturation go hand in hand. We learn things according to the maturity of our body. For example, an infant cannot learn to ride a bicycle even after vigorous training, as it requires muscular maturity. Learning capacity varies with age. Thorndike says that mental development increases up to the age of 23 and halts after 40. Learning proceeds rapidly

between 18 and 20, remains stagnant till 25 and then declines up to 35. Age accompanies mental maturation. So some complex problems cannot be solved till the person is sufficiently mature.

#### **4.1.5. *Fatigue.***

Fatigue-may be muscular or sensory causes indolence. It may be due to numerous personal or environmental factors. Even long continuous hours of study also cause fatigue which affect the learning capacity.

### **4.2 RELATED TO LEARNING PROCESS**

#### **4.2.1. *Time of learning***

Experiments have shown that children show great variations in their learning efficiency during the different hours of the day.

#### **4.2.2. *Correlating one area with another:***

Correlation facilitates the process of learning by allowing maximum transfer. The correlation may be done among different subjects or with real life situation.

#### **4.2.3. *Spaced or un-spaced method:***

Learning continuously without gap may lead to saturation in the span of attention. Therefore, it is advisable to keep small intervals between each reading.

#### **4.2.4. *Maximum utilization of senses:***

As senses are known as the gateway of knowledge, so evidently learner learns maximum when his senses are used in the process. That is why, practical hold an important place in the teaching-learning process.

#### **4.2.5. *Revision and practice:***

It is said that practice makes a man perfect, which means practice and repetition helps in fixing the learned material thus enhancing the effectiveness of learning.

#### **4.2.6. *Knowledge of Result as feedback.***

Knowledge of result acquaints the learner with his strengths and weaknesses which helps in taking remedial action and thus enhancing learning.

### **4.3 RELATED TO LEARNING RESOURCES**

Learning resources (may it be men or material related) exert a great influence on learning. These may be elaborated as under:



### **4.3.1 Teacher's Competence:**

Quality of the teacher in terms of knowledge of the content, teaching skills possessed, teaching experience etc have a good deal of influence in bringing the effectiveness of learning. The way in which teacher interacts with the personalities of the pupils helps to determine the kind of behaviour which emerges from the learning situation.

### **4.3.2 Interpersonal Relationships:**

May it be teacher-pupil, pupil-pupil, school-staff relationship at school or mother-father, parent-children or sibling relationship at home, all influence the learning capacity of the child.

### **4.3.3. Availability of Learning Material:**

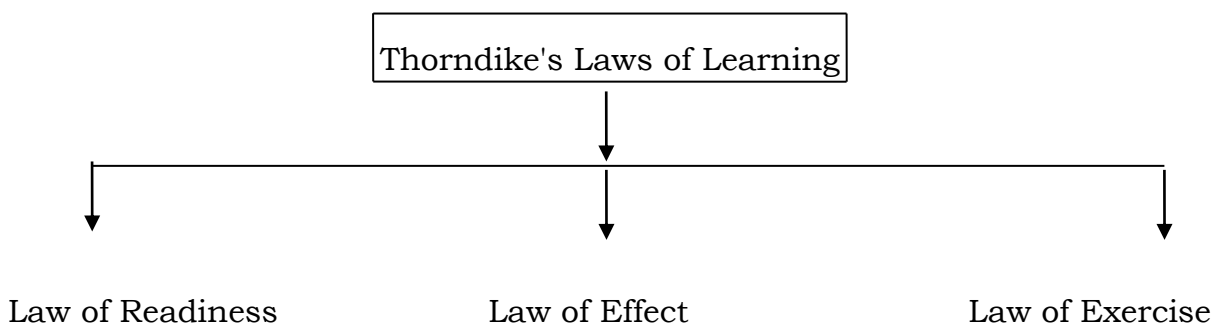
Availability of library or quality learning material like text books, laboratory facilities enhance the learning. Pupil may suffer in absence of any of these.

### **4.3.4. Appropriate Physical Environment:**

Provision of proper seating arrangement and proper ventilation have a positive impact on the learning of the students.

