Chapter 1:Introduction

1.Education

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, habits, and personal development. Education originated as transmission of cultural heritage from one generation to the next.

Meaning of Education- The root of Word education is derived from Latin words Educare, Educere, and Educatum. Word educare means to nourish, to bring up. The word educere means to lead froth, to draw out. The latine “educatum”, which itself is composed of two terms, “E” and “Duco”. ‘E’ Implies a movement from inward to out word and “duco” means developing or progressing. Education i s the process of facilitating learning. Knowledge, skills, values, beliefs, and habits of a group of people are transferred to other people, through storytelling, discussion, teaching, training, or research. Meaning: According to some learned people, the word "Education" has been derived from the Latin term "Educatum" which means the act of teaching or training. A group of educationists say that it has come from another Latin word "Educare" which means "to bring up" or "to raise". According to a few others, the word "Education" has originated from another Latin term "Educere" which means "to lead forth" or "to come out". All these meanings indicate that education seeks to nourish the good qualities in man and draw out the best in every individual. Education seeks to develop the innate inner capacities of man. By educating an individual we attempt to give him some desirable knowledge, understanding, skills, interests, attitudes and critical 'thinking. That is, he acquires knowledge of history, geography, arithmetic, languages and sciences. He develops some understanding about the deeper things in life, the complex human relations, and the cause and effect relationship and so on. He gets some skills in writing,

speaking, calculating, drawing, operating some equipment etc. He develops some interests in and attitudes towards social work, democratic living, co-operative management and so on.

Definition of Education by Different Authors

Education has been defined by many educationists, philosophers and authors. It is a word we hear very familiar in everyday life, because education is considered the most significant activity in any society.

Something that is important, but not independent of the number of opinions and assumptions about the meaning and definition of true education.

In this article, I intend to write the opinion of experts on education which of course will vary depending on each individual perception. This article will certainly open up our minds about how to define education.

Education is the process of training man to fulfill his aim by exercising all the faculties to the fullest extent as a member of society. **Aristotle**
Education is every interaction that happens is every association that occurs between adults with children is a field or a state where the educational work in progress. **M.J. Langeveld**
Education efforts that are deliberately chosen to influence and assist children with the aim of improving knowledge, physical and morals that can gradually deliver the child to the highest goal. In order for the child to live a happy, and all what *dilakukanya*(he did) be beneficial to himself and society. **Prof. H. Mahmud Yunus**
Education means the bringing out of the ideas of universal validity which are latent in the mind of every man. **Socrates**
Education is defined as a learning process for the individual to attain knowledge and understanding of the higher specific objects and specific. The knowledge gained formally resulting individual has a pattern of thought and behavior in accordance with the education they have gained. **Big Indonesian Dictionary (1991)**
Education is a combination of growth and human development with social legacy. Kohnstamm and Gunning (1995): Education is the formation of conscience. Education is a process of self-formation and self-determination ethically, conformed conscience. **Stella van Petten Henderson**

Education is a conscious and deliberate effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual strength of religious, self-control, personality, intelligence, noble character, and the skills needed themselves and society. **Wikipedia**

Education is all one with growing; it has no end beyond itself. (Education is everything along with growth; education itself has no final destination behind him). **John Dewey (1978)**

In the broadest sense, education is the device by which a social group continued existence renew yourself, and defend his ideas. **H.H Horne**

Modes of Education

1.Formal Education

2.Informal Education

3.Non-formal Education

Formal Education

Formal education or formal learning usually takes place in the premises of the school, where a person may learn basic, academic, or trade skills. Small children often attend a nursery or kindergarten but often formal education begins in elementary school and continues with secondary school.Post-secondary education (or higher education) is usually at a college or university which may grant an academic degree. It is associated with a specific or stage and is provided under a certain set of rules and regulations. The formal education is given by specially qualified teachers they are supposed to be efficient in the art of instruction. It also observes strict discipline. The student and the teacher both are aware of the facts and engage themselves in the process of education.

Examples of Formal Education

Learning in a classroom

School grading/certification, college, and university degrees

Planned education of different subjects having a proper syllabus acquired by attending the institution.

Characteristics of formal education

Formal education is structured hierarchically.

It is planned and deliberate.

Scheduled fees are paid regularly.

It has a chronological grading system.

It has a syllabus and subject-oriented. The syllabus has to be covered within a specific time period.

The child is taught by the teachers

Advantages of Formal education:

An organized educational model and up to date course contents.

Students acquire knowledge from trained and professional teachers.

Structured and systematic learning process.

Intermediate and final assessments are ensured to advance students to the next learning phase.

Institutions are managerially and physically organized.

Leads to a formally recognized certificate.

Easy access to jobs.

Disadvantages of Formal education:

Sometimes, brilliant students are bored due to the long wait for the expiry of the academic session to promote to the next stage

Chance of bad habits' adoption may be alarming due to the presence of both good and bad students in the classroom

Wastage of time as some lazy students may fail to learn properly in spite of motivation by the professional trainers.

Some unprofessional and non-standard education system may cause the wastage of time and money of the students which leads to the disappointment from formal education and argue them to go for non-formal education.

Costly and rigid education as compare to other forms of learning

Informal Education

Informal education may be a parent teaching a child how to prepare a meal or ride a bicycle.

People can also get an informal education by reading many books from a library or educational websites.Informal education is when you are not studying in a school and do not use any particular learning method. In this type of education, conscious efforts are not involved. It is neither pre-planned nor deliberate. It may be learned at some marketplace, hotel or at home.

Unlike formal education, informal education is not imparted by an institution such as school or college. Informal education is not given according to any fixed

timetable. There is no set curriculum required. Informal education consists of experiences and actually living in the family or community.

Examples of Informal Education

Teaching the child some basics such as numeric characters.

Someone learning his/her mother tongue

A spontaneous type of learning, “if a person standing in a bank learns about opening and maintaining the account at the bank from someone.”

Characteristics of Informal Education

It is independent of boundary walls.

It has no definite syllabus.

It is not pre-planned and has no timetable.

No fees are required as we get informal education through daily experience and by learning new things.

It is a lifelong process in a natural way.

The certificates/degrees are not involved and one has no stress for learning the new things.

You can get from any source such as media, life experiences, friends, family etc.

Advantages of Informal Education

More naturally learning process as you can learn at anywhere and at any time from your daily experience.

It involves activities like individual and personal research on a topic of interest for themselves by utilizing books, libraries, social media, internet or getting assistance from informal trainers.

Utilizes a variety of techniques.

No specific time span.

Less costly and time-efficient learning process.

No need to hire experts as most of the professionals may be willing to share their precious knowledge with students/public through social media and the internet.

Learners can be picked up the requisite information from books, TV, radio or conversations with their friends/family members.

Disadvantages of Informal Education

Information acquired from the internet, social media, TV, radio or conversations with friends/family members may lead to the disinformation.

Utilized techniques may not be appropriate.

No proper schedule/time span.

Unpredictable results which simply the wastage of time.

Lack of confidence in the learner.

Absence of discipline, attitude and good habits.

Non-formal Education

Non-formal education includes adult basic education, adult literacy education or school equivalency preparation.

In nonformal education, someone (who is not in school) can learn literacy, other basic skills or job skills.

Home education, individualized instruction (such as programmed learning), distance learning and computer-assisted instruction are other possibilities.

Non-formal education is imparted consciously and deliberately and systematically implemented. It should be organized for a homogeneous group. Non-formal, education should be programmed to serve the needs of the identified group. This will necessitate flexibility in the design of the curriculum and the scheme of evaluation.

Examples of Non-formal Education

Boy Scouts and Girls Guides develop some sports program such as swimming comes under nonformal education.

Fitness programs.

Community-based adult education courses.

Free courses for adult education developed by some organization.

Characteristics of Non-formal Education

The nonformal education is planned and takes place apart from the school system.

The timetable and syllabus can be adjustable.

Unlike theoretical formal education, it is practical and vocational education.

Nonformal education has no age limit.

Fees or certificates may or may not be necessary.

It may be full time or part-time learning and one can earn and learn together.

It involves learning of professional skills.

Advantages of Non-formal Education

Practiced and vocational training.

Naturally growing minds that do not wait for the system to amend.

Literacy with skillfulness growth in which self-learning is appreciated.

Flexibility in age, curriculum and time.

Open-ended educational system in which both the public and private sector are involved in the process.

No need to conduct regular exams.

Diploma, certificates, and award are not essential to be awarded.

Disadvantages of Non-formal Education

Attendance of participants is unsteady.

Sometimes, it’s just wastage of time as there is no need to conduct the exam on regular basis and no degree/diploma is awarded at the end of the training session.

Basic reading and writing skills are crucial to learn.

No professional and trained teachers.

Students may not enjoy full confidence as the regular students enjoy.

Some institutes provide fake certification through online courses just for the sake of earning.

2.Psychology

The word psychology is originally derived from two Greek words i.e ‘psycho’ and ‘logos’ .’Psycho’ means ‘soul’ and ‘logos’ meaning study. So, originally psychology means the study of soul or science of the soul.

