

Psychological Foundations of Education

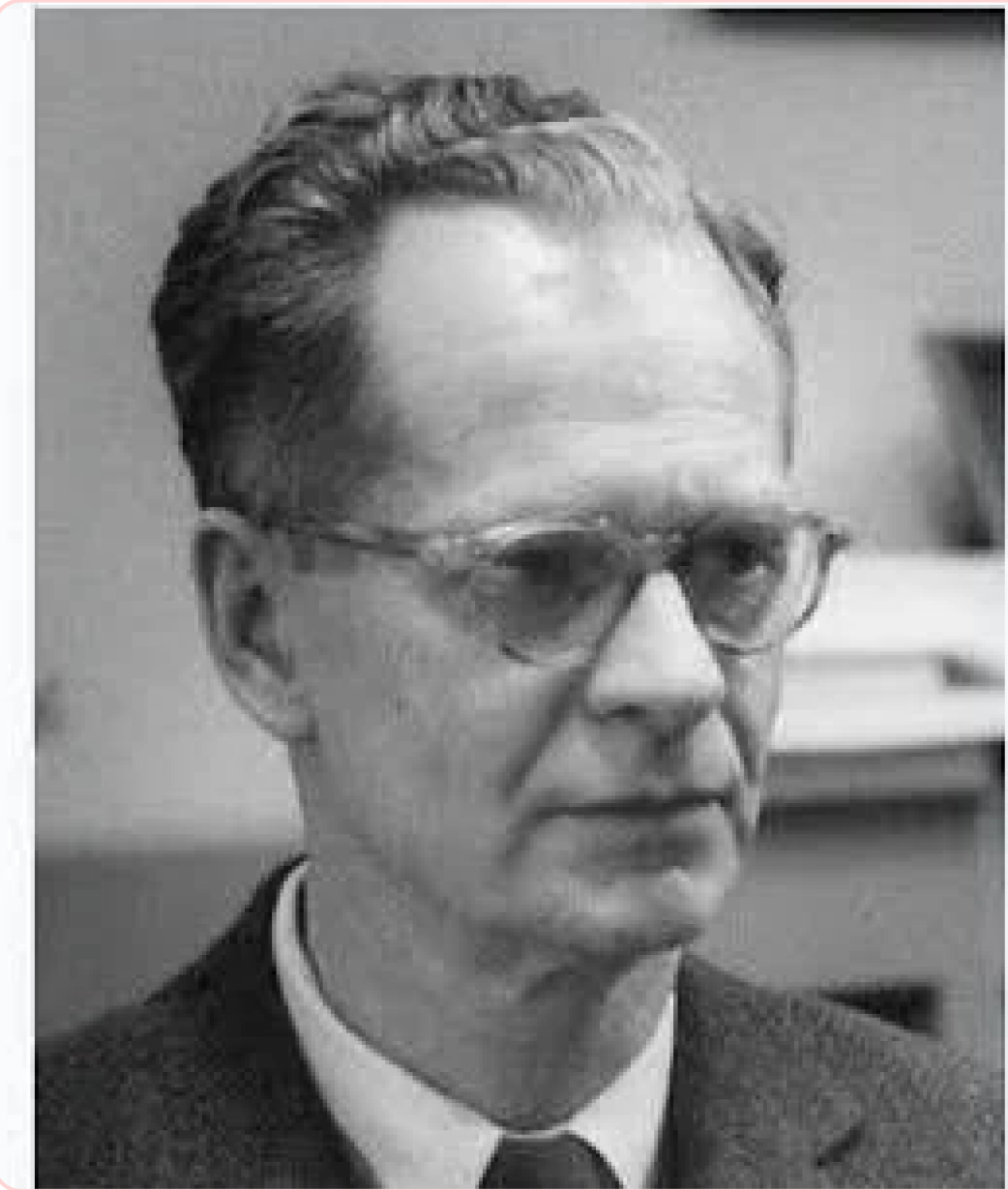
Unit III: Learning and Motivation

Skinner's Operant Conditioning

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Who Was B.F. Skinner?