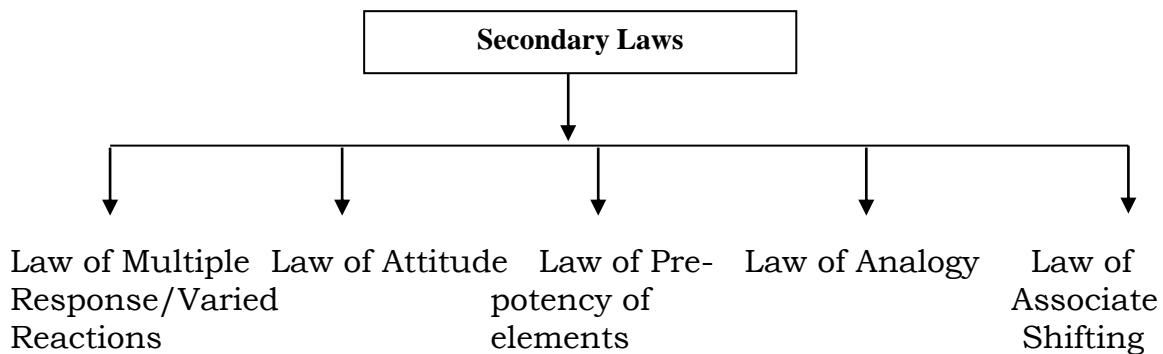
## **5. LAWS OF LEARNING**

Educational psychologists have identified several principles of learning, also referred to as, **laws of learning**. These laws provide insight into what makes learner learn most effectively. Initially, **E.L.Thorndike** propounded 3 laws of learning.



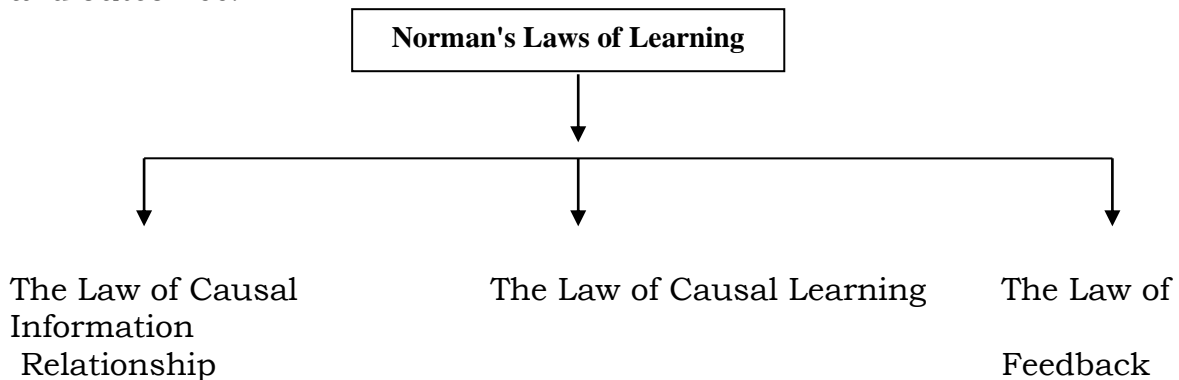
**Figure 1.3 Showing Thorndike's Laws of Learning**

In addition to these Thorndike developed 5 secondary laws



**Figure 1.4 Showing Thorndike's Secondary Laws of Learning**

Further, in 1970's **Donald Norman** summarized his thoughts on learning in three laws, all of which emphasize the causal relationship between actions and outcomes.



**Figure 1.5 Showing Norman's Laws of Learning**

These Laws can be explained as under:-

**5.1 The Law of Readiness:**

" You can lead a horse to the water but you cannot make it drink"

It was the first law given by E.L. Thorndike. By readiness he meant that when a learner is ready to respond or act, making the learner give the response is satisfying but preventing him from giving response leads to annoyance. If the child is ready to learn, he learns more effectively than if he is not ready to learn. In other words, law of readiness implies following 3 situations:

- For a conduction unit ready to conduct, to conduct is satisfying.
- For a conduction unit ready to conduct, not to conduct is annoying.
- For a conduction unit not ready to conduct, to conduct is annoying.