Meaning of psychology

Psychology as a science of soul: The earliest meaning of psychology was the science of the soul. Philosophers like Pluto, Aristotle and Descartes interpreted psychology according to this concept. Soul has been neither measured nor has been seen by anyone, so this meaning of psychology was rejected.

Psychology as a science of mind: Philosophers in the middle ages consider psychology as the science of mind. But they could not find the location of the mind. Hence psychology as the science of mind could not progress.

Psychology as a science of consciousness: In the 19^{th} century, some psychologists like William James, Wilhelm Wundt, and other consider psychology as a science of consciousness. By consciousness, the psychologists meant awareness or wakefulness. A great psychologist Freud objected to this meaning of psychology. He said that man is only 10% conscious of his activities. Mostly he is unconscious. So psychology cannot be given the meaning of science of consciousness. Hence this meaning was also rejected.

Psychology as a science of behavior: It is the latest meaning of psychology. Psychology tells us about our behavior. Behavior includes all the activities that

man does. It includes internal and external behavior, conscious as well as unconscious behavior. Behavior can be observed. Therefore, all psychologists are agreed on this meaning of psychology.

Definition of psychology

Woodworth: "The psychology deals with the activities of the individual in relation to his environment."

Skinner: "Psychology is the science of behavior and experience."

Munns: "Psychology today concerns with the scientific investigation of behavior."

Crow & Crow: "Psychology is the study of human behavior and human relationships."

Scope of psychology

We can study the scope of psychology from the various fields or areas discussed below:

1. Developmental process
2. Cognition
3. Personality

4. Cross-cultural and cultural psychology

5. Comparative psychological psychology

6. Abnormal Psychology

7. Clinical and counselling psychology

8. Education and learning process

9. Environmental psychology

10. Industrial and organizational psychology

11. Social psychology

12. Psychological assessment

13. Other fields

Educational Psychology

Educational psychology involves the study of how people learn, including teaching methods, instructional processes, and individual differences in learning. The goal is to understand how people learn and retain new information.

This branch of psychology involves not just the learning process of early childhood and adolescence but includes the social, emotional, and cognitive processes that are involved in learning throughout the entire lifespan.

The field of educational psychology incorporates a number of other disciplines, including developmental psychology, behavioral psychology, and cognitive psychology.

This article discusses some of the different persepctives taken within the field of educational psychology, topics that educational psychologists study, and career options in this field.

Perspectives in Educational Psychology

As with other areas of psychology, researchers within educational psychology tend to take on different perspectives when considering a problem. These perspectives focus on specific factors that influence how a person learns, including learned behaviors, cognition, experiences, and more.

The Behavioral Perspective

This perspective suggests that all behaviors are learned through conditioning. Psychologists who take this perspective rely firmly on the principles of operant conditioning to explain how learning happens.[1]

For example, teachers might reward learning by giving students tokens that can be exchanged for desirable items such as candy or toys. The behavioral perspective operates on the theory that students will learn when rewarded for "good" behavior and punished for "bad" behavior.

While such methods can be useful in some cases, the behavioral approach has been criticized for failing to account for such things as attitudes, emotions, and intrinsic motivations for learning.

The Developmental Perspective

This focuses on how children acquire new skills and knowledge as they develop.[2] Jean Piaget's stages of cognitive development is one example of an important developmental theory looking at how children grow intellectually.[3]

By understanding how children think at different stages of development, educational psychologists can better understand what children are capable of at each point of their growth. This can help educators create instructional methods and materials best aimed at certain age groups.

The Cognitive Perspective

The cognitive approach has become much more widespread in recent decades, mainly because it accounts for how things such as memories, beliefs, emotions, and motivations contribute to the learning process.[4] This theory supports the idea that a person learns as a result of their own motivation, not as a result of external rewards.

Cognitive psychology aims to understand how people think, learn, remember, and process information.

Educational psychologists who take a cognitive perspective are interested in understanding how kids become motivated to learn, how they remember the things that they learn, and how they solve problems, among other things.

The Constructivist Approach

One of the most recent learning theories, this perspective focuses on how we actively construct our knowledge of the world.[5] Constructivism tends to account more for the social and cultural influences that impact how we learn.

Those who take the constructivist approach believe that what a person already knows is the biggest influence on how they learn new information. This means that new knowledge can only be added on to and understood in terms of existing knowledge.

This perspective is heavily influenced by the work of psychologist Lev Vygotsky, who proposed ideas such as the zone of proximal development and instructional scaffolding.

Experiential Perspective

This perspective emphasizes that a person's own life experiences influence how they understand new information.[6] This method is similar to constructivist and cognitive perspectives in that it takes into consideration the experiences, thoughts, and feelings of the learner.

This method allows someone to find personal meaning in what they learn instead of feeling that the information doesn't apply to them.

Topics in Educational Psychology

From the materials teachers use to the individual needs of students, an educational psychologist will delve deep into these issues to more fully understand the learning process. Some of these topics include:

Educational technology: Looking at how different types of technology can help students learn

Instructional design: Designing learning materials

Special education: Helping students who may need specialized instruction[7]

Curriculum development: Creating coursework that will maximize learning

Organizational learning: Studying how people learn in organizational settings

Gifted learners: Helping students who are identified as gifted learners[8]

Significant Figures

Throughout history, a number of additional figures have played an important role in the development of educational psychology. Some of these well-known individuals include:

John Locke: Locke is an English philosopher who suggested the concept of *tabula rasa*, or the idea that the mind is essentially a blank slate at birth.[16] This means that knowledge is developed through experience and learning.

Jean Piaget: A Swiss psychologist who is best known for his highly influential theory of cognitive development, Jean Piaget's influence on educational psychology is still evident today.

B.F. Skinner: Skinner was an American psychologist who introduced the concept of operant conditioning, which influences behaviorist perspectives.[17] His research on reinforcement and punishment continues to play an important role in education.

PSYCHOLOGY
VERSUS
EDUCATIONAL PSYCHOLOGY

PSYCHOLOGY	EDUCATIONAL PSYCHOLOGY
Scientific study of the human mind and its functions, specifically those that affect human behaviour	A branch of psychology that studies the issues related to education and acquisition of information by humans
Emphasis is the overall scientific study of the human mind, its processes, its relationship and impact on human behaviour	Emphasizes more on the understanding and improvement of teaching and learning in formal educational settings
Studies the complexities associated with the human mind that can harm the mental well-being of a person	Investigates how students learn and how teachers can help them to learn effectively, especially with regard to students with learning difficulties
Main concern is assisting individuals to overcome their psychological issues or issues related to mental health through various psychoanalytical therapies and treatments on the whole	Concerns overcoming learning and cognitive difficulties in students as well as in preparing teachers for more effective education

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3.Teaching

What is Teaching

In education, **teaching** is the concerted sharing of knowledge and experience, which is usually organized within a discipline and, more generally, the provision of stimulus to the psychological and intellectual growth of a person by another person or artifact.

Teaching is an activity aimed at bringing about meaningful learning through a method that is morally and pedagogically acceptable. It involves a teacher, a learner, content in form of knowledge facts information and skill to be imparted a deliberate intention on the part of the learners to learn, and finally a method that respects the learners' cognitive integrity and freedom of choice.

Teaching is the art and science whereby a lecturer conveys knowledge to students in a formal setting, employing a variety of methods

.**Teaching** is considered as deliberate actions undertaken with the intention of facilitating learning

Imparting knowledge and skills

Teaching is an instruction or delivering a particular skill or subject or something that someone tells you to do. For **Teaching** in this case may refer to showing or explaining to a student how to do something.

Teaching is one of the instruments of education and is a special function is to impart understanding and skill. The main function of teaching is to make learning effective. The learning process would get completed as a result of teaching. So, teaching and learning are very closely related.

Concept of teaching

Teaching is a process in which one individual teaches or instruct another individual. Teaching is considered as the act of imparting instructions to the learners in the classroom situation. It is watching systematically. Dewey:- considers it as a manipulation of the situation, where the learner will acquire skills and insight with his own initiation.

Teaching definition:-

(1) H C Morrison:- Teaching is an intimate contact between the more mature personality and a less mature one.

(2) Jackson:- Teaching is a face to face encounters between two or more persons, one of whom (teacher) intends to effect certain changes in the other participants (students).

(3) J B Hough and James K Duncan:- Teaching is an activity with four phases, a curriculum planning phase, an instructing phase, and an evaluating phase.
This definition presents the organizational aspect by which we can describe and analyze the teaching process.

(4) N.L.Gage (Democratic point of view):- Teaching is interpersonal influence aimed at changing the behavior potential of another person.

(5) Clerk:- Teaching refers to activities that are designed and performed to produce in students behavior.

We can define teaching according to the following three viewpoints.

(a) Authoritarian

(b) Democratic

(c) Liassez faire.

(a) Authoritarian:-

According to this viewpoint-

Teaching is an activity of memory level only

This teaching does not develop thoughts and attitude in the students.

Is known as thoughtless teaching

This teaching is teachers centric criticism of the teachers.

