

## Original Article

### Thorndike's Theory in modern education

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Manuscript ID:

JRD -2025-171001

ISSN: 2230-9578

Volume 17

Issue 10

Pp. 1-3

October. 2025

#### Abstract

*Thorndike's intelligence theory is used in modern education because it believes that intelligence is not a single element, but a combination of various mental powers. Using the principles of this theory, teachers can teach students based on different powers and skills and teach them according to their specific needs. It is used in modern education to identify the individual ability of the students and to train according to their weaknesses and strengths. Thorndike gives an idea that it is made up of three different elements: abstract, mechanical and social. This idea helps teachers to identify students' skills and interests, including abstract thoughts, mechanical work, and social relations. Based on this information, teachers can determine the appropriate teaching method for the students on the basis of interest and skills.*

**Keywords:** *Emphasis on stimulation and reaction, Impact law, Error correcting, Repeat and practice, Applied in Teaching, Thorndike's Connectionism, Trial and Error Theory, Formula of Thorndike, characteristics of learning through trial and error.*

Submitted: 15 sept. 2025

Revised: 25 sept. 2025

Accepted: 10 oct. 2025

Published: 31 Oct. 2025

#### Introduction:

##### Emphasis on stimulation and reaction:

Thorndike's theory of theory emphasizes the connection between stimulus and reaction, which is relevant in modern education. Teachers create the curriculum in such a way that the correct response to the students is created from the specific stimulus or work. Impact of Law: It acts as an effective method for students. When the teacher rewarded in an correct answer or good work, the students are encouraged to do that behavior again and again.

##### Error correcting:

When the students make a mistake, they quickly correct it and return the right path. The teacher should identify the cause of the mistakes and arrange for quick correction so that the students do not make the same mistake again and again.

##### Repeat and practice:

Repeatedly practiced and repeated to export a particular behavior or knowledge among the students.

##### Applied in teaching:

Thorndike's theory has made the modern education system more observable-based and result-centered. Teachers can evaluate students' performance and correct the mistakes quickly. Educational techniques based on this theory help to make education more effective and student-friendly.

##### Thorndike connectionism:

American psychologist Edward Lee Thorndike explained the trial and error technique by establishing a connection between stimulus and response. He conducted various experiments on learning in various animals and published his theory on learning in the journal 'Animal Intelligence'. According to him, "Learning is due to the connection stimulus and response." That is, learning is the establishment of the appropriate connection between stimulus and response. This is why this theory is called additivism.



Quick Response Code:



Website:

<https://jrdrvb.org/>

DOI:

10.5281/zenodo.17548321



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#### How to cite this article:

Soyel, K. A. (2025). Thorndike's Theory in modern education. *Journal of Research and Development*, 17(10), 1–3. <https://doi.org/10.5281/zenodo.17548321>

According to Thorndike, learning is created by the connection of several mental units such as sensation, perception, representation, etc. This is called associationism.

### Testing Thorndike's Trial and Error Theory:

According to Thorndike, animals learn through repeated trials and errors. Thorndike conducted experiments on dogs, cats, humans, etc., but his experiment on hungry cats is particularly notable. In the first stage, when an animal tries to learn something, it makes mistakes, and learning occurs through a gradual reduction in the level of those mistakes and a change in its actual behavior.

To conduct a trial and error experiment, he placed a hungry cat in a cage and placed food (fish) outside. The cage had a door that had to be opened by pressing a lever mechanism at a specific point on the cage.

The hungry cat in the cage, upon seeing food, began to run around aimlessly and chaotically. After trying in vain for some time, it suddenly stepped on a lever mechanism in a certain place and the door opened.

He repeated the experiment a second time. The cat behaved as aimlessly and without plan as before. Suddenly, the door opened under his foot and the cat came out and ate the food.

Thorndike observed that the cat had no effect on solving the problem the first time. It just solved the problem of getting out of the cage with fewer attempts and in less time than the first time.

The third experiment required fewer attempts and less time. After repeating the experiment several times, Thorndike observed that the cat's unsuccessful attempts gradually decreased.