- **Burrhus Frederic Skinner (1904–1990)**
- American psychologist and a leading behaviourist
- Worked as a professor at Harvard University
- Studied only observable behaviour, not the inner mind
- **Core belief: behaviour is shaped by its consequences**



Milestones

1938: *The Behavior of Organisms*

1948: *Walden Two*

1954: *Teaching machine*

1968: *The Technology of Teaching*

What is Operant Conditioning?

Learning in which behaviour is strengthened or weakened by its consequences. The learner operates on the environment, so it is called operant (also Type-R or instrumental conditioning).



Example: A student answers a question. The teacher says "Well done!" The student now raises her hand more often. The praise (consequence) strengthened the behaviour.

Key Terms to Remember

Operant

voluntary act that operates on surroundings

Reinforcer

consequence that increases behaviour

Punisher

consequence that decreases behaviour

Extinction

behaviour fades when reward stops

Shaping

rewarding small steps toward the goal

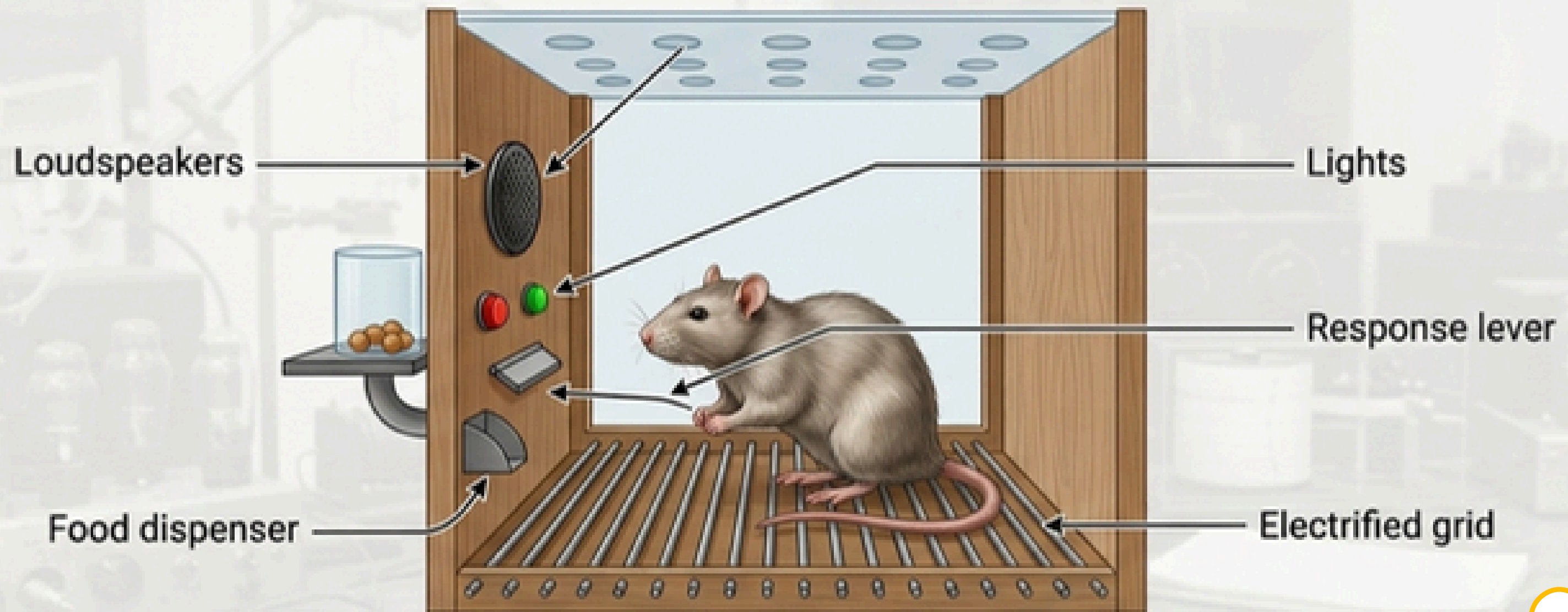
Classical vs Operant Conditioning

Point	Classical (Pavlov)	Operant (Skinner)
Behaviour	Involuntary, automatic	Voluntary, chosen
Learner	Passive	Active
Key event	Stimulus before response	Consequence after response
Learning by	Association of stimuli	Reinforcement
Example	Dog salivates at bell	Student studies for praise

The Skinner Box Experiment

- 1 Set-up:** A hungry rat is placed in an operant chamber (Skinner box) with a lever and food tray.
- 2 Chance response:** The rat moves about and accidentally presses the lever.
- 3 Consequence:** A food pellet drops into the tray (reinforcement).
- 4 Learning:** The rat presses the lever again and again to get food.