(b) Democratic teaching:-

According to this

Teaching is done at understanding level.

Memory level teaching is the prerequisite (concept) is first memorized and then understand

Such teaching is known as thoughtful teaching.

According to this point of view, teaching is an interactive process, primarily involving classroom talks which takes place between teachers and student.

Here students can ask questions and criticize the teachers.

Here students can ask the questions and self-disciplined is insisted.

(c) Laissez Faire Attitude:-

It is known as reflective level teaching.

It is more difficult then memory level and understanding level of teaching.

Memory level and understanding level teaching are must for the reflective level of teaching.

It is highly thoughtful activity.

In this level both students and teachers are participants.

This level produces insights.

Nature and characteristic of teaching:-

Teaching is a social and cultural process, which is planned in order to enable an individual to learn something in his life. We can describe the nature and characteristics of teaching in following way:-

(1) Teaching is a complete social process

Teaching is undertaken for the society and by the society. With everchanging social ideas, it is not possible to describe exact and permanent nature of teaching.

(2) Teaching is giving information

Teaching tells students about the things they have to know and students cannot find out themselves. Communication of knowledge is an essential part of teaching.

(3) teaching is an interactive process

Teaching is an interactive process between the student and the teaching sources,

which is essential for the guidance, progress, and development of students.

(4) Teaching is a process of development and learning.

(5) Teaching causes a change in behavior.

(6) Teaching is art as well as science.

(7) Teaching is face to face encounter.

(8) Teaching is observable, measurable and modifiable.

(9) Teaching is skilled occupation:- Every successful teacher is expected to know the general methods of teaching-learning situations.

(10) Teaching facilitates learning

(11) Teaching is both conscious and an unconscious process.

(12) Teaching is from memory level to reflective level.

(13) Teaching is a continuum of training, conditioning, instruction, and indoctrination.

Separation of teaching from other similar processes:-

In order to understand the meaning of teaching, it is essential to understand the difference between teaching and other similar concepts like conditioning, training, instruction, and indoctrination. Here, a brief description is given below:-

Conditioning Vs Teaching:-

Teaching

Teaching aims at the development of potential and intellect.

It has broader scope

Reinforcement is not necessary for teaching.

In teaching repetition of the taught subject matter is not necessary.

In teaching, there is a curriculum that is very comprehensive

In teaching qualitative and quantitative techniques are used for evaluation.

Teaching is a broader process with various levels.

Conditioning

It aims at modification of behavior and learning habits.

Scope of conditioning is relatively narrow

Reinforcement plays a vital role here.

Conditioning is done by the repetition of behavior to be acquired.

In conditioning, curriculum is fixed

Evaluation in conditioning is done on the basis of the acquisition of a behavior or a habit.

Conditioning is considered as the lowest level of the entire process of teaching.

Teaching and instruction

Instruction is the act of telling the learner what to do or what not do.

Teaching

Scope is wide

It is both formal and informal

teaching is a continuum for modification of behavior

Teaching means the development of potential of an individual

Range of methods used in teaching is very wide

Teaching is imparted in school, library, political group etc.

Instruction

Its scope is narrow and limited

Instruction is always formal

Instruction is a part of teaching

Instruction means to impart knowledge of specific subjects

Instruction is generally confined to the classroom

Teaching and Indoctrination

Indoctrination is the process of forming certain beliefs. Some ideas are infused in the mind of the learner from the beginning. These ideas are continuously put in the minds of the learners and thus such ideas become their firm believes.

Teaching

The scope is broad.

Aims at the development of the potential of the learner.

Teaching points out that there are different solutions, often to the Same problem

It provides freedom to the child to learn.

Discipline is democratic and social discipline is emphasized

Indoctrination

Scope is very narrow

It aims at changing some beliefs and attitudes.

Indoctrination poses the belief that there is only one solution to the problem

There is no freedom for the child.

Discipline is very rigid.

Top of Form

4.Meaning of learning and learning definition in education

Concept of Learning

Concept of learning is of huge importance in human behavior. Human being goes on learning from birth till death. Albert Einstein in one of his quotes said that

Once you stop learning you start dying

Learning is a natural phenomenon which is natural to all organisms including both humans and animals. Learning affects a child's development. A child learns new habits only through the process of learning and through imitated traditions and customs. Intellectual skills are also developed through learning. The decision of right and wrong, the concepts of justice and aesthetic sense, etc. develop through learning. This process of learning continues throughout life. Learning is the basis of maturation. Learning affects our,

Language

Customs and traditions

Attitudes and beliefs

personalities

goals

In fact, it would not be wrong to say that learning affects all aspects of our life. Learning is a key concept of Psychology. Learning phenomenon is very important for the development of human beings. Various psychologists have explained learning from a different point of views. According to behaviorists,

Learning is the modification of behavior as a result of experience. The child brings changes in his behavior after gaining experiences from the environment.

Everything a learner does or thinks is learning. Learning is a relatively permanent change in behavior of the learner It even brings changes in the personality traits of the learner.

Various psychologists and educationists have defined the concept and meaning of learning in their own way. Some define as a process, some as a change in performance and some define learning as acquisition and retention of knowledge.
According to **Gestalt's** view,
"The basis of learning is to gain knowledge after observing the whole structure. Responding towards the entire situation is learning."
Kurt Lewin has presented the field view of learning and explained
The learning as the direct cognitive organization of a situation. Motivation has a significant role & place in learning."
According to **Woodworth**,
"The process of acquiring new knowledge and new responses is the process of learning."
G.D. Boaz(1984) observes learning as a process. According to him

"Learning is the process by which the individuals acquires various habits, knowledge, and attitudes that are necessary to meet the demands of life, in general"

According to **Cronbach**,

"Leaning is shown by a change in behavior as a result of experience."

Pavlov has said, *"*

Learning is habit formation resulting from conditioning."

According to **Kingsley and Garry**,

"Learning is a process by which behavior is originated or change through practice or training."

In the words of **C.E.Skinner**,

"Learning is the process of progressive behavior adoption."

As a result of studying and analysis of the above-mentioned definitions of learning in education, the following facts come to the light :

1. Learning is a modification in behavior.
2. Learning is the organization of behavior.
3. Learning is the confirmation of a new process.

The meaning of learning explained

1. Learning is a broad term. Learning includes all activities which affect children. Along with the growing process, the mental development of the child occurs. As a result, changes take place in his behavior continuously. The child goes on learning through experiences.

2. From a psychological point of view, learning has been explained as a stimulus-response process. According to the point of view, the establishment of the stimulus-response relationship is known as leaning.

Some other facts also come before us relating to the learning, such as-

(i) Learning is a process through which the behavior of the child changes or modifies.

(ii) Learning is predicted on the basis of changes in behavior.

(iii) These changes can be negative or positive.

(iv) The changes due to learning are permanent.

(v) Changes in the behavior are the results of experiences.

(vi) Leaning can be termed as a mental process.

5.Nature vs. Nurture

The expression “nature vs. nurture” describes the question of how much a person's characteristics are formed by either “nature” or “nurture.” “Nature” means innate biological factors (namely genetics), while “nurture” can refer to upbringing or life experience more generally.

Traditionally, “nature vs. nurture” has been framed as a debate between those who argue for the dominance of one source of influence or the other, but contemporary experts acknowledge that both “nature” and “nurture” play a role in psychological development and interact in complex ways.

The Meaning of Nature vs. Nurture

The wording of the phrase "nature vs. nurture" makes it seem as though human individuality—personality traits, intelligence, preferences, and other characteristics—must be based on either the genes people are born with or the environment in which they grew up. The reality, as scientists have shown, is more complicated, and both these and other factors can help account for the many ways in which individuals differ from each other.

What does the phrase "nature vs. nurture" get wrong?

The words "nature" and "nurture" themselves can be misleading. Today, "genetics" and "environment" are frequently used in their place—with one's environment including a broader range of experiences than just the nurturing received from parents or caregivers. Further, nature and nurture (or genetics and environment) do not simply compete to influence a person, but often interact with each other; "nature *and* nurture" work together. Finally, individual differences do not entirely come down to a person's genetic code or developmental environment—to some extent, they emerge due to messiness in the process of development as well.

How do nature and nurture work together?

A person's biological nature can affect a person's experience of the environment. For example, a person with a genetic disposition toward a particular trait, such as aggressiveness, may be more likely to have particular life experiences (including,

perhaps, receiving negative reactions from parents or others). Or, a person who grows up with an inclination toward warmth and sociability may seek out and elicit more positive social responses from peers. These life experiences could, in turn, reinforce an individual's initial tendencies. Nurture or life experience more generally may also modify the effects of nature—for example, by expanding or limiting the extent to which a naturally bright child receives encouragement, access to quality education, and opportunities for achievement.

How does epigenetics relate to "nature vs. nurture"?

The Nature-vs.-Nurture Debate

Theorists and researchers have long battled over whether individual traits and abilities are inborn or are instead forged by experiences after birth. The debate has had broad implications: The real or perceived sources of a person's strengths and vulnerabilities matter for fields such as education, philosophy, psychiatry, and clinical psychology. Today's consensus—that individual differences result from a combination of inherited and non-genetic factors—strikes a more nuanced middle path between nature- or nurture-focused extremes.