*Educational Implications:*

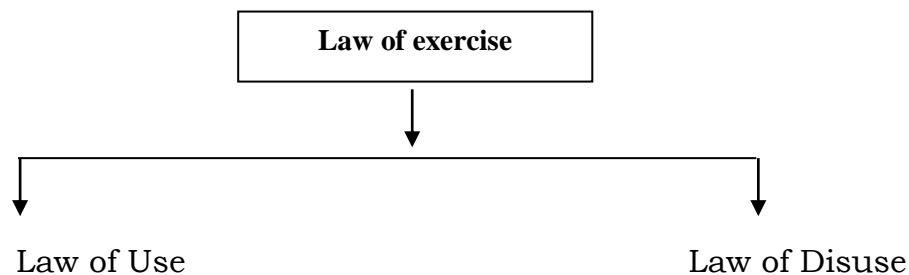
5.1.1 *The teacher should arouse curiosity among pupils so that they are ready to gain new experiences.*

5.1.2 *Organisation of curriculum should be according to the mental level of the child. It would prepare the child to gain successive learning experiences.*

## **5.2 The law of exercise:**

### **"Practice makes a man perfect"**

It is also known as "law of frequency". "This law can be divided into two sub-parts:



**Figure 1.6 Showing Division of Law of Exercise**

**Law of use** advocates that the connection between stimulus and response gets strengthened by its continuous use, exercise or recurrence. **Law of disuse**, on the other hand, advocates that the bond between stimulus and response gets weakened if its use is discontinued.

*Educational Implications*

5.2.1. *Use of repetition and drill ensures effective learning.*

5.2.2. *Once learnt, teacher should provide opportunities for continuous practice as delayed use may cause forgetfulness.*

## **5.3. The Law of Effect**

*"Nothing succeeds like success"*

This law states that the strength gets increased when the connection is accompanied by pleasant or satisfying state of affairs. In the parallel sense, if the child meets unpleasantness or failure or dissatisfaction, the progress gets blocked.

*Educational Implications:*

5.3.1. *Teacher can encourage the child to learn effectively by making use of reward.*

5.3.2. *Punishments should be completely avoided as it causes a negative impact on the learner.*

#### **5.4 Thorndike's Revised Laws of Learning (after 1930)**

5.4.1. *There was no change in law of readiness.*

5.4.2. *Law of exercise was criticised by Thompson which was further accepted by Thorndike. He accepted that mere mechanical use or disuse does not necessarily lead to effective learning or forgetting.*

5.4.3. *Later on, Thorndike realised that where rewards do strengthen the bond between stimulus and response, punishment does not necessarily decrease the strength of this bond.*

### **SECONDARY LAWS**

#### **5.5 Law of Multiple Response/ Varied Reactions**

According to it, when an individual confronts with a new situation, he responds in a variety of ways till the appropriate behaviour is hit upon. For example, if an individual wants to solve a puzzle, he will try in various ways rather than mechanically proceeding in one similar way.

#### **5.6 Law of Attitude**

Learning is influenced by the attitude of the learner. It determines not only what the person will do but what will satisfy or annoy him. For instance, if the student sets the attitude to stand first in examination he would spend more quality time in studying, thus enhancing his learning.

#### **5.7 Law of Pre-potency of elements**

This law says that the learner selects the essential or important element and neglects the other which may be irrelevant or unimportant.

#### **5.8 Law of Analogy**

According to this law, the individual responds to a new situation by making use of his earlier experiences. **For example**, learning to drive a motor cycle is facilitated by his earlier experience of riding a bicycle.

## 5.9 ***Law of Associative Shifting***

According to this law, "Any response may be elicited from the learner, of which he is capable, in association with any situation to which he is sensitive." Thorndike illustrated this by the act of teaching a cat to stand up at a command. Initially he used a piece of fish and oral command of 'stand up' to make cat stand up. After a number of trials, it was found that oral command alone evoked the response of standing up.

With the passage of time, various psychologists gave their views regarding the theories of learning. Norman disagreed with those theories which view learning as an automatic process as in Thorndike's 'Law of Effect'. Rather, he emphasized the information from experience. He closely followed Jean Piaget by assuming that when something is remembered or learned it is added to what has already been learned. Norman (1976) summarized his thoughts on learning in three laws, which emphasize the causal relationship between actions and outcomes.

### ***5.10 The Law of Causal Relationship:***

According to this law, an apparent causal relationship between a specific action and its outcome is required to learn their relationship.