Finally, it was seen that after putting the cat in the cage, it would effortlessly open the door by pressing a specific spot, come out, and eat food without any wrong effort. This means that the cat's learning was completed.

Judging by the results of Thorndike's experiment, several stages of the learning process can be found.

### The stages are:

1. chase
2. aim
3. barrier
4. Aimless effort
5. Sudden success
6. Choosing the right method
7. Determining the correct methods

### The cat has learned to associate a stimulus with a response through trial and error. Formula of Thorndike:

He described three main principles and five secondary principles regarding how different animals react to problematic situations and how they learn.

Thorndike's main formula

- (1) Law of readiness
- (2) Law of effect
- (3) Law of exercise

(1) **The Law readiness:** Thorndike has mentioned physical preparation as the main principle of learning. According to him, the person needs to be physically prepared to establish a connection between a stimulus and its appropriate response. If the person is ready to establish the connection, then he will feel satisfied if he is allowed to establish the connection. If the person is ready, then he will feel annoyed if he is forced to establish the connection.

(2) **Law of effect :** If the result of the modifiable association of stimulus (S) and response (R) is pleasant or enjoyable to the learner, then the association is strong, i.e. the S-R bond is strong. On the other hand, if the result of the association is unpleasant or annoying, then the association (S-R bond) is weak.

### 3) Law of exercise:

This formula is divided into two parts:

**Usage formula:** Stimulus, leaving all conditions unchanged, Once the changeable bond between the reaction and the stimulus is established, the strength of that connection will increase if practiced repeatedly.

**Source of abuse:** no variable stimulus-response, After establishing a bond, if they do not practice for a long time, their bond gradually weakens.

### Thorndike's secondary formula

(1) Mental preparation formula: Mental preparation of a person is especially necessary for doing any work. That is, preparation in terms of motivation, interest, attention, intelligence, memory, etc. is especially important.

(2) The multiple response principle: In trial and error learning, animals try to solve problems by responding to the same stimulus in different ways before making the correct response. This is the multiple response principle.

(3) Partial response principle: According to Thorndike, animals do not respond based on the overall situation. While responding, animals. React part-wise and move towards the whole.

(4) Analogy Principle: According to Thorndike's principle, when an animal encounters a new problematic situation, it finds partial similarities with a previous situation. It tries to find a solution by reacting to the problem in the same way it reacted to it in the past.

(5) Associative learning theory: Thorndike, in his associative learning theory, said that when an animal is able to make a response appropriate to a stimulus, that response can be associated with any stimulus.

### **Characteristics of learning through trial and error:**

When we analyze Thorndike's 'trial and error' theory, we find some characteristics. The characteristics of this learning strategy are-

- (1) Self-activity
- (2) Repetition
- (3) Conscious of purpose
- (4) Multiple reactions
- (5) Partial response
- (6) Bio-psychological preparation
- (7) Results
- (8) Analogy-based response
- (9) Decreasing number and time of attempts
- (10) Universal
- (11) Moving from the known to the unknown

### **Conclusion:**

In the modern education system, the conclusion of Thorndike's theory is that it is based on the 'effort and wrong' and 'connectionism' based on the 'connectionism', where learning is done by establishing the correct connection between stimulus and reaction. This theory has made modern education more effective because it emphasizes the importance of the student's 'preparation or interest,' practice 'or repeated efforts and' impact 'or' award 'or punishment, which improves the students' learning process. Thorndike has shown that the learning is a connection between the stimulus and the reaction. In the modern education system, the teacher helps the students to establish proper connection and encouraged to correct the mistakes. Before starting any work, the student's physical and mental preparation is emphasized, which is used to increase the interest and attention of the students in the modern class. The teacher adopted various strategies to prepare students to learn. Thorndike's theory laid the basis of behavioral teaching system, which is an important part of modern education. It has been possible to analyze the learning process in a scientific way, and the connections are strengthened by repeated practice or repetition. In the modern education system, the application of this principle is seen, where students are helpful to master something through habit. In modern education, the learning is strengthened by using positive results (eg, praise) or correct response (eg, avoiding negative results), the theory of Thorndike has laid the foundation of behavioral teaching system, which is an important part of modern education. It has been possible to analyze the learning process in a scientific way.

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