How old is the nature-nurture debate?

The debate about nature and nurture has roots that stretch back at least thousands of years, to Ancient Greek theorizing about the causes of personality. During the modern era, theories emphasizing the role of either learning and experience or biological nature have risen and fallen in prominence—with genetics gaining increasing acknowledgment as an important (though not exclusive) influence on individual differences in the later 20th century and beyond.

Where does the phrase “nature vs. nurture” come from?

“Nature versus nurture” was used by English scientist Francis Galton. In 1874, he published the book *English Men of Science: Their Nature and Nurture*, arguing that inherited factors were responsible for intelligence and other characteristics.

What is genetic determinism?

What is the “blank slate” view in psychology?

How Genetic and Environmental Factors Are Identified

Modern scientific methods have allowed researchers to advance further in understanding the complex relationships between genetics, life experience, and psychological characteristics, including mental health conditions and personality traits. Overall, the findings of contemporary studies underscore that with some exceptions—such as rare diseases caused by mutations in a single gene—no one factor, genetic or environmental, solely determines how a characteristic develops.

How can we tell what portion of psychological differences are due to genes?

Scientists use multiple approaches to estimate how important genetics are for any given trait, but one of the most influential is the twin study. While identical (or monozygotic) twins share the same genetic code, fraternal (or dizygotic) twins share about 50 percent of the same genes, like typical siblings. Scientists are able to estimate the degree to which the variation in a particular trait, like extraversion, is explained by genetics in part by analyzing how similar identical twins are on that trait, compared to fraternal twins. (These studies do have limitations, and estimates based on one population may not closely reflect all other populations.)

Which is more important, “nature” or “nurture”?

It’s hard to call either “nature” or “nurture,” genes or the environment, more important to human psychology. The impact of one set of factors or the other depends on the characteristic, with some being more strongly related to one’s

genes—for instance, autism appears to be more heritable than depression. But in general, psychological traits are shaped by a balance of interacting genetic and non-genetic influences.

Is mental illness due to genes or the environment?

Is personality shaped more by genes or by the environment?

CHAPTER 2

Growth and development:

The human being is never static. From the moment of conception to the time of death, the person is undergoing changes. Development may be defined as a progressive series of orderly, coherent changes. The various developments that take place during the life time of an individual are physical, motor, social, emotional, intellectual, aesthetic and moral. Developmental Psychology is the branch of psychology that studies intra individual and inter individual changes. The Developmental Process The aim of education is to bring desirable changes in the learner. These changes are taking place due to growth and development. Therefore, to bring desirable changes in the child, knowledge of growth and development especially how the pre-natal and postnatal development takes place, how child's behaviour due to interaction with the surrounding etc is to be understood by prospective teachers.34 Change is the law of nature. Animate or inanimate object are all subject to change. As far as human beings are concerned life starts with the conception in the mother's womb as a result of the process of fertilization of the ovum of the mother by the sperm cell of the father. Then mother's womb becomes the site and means for the growth and development of new life and after nine month , baby come in to the world .i.e. the process by which a germinating seed or conceived organism is turned in to mature plant or full-fledged being called 'growth and development'. Growth refers to increase in the size of body parts or of the organism as a whole. It can be measured or quantified. E.g. growth in height, weight, size etc. In other words, growth refers to cell

multiplication or quantitative changes in size, weight, and number. Development is a process by which an individual grows and changes throughout the life cycle. Or it refers to qualitative changes that begin at conception and continue through life span. e.g. ability to sit, stand, walk, learning to talk etc. In the words of Elizabeth Hurlock, ‘ the term development means progressive series of changes that occur in an orderly predictable pattern as a result of maturation and experience’. According to Crow & Crow, ‘growth refers to structural and physiological change and development is concerned with growth as well as those changes in which result from environmental situations’. Therefore, growth is quantitative and development is qualitative.

Difference between growth and development

Development	Growth
A progressive series of changes that occur as a result of maturation and learning	Structural and physiological changes
functional change	structural change
overall changes	particular
Qualitative	quantitative
direct measurement difficult	direct measurement possible
progressive changes	changes both progressive and retrogressive
continuous process possible without	may or may not bring development E.g.

growth E.g. Intellectual functions in abstract thinking | increase in brain weight

PRINCIPLES OF GROWTH AND DEVELOPMENT

Growth and Development do not take place in a haphazard manner. They tend to follow certain principles underlie certain process of development, which can be observed in all human being. Crow and Crow says; 'Growth refers to structural and physiological change, while development refers to growth as well as those changes in behaviour, which result from environmental stimulation'. Growth refers to structural and physiological changes. It generally refers to an increase in size, height and weight. While development refers to changes in the organism as a whole. Growth can be measured. Development can be observed. Growth stops at maturity. But development continuous throughout the life. Growth may or may not bring development. Development is also possible without growth. Growth is quantitative. But development is both quantitative and qualitative. Growth takes place through twin process of differentiation and integration. Whereas development is a wider process, but growth is only part of it

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Development is continuous

Development follows an orderly pattern

Development proceeds from general to specific

Development leads to integration

Principle of cephalocaudal and proximo distal tendencies

Development proceeds from egocentricism to allocentricism

Development proceeds from heteronomy (dependence) to autonomy

Development is an individualized process

Development is predictable

Development is the product of the interaction between maturation and learning

Principle of interrelation

Development is cumulative

Development is the product of the interaction between heredity and environment · Development is complex

Development is spiral and not linear

Types of development

Cognitive development

The mental development include the development of intellectual and mental capabilities like sensation, perception, concept formation, attention and interest, development of imagination, memory and problem solving ability and other mental abilities. The teacher's duty is to assist the child in the development of his abilities. Development of these abilities is the aim of our education. Therefore, mental development means development of mental and intellectual capabilities, which help an individual to adjust his behaviour to the ever-changing environmental conditions or to complete a task that needs complex cognitive capabilities.

Intellectual abilities are interrelated, so, the overall development of this abilities can only lead to the development of an individual. Factors affecting mental level.

Emotional development

'Emotional development' refers to the emergence of emotions like anger, joy, delight, happiness, fear, anxiety and sorrow and the socially acceptable ways of expressing them. As the child grows up and becomes aware of acceptable ways of behaviour, a variety of emotions also emerge. As an infant he expresses only discomfort and delight. As he grows older expressions of joy, happiness, fear, anger and disappointment appear. He learns to express these emotions in a healthy manner. From the simple emotional states present at birth, new and more complex emotions develop. This development comes partly from maturing but mostly trough learning. By the end of the first year, the baby feels fear, anger, jealousy, envy, curiosity, joy and affection.

Social development

Social development is the ability to adjust the individual to his present social circumstances and to behave in accordance with the wishes and desires of other people i.e., Social development is a process of development by which a child acquires the necessary attitudes, values and skills that makes him an acceptable member of the group, which he belongs. According to Crow and Crow social development as the acquisition of the ability to conform to group standard. In the words of Elizabeth 33 Hurlock, Social development means the attaining of

maturity in social setting. In defining social development, Sorenson has written, by social growth and development we mean the increasing ability to get along well with one and others. In short socialization is the process of the development of such qualities, which bring desirable changes in social behaviour of the child. It is the process whereby the biological individual is converted into a human person. An individual, mature from the social stand point, is one who co-operate with all those with whom he come into contact, and contradict them only when such a course of action becomes inevitable.

Moral development

The term moral is derived from the Latin word Mores which means manners, custom or folkways. Thus an individual's moral notions and concept are determined by laws, traditions, religious ideals, custom etc. Hence moral development considered as a part of social development as well as emotional development. Moral development refers to the development of moral concept and moral behaviour. Moral concepts starts developing when the child learns what is good and what is bad, what are right and what 34 is wrong. The child categorizes any action that needs with his parent's disapproval and invites their criticism as bad or wrong and all actions sanctioned and welcomed by the parents are accepted as good and correct. That is, punishment and the reward control the children's right and wrong action. Moreover the child's moral development is dependent upon his emotional development. Hence moral development is a complex process in which the action and interaction of an individual and other people surrounding him is of great importance.

Factors related to growth and development

This debate within psychology is concerned with the extent to which particular aspects of behaviour are a product of either inherited (i.e. genetic) or acquired (i.e. learned) characteristics. Nature is what we think of as pre-wiring and is influenced by genetic inheritance and other biological factors. Nurture is generally taken as the influence of external factors after conception e.g. the product of exposure, experience and learning on an individual. The nature-nurture debate is concerned with the relative contribution that both influences make to human behaviour.