SKINNER BOX & OPERANT PRINCIPLES



From Laboratory to Classroom

In the Skinner box	In the classroom
Hungry rat	Student who needs success
Pressing the lever	Answering, doing homework
Food pellet	Praise, marks, stars
No food: pressing dies out	No reward: behaviour fades

Key idea: the consequence, not the teacher's explanation alone, decides whether a behaviour is repeated.

Reinforcement: Behaviour Increases

Positive Reinforcement

Add something pleasant

Examples:

- Praise or a star
- Good marks
- Certificate

Negative Reinforcement

Take away something unpleasant

Examples:

- Homework waived for good work
- Early break for finished tasks

Remember: both types INCREASE behaviour. Negative reinforcement is not punishment.

Punishment and Extinction

Positive Punishment

Add something unpleasant. Ex: extra work or scolding.

Negative Punishment

Take away something pleasant. Ex: loss of play time.

Extinction

Stop the reinforcement. Ex: ignoring silly jokes; they fade.

Skinner preferred reinforcement: punishment only suppresses behaviour for a while and may create fear.

Four Consequences at a Glance

ADD (Positive)

REMOVE (Negative)

Pleasant thing

Positive Reinforcement

Behaviour increases.

Ex: praise

Negative Punishment

Behaviour decreases.

Ex: loss of play time

Unpleasant thing

Positive Punishment

Behaviour decreases.

Ex: scolding

Negative Reinforcement

Behaviour increases.

Ex: homework waived

Positive / negative means add / remove, not good / bad.