### ***5.11 The Law of Causal Learning:***

It states " For desirable outcomes the learner attempts to repeat those particular actions that have an apparent causal relation to desired outcomes. For undesirable outcomes, the learner attempts to avoid those particular actions that have an apparent relation to the undesirable outcomes".

That is , this law can be studied under two parts for desirable outcome or for undesirable outcomes.

Further, the term " apparent" in this causal law implies that learners can only infer logical relationships between actions and outcomes. These may not reflect the physical situations that exist in the real world.

### ***5.12 The Law of Information Feedback***

According to this law, the outcome of an event serves as information about that event.

## 6. Summary

Learning is defined as a process which brings change in the behavior of individual-both overt and covert. Change in behavior occurs through experience, practice or training. Learning is a comprehensive process which is universal and purposeful. Importantly, change in behavior can be positive or negative. An individual learns throughout life i.e. from womb to tomb. Learning also gets transferred from one's own previous experience to current one or from one situation to another.

The process of learning gets initiated once an individual is motivated. The motivation may be intrinsic or extrinsic. Once an individual is motivated, he acts towards his goal. While making several actions/responses, he is confronted with barriers. Learner makes efforts to remove barriers and while doing so he selects correct action which reinforces him to continue in the same direction ultimately leading to change in behavior/achievement of goal.

Learning is influenced by several factors which can be studied under three major categories as-a) Related to learner b) Related to learning process and c) Related to learning resources and environment. Several psychologists have worked upon the principles which underlie the effective learning called as 'laws of learning'. In this regard, initial experiments were conducted by Thorndike who gave three basic laws viz a viz-Law of Readiness, Law of Exercise and Law of Effect. These were further revised (after 1930) as a result of criticism. Thorndike also gave some secondary laws namely law of multiple response, law of Attitude, Law of Pre-potency elements, law of Analogy and law of Associated shifting.

Donald Norman, to some extent disagrees with Thorndike and emphasizes upon information from experience. He has summarized his thoughts on learning in three laws (1976) as-law of causal relationship, law of causal learning and law of information feedback.

### Quadrant –III

### Learn More/ Web Resources/ Supplementary Materials

#### Books, articles, research papers, journals, case studies, etc:

*Bhatia, K.K.(2003). Bases of Educational Psychology, New Delhi: Kalyani Publishers.*

*Chauhan, S.S. (2004). Advanced Educational Psychology, New Delhi: Vikas Publishing House.*

*Eggen, P.& Kauchak, D.(1999). Educational Psychology. New Jersey: Prentice Hall.*

*Galavotti, I.(2018). Experience and Learning in Corporate Acquisitions: Theoretical Approaches. Retrieved from [https://books.google.co.in>books](https://books.google.co.in/books).*

*Gandhi, D.B. (2010). Educational Psychology: Thorndike's Laws of learning and it's Educational Implications. Retrieved from [dgwaymade.blogspot.com](http://dgwaymade.blogspot.com).*

*Mangal, S.K. (2005). Advanced Educational Psychology. New Delhi: Prentice Hall of India.*

*Nanda,S.K.,Nanda,V. (2007). Modern Approach to Educational Psychology , Jalandhar :Modern Publishers.*

*Oberoi, S.C. (2007). Educational Technology. New Delhi: Arya Book Depot.*

*Singh, Agyajit.(2018). Growth and Development of the Learner, Patiala.Twenty First Century Publications.*

*Singh,Paramvir.(2018). Growth and Development . New Delhi: Kalyani Publishers.*

*Walia,J.S. (2003). Technology of Teaching . Jalandhar : Paul Publishers.*

*Wittrock, M.C. & Farsey, F. (2017). The Future of Educational Psychology. Retrieved from <https://books.google.co.in.>books>.*

#### Weblinks

[https:// www.coursehero.com](https://www.coursehero.com)

[https://en.m. wikipedia.org](https://en.m.wikipedia.org)

<https://www.flightliteracy.com>

<https://johnparankimalil.wordpress.com>

<https://www.learningscientists.org>

<https://link.springer.com>

<https://www.psychologydiscussion.net>

<https://www.slideshare.net>

<https://www.tecks.co.nz>

[www.yourarticlelibrary.com](http://www.yourarticlelibrary.com)

## **GLOSSARY**

*Analogy:* Analogy is a linguistic comparison of two objects that emphasizes the similarities between the two objects. These analogies are often used as a means of describing a new object / concept by comparing it with something familiar.