Heredity (Nature) and Environment (Nurture)

It has long been known that certain physical characteristics are biologically determined by genetic inheritance. Colour of eyes, straight or curly hair, pigmentation of the skin and certain diseases are all a function of the genes we inherit. Other physical characteristics, if not determined, appear to be at least strongly influenced by the genetic make-up of our biological parents. Height, weight, hair loss (in men), life expectancy and vulnerability to specific illnesses (e.g. breast cancer in women) are positively correlated between genetically related individuals. These facts have led many to speculate as to whether psychological characteristics such as behavioural tendencies, personality attributes and mental abilities are also “wired in” before we are even born. Those who adopt an extreme hereditary position are known as nativists. Their basic assumption is that the characteristics of the human species as a whole are a product of evolution and that individual differences are due to each person’s unique genetic code. In general, the earlier a particular ability appears, the more likely it is to be under the influence of genetic factors. At the other end of the spectrum are the environmentalists – also

known as empiricists (not to be confused with the other empirical / scientific approach). Their basic assumption is that at birth the human mind is a tabula rasa (a blank slate) and that this is gradually “filled” as a result of experience (e.g. behaviourism). From this point of view psychological characteristics and behavioural differences that emerge through infancy and childhood are the result of learning. It is how you are brought up (nurture) that governs the psychologically significant aspects of child development and the concept of maturation applies only to the biological. For example, when an infant forms an attachment it is responding to the love and attention it has received, language comes from imitating the speech of others and cognitive development depends on the degree of stimulation in the environment and, more broadly, on the civilization within which the child is reared. In contrast Bandura's (1977) social learning theory states that aggression is a learnt from the environment through observation and imitation. This is seen in his famous Bobo doll experiment (Bandura, 1961). Also, Skinner (1957) believed that language is learnt from other people via behaviour shaping techniques.41 7 This question was first framed by Francis Galton in the late 19th century. Galton (himself a relative of Charles Darwin) was convinced that intellectual ability was largely inherited and that the tendency for “genius” to run in families was the outcome of a natural superiority. This view has cropped up time and again in the history of psychology and has stimulated much of the research into intelligence testing (particularly on separated twins and adopted children). A modern proponent is the American psychologist Arthur Jenson. Finding that the average I.Q. scores of black Americans were significantly lower than whites he went on to argue that genetic factors were mainly responsible – even going so far as to suggest that intelligence is 80% inherited. The storm of controversy that developed around Jenson’s claims was not mainly due to logical and empirical weaknesses in his argument. It was more to do with the social and political implications that are often

drawn from research that claims to demonstrate natural inequalities between social groups. Galton himself in 1883 suggested that human society could be improved by “better breeding”. Now we can see why the nature-nurture debate has become such a hotly contested issue. What begins as an attempt to understand the causes of behavioural differences often develops into a politically motivated dispute about distributive justice and power in society. What’s more, this does not only apply to the debate over I.Q. It is equally relevant to the psychology of sex and gender, where the question of how much of the (alleged) differences in male and female behaviour is due to biology and how much to culture is just as controversial. However, in recent years there has been a growing realization that the question of “how much” behaviour is due to heredity and “how much” to the environment may itself be the wrong question. Take intelligence as an example. Like almost all types of human behaviour it is a complex, many-sided phenomenon which reveals itself in a great variety of ways. The “how much” question assumes that the variables can all be expressed numerically and that the issue can be resolved in a quantitative manner. The reality is that nature and culture interact in a host of qualitatively different ways.42 8 It is widely accepted now that heredity and the environment do not act independently. Instead of defending extreme nativist or nurturist views, most psychological researchers are now interested in investigating the ways in which nature and nurture interact. For example, in psychopathology, this means that both a genetic predisposition and an appropriate environmental trigger are required for a mental disorder to develop.

Pre and post natal development

Germinal Stage

The germinal stage begins at conception when the sperm and egg cell unite in one of the two fallopian tubes. The fertilized egg is called a zygote. Just a few hours after conception, the single-celled zygote begins making a journey down the fallopian tube to the uterus.

Cell division begins approximately 24 to 36 hours after conception. Through the process of mitosis, the zygote first divides into two cells, then into four, eight, sixteen, and so on. A significant number of zygotes never progress past this early part of cell division, with as many as half of all zygotes surviving less than two weeks.

Once the eight-cell point has been reached, the cells begin to differentiate and take on certain characteristics that will determine the type of cells they will eventually become. As the cells multiply, they will also separate into two distinctive masses: the outer cells will eventually become the placenta, while the inner cells form the embryo.

Cell division continues at a rapid rate during the approximately week-long journey from fallopian tube to uterus wall. The cells develop into what is known as a blastocyst. The blastocyst is made up of three layers, each of which develops into different structures in the body.[1]

Ectoderm: Skin and nervous system

Endoderm: Digestive and respiratory systems

Mesoderm: Muscle and skeletal systems

Finally, the blastocyst arrives at the uterus and attaches to the uterine wall, a process known as implantation. Implantation occurs when the cells nestle into the

uterine lining and rupture tiny blood vessels. The connective web of blood vessels and membranes that form between them will provide nourishment for the developing being for the next nine months. Implantation is not always an automatic and sure-fire process.

Researchers estimate that approximately 60% of all natural conceptions never become properly implanted in the uterus, which results in the new life ending before the mother is ever aware she is pregnant.

When implantation is successful, hormonal changes halt the normal menstrual cycle and cause a whole host of physical changes. For some people, activities they previously enjoyed such as smoking and drinking alcohol or coffee may become less palatable, possibly part of nature's way of protecting the growing life inside them.[2]

Embryonic Stage

At this point, the mass of cells is now known as an embryo. The beginning of the third week after conception marks the start of the embryonic period, a time when the mass of cells becomes distinct as a human. The embryonic stage plays an important role in the development of the brain.

Approximately four weeks after conception, the neural tube forms. This tube will later develop into the central nervous system including the spinal cord and brain. The neural tube begins to form along with an area known as the neural plate. The earliest signs of development of the neural tube are the emergence of two ridges that form along each side of the neural plate.

Over the next few days, more ridges form and fold inward until a hollow tube is formed. Once this tube is fully formed, cells begin to form near the center.[3] The tube begins to close and brain vesicles form. These vesicles will eventually

develop into parts of the brain, including the structures of the forebrain, midbrain, and hindbrain.

Around the fourth week, the head begins to form, quickly followed by the eyes, nose, ears, and mouth. The blood vessel that will become the heart start to pulse. During the fifth week, buds that will form the arms and legs appear.

By the eighth week of development, the embryo has all of the basic organs and parts except those of the sex organs. At this point, the embryo weighs just one gram and is about one inch in length.

By the end of the embryonic period, the basic structures of the brain and central nervous system have been established. At this point, the basic structure of the peripheral nervous system is also defined.

The production of neurons, or brain cells, begins around day 42 after conception and is mostly complete sometime around the middle of pregnancy.

As neurons form, they migrate to different areas of the brain. Once they have reached the correct location, they begin to form connections with other neural cells, establishing rudimentary neural networks.

Fetal Stage

Once cell differentiation is mostly complete, the embryo enters the next stage and becomes known as a fetus. The fetal period of prenatal develop marks more important changes in the brain. This period of development begins during the ninth week and lasts until birth. This stage is marked by amazing change and growth.

The early body systems and structures established in the embryonic stage continue to develop. The neural tube develops into the brain and spinal cord and neurons continue to form. Once these neurons have formed, they begin to

migrate to their correct locations. Synapses, or the connections between neurons, also begin to develop.

Between the ninth and twelfth week of gestation (at the earliest), reflexes begin to emerge. The fetus begins to make reflexive motions with its arms and legs.[4]

During the third month of gestation, the sex organs begin to differentiate. By the end of the month, all parts of the body will be formed. At this point, the fetus weighs around three ounces. The fetus continues to grow in both weight and length, although the majority of the physical growth occurs in the later stages of pregnancy.

the first trimester of pregnancy. During the second trimester, or months four through six, the heartbeat grows stronger and other body systems become further developed. Fingernails, hair, eyelashes, and toenails form.[5] Perhaps most noticeably, the fetus increases about six times in size.

So what's going on inside the brain during this important period of prenatal development? The brain and central nervous system also become more responsive during the second trimester. Around 28 weeks, the brain starts to mature faster, with an activity that greatly resembles that of a sleeping newborn.

During the period from seven months until birth, the fetus continues to develop, put on weight, and prepare for life outside the womb. The lungs begin to expand and contract, preparing the muscles for breathing.

While development usually follows this normal pattern, there are times when problems with prenatal development occur. Disease, malnutrition, and other prenatal influences can have a powerful impact on how the brain develops during this critical period.

Post natal development

Infancy, typically the first year of life, is the first important stage of human development. Many physical milestones occur during this stage as an infant gains control over its body. However, infants must rely on others to meet most of their needs. They learn to trust other people as needs are met. They need to feel this security in order to properly develop both physically and emotionally.

Like your puppy, an infant needs to be loved and nurtured. As you met the needs of your puppy, he/she learned to trust and bond with you while he/she also developed physically.

Childhood

The next stage of human development is **childhood**, during which children start to explore and develop a sense of independence. Eventually, children learn to make their own decisions and they discover that their actions have consequences. As they learn and grow, they develop a sense of self. Children need to be nurtured so that they develop self-confidence instead self-esteem issues. Achieving a healthy level of self-confidence helps children stay motivated to achieve. A child also needs guidance as they begin to test out new skills and gain confidence in their decision-making.