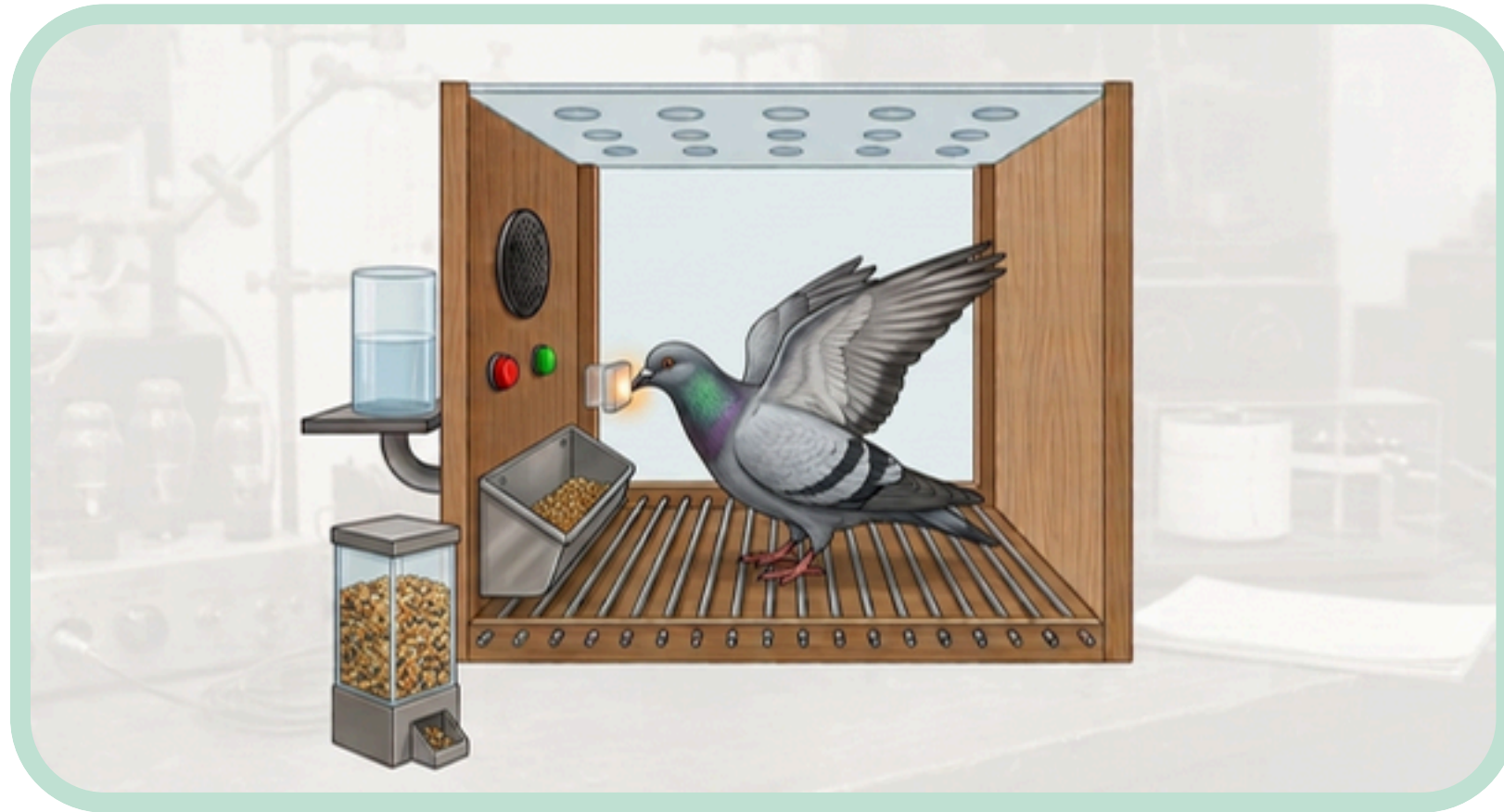
Schedules of Reinforcement

Continuous: reward every response (new learning). **Partial:** reward sometimes (lasts longer).

Schedule	Meaning	Classroom example
Fixed Ratio	After fixed number of responses	A star after every 5 correct sums
Variable Ratio	After an unpredictable number	Surprise praise for good answers
Fixed Interval	After a fixed time	Monthly test; study before it
Variable Interval	After unpredictable time	Surprise quizzes keep students ready

Shaping: Step by Step

Shaping = reinforcing successive approximations. Example: helping a shy student to speak.



CLICK HERE!



Come to the front

Read one line aloud

Read a paragraph

Give a short speech

Reward every small step until the final behaviour is learned.

Programmed Learning

- Content is divided into small steps
- Learner gives an active response
- Immediate feedback: right or wrong
- Self-pacing: own speed for each learner
- Sequence from easy to difficult



**Skinner's teaching machine (1954)
is the idea behind:**

- Quiz apps
- Language-learning apps
- Online tests
- MOOCs

Educational Implications

Reinforce immediately: praise soon after good behaviour so the link is clear.

Use positive reinforcement: praise and marks work better than punishment.

Teach in small steps: move from easy to difficult with success at each step.

Give quick feedback: return homework and tests early with comments.

Shape behaviour gradually: reward progress, not only perfect work.

Manage the classroom: reward discipline; ignore minor attention-seeking.

Respect individual pace: use self-learning and computer-assisted material.

Vary the reinforcers: mix praise, privileges and responsibility.

Operant Conditioning in the Classroom

Classroom situation	Skinner's technique
Homework on time earns praise and a star	Positive reinforcement
Punctual students skip extra drill	Negative reinforcement
Noisy student loses break time	Negative punishment
Class clown is calmly ignored	Extinction
Weak reader praised at each step	Shaping

Criticism of Operant Conditioning

Ignores the mind: thinking, insight and emotions are neglected (cognitive and Gestalt psychologists disagree).

Animals to humans: results from rats and pigeons cannot fully explain human learning.

Too much reward: students may work only for marks; real interest may fall.

Passive learner: the learner only responds; creativity and self-direction get little place.

Mechanical learning: suits facts and skills, less suited to values and critical thinking.

Individual differences: one reinforcer may not suit all; punishment can cause fear.

Thank You



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