*Attitude:* Attitude is the way of thinking or feeling about something. It is the perspective with which an individual looks at.

*Affective Aspect:* It is one of the three aspects: the cognitive, the conative, and the affective, described in modern psychology. Affective means the emotional meaning of an utterance. It involves a person's feelings or emotions about the object.

*Behavior:* Behavior is the organism's internal reactions to its environment. It is the response of an individual to the stimulus.

*Barriers:* Barrier means the hindrance or disturbance which create block in the path of some activity. Barriers may be external or internal to an individual.

*Cognitive Aspect:* Cognitive refers to 'mind' or 'mental action'. It is concerned with the mental process of perception, memory, judgment and reasoning.

*Conative Aspect:* Conative aspect refers to motor activity. Where, cognitive part of the brain measures intelligence, the affective deals with emotion, the conative aspect deals with how one acts on those thoughts and feelings.

*Feedback:* Feedback means information about the results of a process which can be used to bring changes in the process itself.

*Maturation:* Maturation can be interpreted as relatively permanent change in an individual-be it cognitive, emotional or physical. It occurs as a result of biological ageing.

*Motivation:* Motivation is defined as the process that initiates and guides the goal oriented behaviors. It is what causes one to act.

*Reinforcement:* Reinforcement means to strengthen the probability of occurrence of a specific response. These are the stimuli which strengthen or weaken specific behaviors.



## QUADRANT-IV

## SELF-ASSESSMENT

### 1. Select the appropriate answer from the given options:

1.1 "Learning is the acquisition of habits, knowledge and attitude." has been propounded by:

- a) Hilgard                       b) Crow and Crow   
c) Kingslay and Garry                       d) Kimble

1.2 This law as formulated by Thorndike states that, "When someone is ready to perform some act, to do so is satisfying. When someone is not ready to perform some act and is forced to do so, it is annoying."

- a) Law of Exercise                       b) Law of Readiness   
c) Law of Effect                       d) Revise law of exercise

1.3 Which law of learning is also called as the 'law of use and disuse'?

- a) Law of Attitude                       b) Law of Readiness   
c) Law of Exercise                       d) Law of Associative Shifting

1.4 Learning as a process is initiated by:

- a) Barriers                       b) Selection of Action   
c) Motivation                       d) Reinforcement

1.5 Which law states that individual responds to a new situation by making use of his earlier experiences?

- a) Law of pre-potency of elem                       b) Law of multiple response   
c) Law of exercise                       d) Law of analogy

1.6 This law emphasizes that drill & practice ensure effective learning.

- a) Law of Effect                       b) Law of Causal Relationship   
c) Law of Exercise                       d) Law of Associative shifting

1.7 Learning as a process takes place as.

- a) Response → Barriers → Motivation → Reinforcement   
 → Selection of Correct Action → Achievement of Goal (change in behavior)
- b) Motivation → Barriers → Response → Reinforcement   
 Selection of correct Action → Achievement of Goal
- c) Motivation → Response/Action → Barriers →   
 Selection of correct Action Reinforcement → Achievement of Goal  
 (change in behavior)
- d) Response → Barriers → Motivation → Selection   
 of correct Action → Reinforcement → Achievement of Goal  
 (change in behavior)

1.8 The law of information feedback was given by:

- a) Lindsay       b) Bandura   
 c) E.L. Thorndike       d) Donald Norman

1.9 Thorndike illustrated the law of Associative shifting by conducting experiment on:

- a) Cat       b) Monkey   
 c) Dog       d) Rat

**2. Write true or false against each statements.**

2.1 Learning encompasses modification in all these aspects - cognitive, conative as well as affective.

2.2 All learning leads to positive development in the behavior of individuals.

2.3 Mental Development increases upto age of 23 and halts after 40.

2.4 The process of learning ceases when the individual reaches old age.

2.5 *Experiences may be direct or indirect influence learning .*

---

*Answer Key*

1.1.(b),1.2(b),1.3.(c),1.4(c),1.5.(d),1.6(c),1.7.(c),1.8.(d),1.9.(a)

2.1.(True),2.2.(False),2.3.(True),2.4.(False),2.5.(True)