Do you remember when your puppy got big enough to start getting into things? You may have had to make sure to put your shoes up or your dog would chew them as he/she was learning what he/she should and shouldn't do.

Adolescence

During childhood, children begin to develop a sense of self and independence, and this process continues in the next stage of human development.
During **adolescence**, young men and women are primarily concerned with finding their identity and expressing who they are in the world. Puberty causes many physical changes to take place, and adolescents must adapt to their changing bodies. All of these changes can make adolescence a confusing and stressful period. As adolescents try to find their place, they may experiment with different roles and make attempts to separate from authority figures. They are getting used to their bodies and trying to find out where they belong. They may try out different hairstyles and hobbies in an attempt to create an image of themselves they're comfortable with.

Eventually, your puppy wasn't really a puppy anymore - he/she was growing into a dog. He/she probably became a bit rebellious, too, and tested your authority from time to time. As you set firm and consistent rules, your puppy became comfortable with his/her personality and place in your home. Your overgrown puppy is very much like an adolescent.

Adulthood

Adulthood brings on even more new challenges and major decisions about school, career, and home life. **Early adulthood** involves few physical changes, but it's a time of important emotional development, as young adults decide where they want to live, who they want to live with, and what type of work they want to do.

Next comes **middle adulthood**, or middle age, when adults begin to deal with the physical signs of age: wrinkles, gray hair, and maybe a few extra pounds. On top of physical changes, most middle-aged adults also experience stress from dealing with older children and taking care of aging parents. Most adults have the life experience and emotional stability to deal with these challenges, but it's no wonder we use the term 'midlife crisis' for those who struggle with this period of human development.

Chapter 3

Learning Theories (Behavioristic theories)

Classical conditioning and operant conditioning

What Is Classical Conditioning?

Discovered by Russian physiologist Ivan Pavlov, classical conditioning is a type of unconscious or automatic learning. This learning process creates a conditioned response through associations between an unconditioned stimulus and a neutral stimulus.

Put another way, classical conditioning involves placing a neutral stimulus before a naturally occurring reflex. In Pavlov's classic experiment with dogs, the neutral signal was the sound of a tone and the naturally occurring reflex was salivating in response to food. By associating the neutral stimulus (sound) with the unconditioned stimulus (food), the sound of the tone alone could produce the salivation response.

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Classical Conditioning Definitions

Classical conditioning—also sometimes referred to as Pavlovian conditioning—uses a few different terms to help explain the learning process. Here are the terms you need to know with classical conditioning.

Unconditioned Stimulus

An unconditioned stimulus is a stimulus or trigger that leads to an automatic response. If a cold breeze makes you shiver, for instance, the cold breeze is an unconditioned stimulus.

Neutral Stimulus

A neutral stimulus is a stimulus that doesn't initially trigger a response on its own. If you see a beach ball in the sand, for example, it wouldn't necessarily trigger a response. That would make it a neutral stimulus.

Conditioned Stimulus

A conditioned stimulus is a stimulus that was once neutral (didn't trigger a response) but now leads to a response. If you used to never pay attention to a passing dog until you got bit by one, now causing you to feel fear every time you see a dog, the dog has become a conditioned stimulus.

Unconditioned Response

An unconditioned response is an automatic response or a response that occurs without thought when an unconditioned stimulus is present. If you smell your favorite food and your mouth starts watering, the watering is an unconditioned response.

Conditioned Response

A conditioned response is a learned response or a response that is created where no response existed before. Going back to the example of being bit by a passing dog, now causing you to feel fear whenever you see one, the fear you've started to experience is a conditioned response.

How Classical Conditioning Works

In order to understand more about how classical conditioning works, it is important to become familiar with the basic principles of the process.

During this phase of the process, the unconditioned stimulus (UCS) results in an unconditioned response (UCR). For example, presenting food (the UCS) naturally and automatically triggers a salivation response (the UCR).

At this point, there is also a neutral stimulus that produces no effect—yet. It isn't until the neutral stimulus is paired with the UCS that it will come to evoke a response.

Let's take a closer look at the two critical components of this phase of classical conditioning:

The unconditioned stimulus is one that unconditionally, naturally, and automatically triggers a response.[4] For example, when you smell one of your favorite foods, you may immediately feel very hungry. In this example, the smell of the food is the unconditioned stimulus.

The unconditioned response is the unlearned response that occurs naturally in response to the unconditioned stimulus.[4] In our example, the feeling of hunger in response to the smell of food is the unconditioned response.

In the **before conditioning** phase, an unconditioned stimulus is paired with an unconditioned response. A neutral stimulus is then introduced.

Phase 2: During Conditioning

During the second phase of the classical conditioning process, the previously neutral stimulus is repeatedly paired with the unconditioned stimulus. As a result of this pairing, an association between the previously neutral stimulus and the UCS is formed.

At this point, the once neutral stimulus becomes known as the conditioned stimulus (CS). The subject has now been conditioned to respond to this stimulus. The conditioned stimulus is a previously neutral stimulus that, after becoming associated with the unconditioned stimulus, eventually comes to trigger a conditioned response.[4]

In our earlier example, suppose that when you smelled your favorite food, you also heard the sound of a whistle. While the whistle is unrelated to the smell of the food, if the sound of the whistle was paired multiple times with the smell, the whistle sound would eventually trigger the conditioned response. In this case, the sound of the whistle is the conditioned stimulus.

The **during conditioning** phase involves pairing a neutral stimulus with an unconditioned stimulus. Eventually, the neutral stimulus becomes the conditioned stimulus.

Phase 3: After Conditioning

Once the association has been made between the UCS and the CS, presenting the conditioned stimulus alone will come to evoke a response—even without the unconditioned stimulus. The resulting response is known as the conditioned response (CR).[4]

The conditioned response is the learned response to the previously neutral stimulus. In our example, the conditioned response would be feeling hungry when you heard the sound of the whistle.

In the **after conditioning** phase, the conditioned stimulus alone triggers the conditioned response.

Key Principles

Behaviorists have described a number of different phenomena associated with classical conditioning. Some of these elements involve the initial establishment of the response while others describe the disappearance of a response. These elements are important in understanding the classical conditioning process.

Let's take a closer look at five key principles of classical conditioning.

Acquisition

Acquisition is the initial stage of learning when a response is first established and gradually strengthened.[5] During the acquisition phase of classical conditioning, a neutral stimulus is repeatedly paired with an unconditioned stimulus.

As you may recall, an unconditioned stimulus is something that naturally and automatically triggers a response without any learning. After an association is made, the subject will begin to emit a behavior in response to the previously neutral stimulus, which is now known as a conditioned stimulus. It is at this point that we can say that the response has been acquired.

For example, imagine that you are conditioning a dog to salivate in response to the sound of a bell. You repeatedly pair the presentation of food with the sound of the bell. You can say the response has been acquired as soon as the dog begins to salivate in response to the bell tone.

Once the response has been established, you can gradually reinforce the salivation response to make sure the behavior is well learned.

Acquisition in Classical Conditioning

Extinction

Extinction is when the occurrences of a conditioned response decrease or disappear. In classical conditioning, this happens when a conditioned stimulus is no longer paired with an unconditioned stimulus.[6]

For example, if the smell of food (the unconditioned stimulus) had been paired with the sound of a whistle (the conditioned stimulus), the sound of the whistle would eventually come to evoke the conditioned response of hunger.

However, if the unconditioned stimulus (the smell of food) were no longer paired with the conditioned stimulus (the whistle), eventually the conditioned response (hunger) would disappear.

Extinction in Classical Conditioning

Spontaneous Recovery

Sometimes a learned response can suddenly reemerge, even after a period of extinction. Spontaneous recovery is the reappearance of the conditioned response after a rest period or period of lessened response.[7]

For example, imagine that after training a dog to salivate to the sound of a bell, you stop reinforcing the behavior and the response eventually becomes extinct. After a rest period during which the conditioned stimulus is not presented, you suddenly ring the bell and the animal spontaneously recovers the previously learned response.

If the conditioned stimulus and unconditioned stimulus are no longer associated, extinction will occur very rapidly after a spontaneous recovery.

What Is Spontaneous Recovery?

Generalization

Stimulus generalization is the tendency for a conditioned stimulus to evoke similar responses after the response has been conditioned.[8] For example, if a dog has been conditioned to salivate at the sound of a bell, the animal may also exhibit the same response to stimuli that are similar to the conditioned stimulus.

In John B. Watson's famous Little Albert Experiment, for example, a small child was conditioned to fear a white rat. The child demonstrated stimulus generalization by also exhibiting fear in response to other fuzzy white objects including stuffed toys and Watson's own hair.

How Stimulus Generalization Influences Learning

Discrimination

Discrimination is the ability to differentiate between a conditioned stimulus and other stimuli that have not been paired with an unconditioned stimulus.[9]

For example, if a bell tone were the conditioned stimulus, discrimination would involve being able to tell the difference between the bell tone and other similar sounds. Because the subject is able to distinguish between these stimuli, they will only respond when the conditioned stimulus is presented.

Understanding Stimulus Discrimination

Classical Conditioning Examples

It can be helpful to look at a few examples of how the classical conditioning process operates both in experimental and real-world settings.

Fear Response

John B. Watson's experiment with Little Albert is a perfect example of the fear response.[10] The child initially showed no fear of a white rat, but after the rat was paired repeatedly with loud, scary sounds, the child would cry when the rat was present. The child's fear also generalized to other fuzzy white objects.

Prior to the conditioning, the white rat was a neutral stimulus. The unconditioned stimulus was the loud, clanging sounds, and the unconditioned response was the fear response created by the noise.

By repeatedly pairing the rat with the unconditioned stimulus, the white rat (now the conditioned stimulus) came to evoke the fear response (now the conditioned response).

This experiment illustrates how phobias can form through classical conditioning. In many cases, a single pairing of a neutral stimulus (a dog, for example) and a frightening experience (being bitten by the dog) can lead to a lasting phobia (being afraid of dogs).

Taste Aversions

Another example of classical conditioning can be seen in the development of conditioned taste aversions. Researchers John Garcia and Bob Koelling first noticed this phenomenon when they observed how rats that had been exposed to nausea-causing radiation developed an aversion to flavored water after the radiation and water were presented together.

In this example, the radiation represents the unconditioned stimulus and nausea represents the unconditioned response. After the pairing of the two, the flavored water is the conditioned stimulus, while nausea that formed when exposed to the water alone is the conditioned response.

Later research demonstrated that such classically conditioned aversions could be produced through a single pairing of the conditioned stimulus and the unconditioned stimulus.

Researchers also found that such aversions can even develop if the conditioned stimulus (the taste of the food) is presented several hours before the unconditioned stimulus (the nausea-causing stimulus).

Why do such associations develop so quickly? Forming such associations can have survival benefits for the organism. If an animal eats something that makes it ill, it needs to avoid eating the same food in the future to avoid sickness or even death.

This is a great example of what is known as biological preparedness. Some associations form more readily because they aid in survival.

In one famous field study, researchers injected sheep carcasses with a poison that would make coyotes sick but not kill them. The goal was to help sheep ranchers reduce the number of sheep lost to coyote killings.

Not only did the experiment work by lowering the number of sheep killed, it also caused some of the coyotes to develop such a strong aversion to sheep that they would actually run away at the scent or sight of a sheep.

Operant conditioning,

Sometimes referred to as instrumental conditioning, is a method of learning that employs rewards and punishments for behavior. Through operant conditioning, an association is made between a behavior and a consequence (whether negative or positive) for that behavior.[1]

For example, when lab rats press a lever when a green light is on, they receive a food pellet as a reward. When they press the lever when a red light is on, they receive a mild electric shock. As a result, they learn to press the lever when the green light is on and avoid the red light.

But operant conditioning is not just something that takes place in experimental settings while training lab animals. It also plays a powerful role in everyday learning. Reinforcement and punishment take place in natural settings all the time, as well as in more structured settings such as classrooms or therapy sessions.

Operant conditioning was first described by behaviorist B.F. Skinner, which is why you may occasionally hear it referred to as Skinnerian conditioning.[1] As a behaviorist, Skinner believed that it was not really necessary to look at internal thoughts and motivations in order to explain behavior. Instead, he suggested, we should look only at the external, observable causes of human behavior.

Through the first part of the 20th century, behaviorism became a major force within psychology. The ideas of John B. Watson dominated this school of thought early on. Watson focused on the principles of classical conditioning, once famously suggesting that he could take any person regardless of their background and train them to be anything he chose.[2]

Early behaviorists focused their interests on associative learning. Skinner was more interested in how the *consequences* of people's actions influenced their behavior.

Skinner used the term *operant* to refer to any "active behavior that operates upon the environment to generate consequences." Skinner's theory explained how we acquire the range of learned behaviors we exhibit every day.

His theory was heavily influenced by the work of psychologist Edward Thorndike, who had proposed what he called the law of effect.[3] According to this principle, actions that are followed by desirable outcomes are more likely to be repeated while those followed by undesirable outcomes are less likely to be repeated.

Operant conditioning relies on a fairly simple premise: Actions that are followed by reinforcement will be strengthened and more likely to occur again in the

future. If you tell a funny story in class and everybody laughs, you will probably be more likely to tell that story again in the future.

If you raise your hand to ask a question and your teacher praises your polite behavior, you will be more likely to raise your hand the next time you have a question or comment. Because the behavior was followed by reinforcement, or a desirable outcome, the preceding action is strengthened.

Conversely, actions that result in punishment or undesirable consequences will be weakened and less likely to occur again in the future. If you tell the same story again in another class but nobody laughs this time, you will be less likely to repeat the story again in the future. If you shout out an answer in class and your teacher scolds you, then you might be less likely to interrupt the class again.

Types of Behaviors

Skinner distinguished between two different types of behaviors

Respondent behaviors are those that occur automatically and reflexively, such as pulling your hand back from a hot stove or jerking your leg when the doctor taps on your knee. You don't have to learn these behaviors. They simply occur automatically and involuntarily.

Operant behaviors, on the other hand, are those under our conscious control. Some may occur spontaneously and others purposely, but it is the consequences of these actions that then influence whether or not they occur again in the future. Our actions on the environment and the consequences of that action make up an important part of the learning process.

While classical conditioning could account for respondent behaviors, Skinner realized that it could not account for a great deal of learning. Instead, Skinner suggested that operant conditioning held far greater importance.

Skinner invented different devices during his boyhood and he put these skills to work during his studies on operant conditioning. He created a device known as an operant conditioning chamber, often referred to today as a Skinner box. The chamber could hold a small animal, such as a rat or pigeon. The box also contained a bar or key that the animal could press in order to receive a reward.

In order to track responses, Skinner also developed a device known as a cumulative recorder. The device recorded responses as an upward movement of a line so that response rates could be read by looking at the slope of the line.

Components of Operant Conditioning

There are several key concepts in operant conditioning.

Reinforcement in Operant Conditioning

Reinforcement is any event that strengthens or increases the behavior it follows. There are two kinds of reinforcers. In both of these cases of reinforcement, the behavior increases.

Positive reinforcers are favorable events or outcomes that are presented after the behavior. In positive reinforcement situations, a response or behavior is strengthened by the addition of praise or a direct reward. If you do a good job at work and your manager gives you a bonus, that bonus is a positive reinforcer.

Negative reinforcers involve the removal of an unfavorable events or outcomes after the display of a behavior. In these situations, a response is strengthened by the removal of something considered unpleasant. For example, if your child starts to

scream in the middle of a restaurant, but stops once you hand them a treat, your action led to the removal of the unpleasant condition, negatively reinforcing your behavior (not your child's).

Reinforcement in Conditioning Behavior

Punishment in Operant Conditioning

Punishment is the presentation of an adverse event or outcome that causes a decrease in the behavior it follows. There are two kinds of punishment. In both of these cases, the behavior decreases.

Positive punishment, sometimes referred to as punishment by application, presents an unfavorable event or outcome in order to weaken the response it follows. Spanking for misbehavior is an example of punishment by application.

Negative punishment, also known as punishment by removal, occurs when a favorable event or outcome is removed after a behavior occurs. Taking away a child's video game following misbehavior is an example of negative punishment.

Punishment and its Influence on Behavior

Reinforcement Schedules

Reinforcement is not necessarily a straightforward process, and there are a number of factors that can influence how quickly and how well new things are learned. Skinner found that *when* and *how often* behaviors were reinforced played a role in the speed and strength of acquisition. In other words, the timing and frequency of reinforcement influenced how new behaviors were learned and how old behaviors were modified.

Skinner identified several different schedules of reinforcement that impact the operant conditioning process:

Continuous reinforcement involves delivering a reinforcement every time a response occurs. Learning tends to occur relatively quickly, yet the response rate is quite low. Extinction also occurs very quickly once reinforcement is halted.

Fixed-ratio schedules are a type of partial reinforcement. Responses are reinforced only after a specific number of responses have occurred. This typically leads to a fairly steady response rate.

Fixed-interval schedules are another form of partial reinforcement. Reinforcement occurs only after a certain interval of time has elapsed. Response rates remain fairly steady and start to increase as the reinforcement time draws near, but slow immediately after the reinforcement has been delivered.

Variable-ratio schedules are also a type of partial reinforcement that involve reinforcing behavior after a varied number of responses. This leads to both a high response rate and slow extinction rates.

Variable-interval schedules are the final form of partial reinforcement Skinner described. This schedule involves delivering reinforcement after a variable amount of time has elapsed. This also tends to lead to a fast response rate and slow extinction rate.

Reinforcement Schedules and How They Work

Examples of Operant Conditioning

We can find examples of operant conditioning at work all around us. Consider the case of children completing homework to earn a reward from a parent or teacher, or employees finishing projects to receive praise or promotions. More examples of operant conditioning in action include:

After performing in a community theater play, you receive applause from the audience. This acts as a *positive reinforcer*, inspiring you to try out for more performance roles.

You train your dog to fetch by offering him praise and a pat on the head whenever he performs the behavior correctly. This is another *positive reinforcer*.

A professor tells students that if they have perfect attendance all semester, then they do not have to take the final comprehensive exam. By removing an unpleasant stimulus (the final test), students are *negatively reinforced* to attend class regularly.

If you fail to hand in a project on time, your boss becomes angry and berates your performance in front of your co-workers. This acts as a *positive punisher*, making it less likely that you will finish projects late in the future.

A teen girl does not clean up her room as she was asked, so her parents take away her phone for the rest of the day. This is an example of a *negative punishment* in which a positive stimulus is taken away.

In some of these examples, the promise or possibility of rewards causes an increase in behavior. Operant conditioning can also be used to decrease a behavior via the removal of a desirable outcome or the application of a negative outcome. For example, a child may be told they will lose recess privileges if they talk out of turn in class. This potential for punishment may lead to a decrease in disruptive behaviors.

Classroom application:

Operant conditioning in classroom

Discipline is important for a child's success and development - most teaching staff would vouch for that. It's easy to think that discipline is always a form of punishment, but in truth, this doesn't have to be the case. Operant conditioning encourages positive reinforcement, which can be applied in the classroom environment to get the good behavior you want - and need - from your pupils.

Skinner's theory of operant conditioning uses both positive and negative reinforcements to encourage good and wanted behavior whilst deterring bad and unwanted behavior. Psychologists have observed that we every action has a consequence, and if this is good, the person is more likely to do it again in the future. However, if the consequence isn't so great, it is likely the individual will avoid doing it in a similar situation next time round. It is through this process that we develop our behaviors and begin to understand what is appropriate and useful, and what isn't.

Used in a variety of situations, operant conditioning has been found to be particularly effective in the classroom environment. One of the main ways of reinforcing a behavior is through praise, as the following example illustrates.

During 'listening time' on the carpet, pupils are required to remain quiet and put their hand up when they want to make a vocal contribution to the class. When a child manages to sit and behave in the exemplary way, the teacher may say, 'Great effort, Jamie' or, 'Well done, Louise - just like I asked'. Undoubtedly, the student will feel pleased with themselves after getting such a positive response. The feeling of pride and self-satisfaction is one they are going to want to emulate in the future, and so they are likely to behave well during 'listening time' from here onwards.

Simple though it may be, the teacher has now managed to educate the pupil on the type of behavior she expects, and through positive reinforcement, the child will probably feel determined to impress next time round - a positive outcome for both parties: the teacher, and the child.

Rewards may be used occasionally for a similar effect, but shouldn't be overused, as it is important to prevent the child from developing a dependency. If they become too adjusted to getting sweets, for example, they may eventually struggle to act in the same way without being presented with such a treat.

By building operant conditioning techniques into lesson plans, it is easily possible to teach children useful skills - as well as good behaviors. By using symbols like smiley faces, 'Good Work' stamps, stickers, and even simple ticks when a child does something correctly, you are encouraging them to repeat such satisfying work again further down the line.

You could even use this type of reinforcement when teaching a student something totally new, like how to spell a particular word. When they do it correctly, you can administer praise to ingrain the message that they've done it right. By doing the opposite when they don't get it exactly correct, you can tempt them away from doing it this way in the future. In effect, the process is all about nurturing the student and aiding them in their development. With a good attitude and positive approach, it really can be done.

Chapter 4

Learning theories (Cognitive theories)

Gestalt psychology

Gestalt psychology is a school of thought that looks at the human mind and behavior as a whole. When trying to make sense of the world around us, Gestalt psychology suggests that we do not simply focus on every small component. Instead, our minds tend to perceive objects as elements of more complex systems.

A core belief in Gestalt psychology is holism, or that the whole is greater than the sum of its parts.[1] This school of psychology has played a major role in the modern development of the study of human sensation and perception.

Gestalt Meaning

Gestalt is a German word that roughly means "configuration" or the way things are put together to form a whole object.

History of Gestalt Psychology

Originating in the work of Max Wertheimer, Gestalt psychology formed in part as a response to the structuralism of Wilhelm Wundt.[2]

While followers of structuralism were interested in breaking down psychological matters into their smallest possible parts, Gestalt psychologists wanted instead to look at the totality of the mind and behavior. Guided by the principle of holism,

Wertheimer and his followers identified instances where perception was based on seeing things as a complete whole, not as separate components.

A number of thinkers influenced the development of Gestalt psychology, including Immanuel Kant, Ernst Mach, and Johann Wolfgang von Goethe.[3]

Wertheimer developed Gestalt psychology after observing what he called the phi phenomenon while watching alternating lights on a railway signal.[4] The phi phenomenon is an optical illusion where two stationary objects seem to move if they are shown appearing and disappearing in rapid succession. In other words, we perceive movement where there is none.

Based on his observations of the phi phenomenon, Wertheimer concluded that we perceive things by seeing the whole perception, not by understanding individual parts. In the example of blinking lights at a train station, the whole we perceive is that one light appears to move quickly between two points. The reality is that two separate lights are blinking rapidly without moving at all.

Gestalt Psychologists

Wertheimer's observations of the phi phenomenon are widely credited as the beginning of Gestalt psychology and he went on to publicize the core principles of the field. Other psychologists also had an influence on this school of psychology.[5]

Wolfgang Köhler: Köhler connected Gestalt psychology to the natural sciences, arguing that organic phenomena are examples of holism at work. He also studied hearing and looked at problem-solving abilities in chimpanzees.

Kurt Koffka: Together with Wertheimer and Köhler, Koffka is considered a founder of the field. He applied the concept of Gestalt to child psychology, arguing that infants first understand things holistically before learning to differentiate

things into parts. Koffka played a key role in bringing Gestalt principles to the United States.

Principles of Gestalt Psychology

Gestalt psychology helped introduce the idea that human perception is not just about seeing what is actually present in the world around us. It is also heavily influenced by our motivations and expectations.

Wertheimer created principles to explain how Gestalt perception functions. Some of the most important principles of Gestalt theory are:[26]

Prägnanz: This foundational principle states that we naturally perceive things in their simplest form or organization.

Similarity: This Gestalt principle suggests that we naturally group similar items together based on elements like color, size, or orientation.

Proximity: The principle of proximity states that objects near each other tend to be viewed as a group.

Continuity: According to this principle, we will perceive elements arranged on a line or curve as related to each other, while elements that are not on the line or curve are seen as separate.

Closure: This suggests that elements that form a closed object will be perceived as a group. We will even fill in missing information to create closure and make sense of an object.

Common region: This Gestalt psychology principle states that we tend to group objects together if they're located in the same bounded area. (For example, objects inside a box tend to be considered a group.)

Gestalt Laws of Perception

Developed by German psychologists, the Gestalt laws describe how we interpret the complex world around us. They explain why a series of flashing lights appear to be moving. And why we laws.

History of the Gestalt Laws

Have you noticed how alternately flashing lights, such as neon signs or strands of lights, can look like a single light that was moving back and forth? This optical illusion is known as the phi phenomenon. Discovered by German psychologist Max Wertheimer, this illusion of movement became a basis for Gestalt psychology.[1]

According to Gestalt psychology, this apparent movement happens because our minds fill in missing information. Motion pictures are based on this principle, with a series of still images appearing in rapid succession to form a seamless visual experience.

Gestalt psychology focuses on how our minds organize and interpret visual data. It emphasizes that the whole of anything is greater than its parts.

Koffka, developed a set of rules to explain how (perceptual organization). They called these rules the Gestalt Laws.

accurate term would be "principles." These principles are much like heuristics, which are mental shortcuts for solving problems.

Law of Similarity

The law of similarity states that similar things tend to appear grouped together. Grouping can occur in both visual and auditory stimuli.

In the image at the top of this page, for example, you probably see two separate groupings of colored circles as rows rather than just a collection of dots.

Law of Pragnanz

The law of prägnanz is sometimes referred to as the law of good figure or the law of simplicity. This law holds that when you're presented with a set of ambiguous or complex objects, your brain will make them appear as simple as possible.[3] For example, when presented with the Olympic logo, you see overlapping circles rather than an assortment of curved, connected lines.

The word *prägnanz* is a German term meaning "good figure."

Law of Proximity

According to the law of proximity, things that are close together seem more related than things that are spaced farther apart.

In the image at the top of the page, the circles on the left appear to be part of one grouping while those on the right appear to be part of another. Because the objects are close to each other, we group them together.

Law of Continuity

The law of continuity holds that points that are connected by straight or curving lines are seen in a way that follows the smoothest path. In other words, elements in a line or curve seem more related to one another than those positioned randomly.

Law of Closure

According to the law of closure, we perceive elements as belonging to the same group if they seem to complete some entity. Our brains often ignore contradictory information and fill in gaps in information.

In the image at the top of the page, you probably see the shape of a diamond because your brain fills in the missing gaps in order to create a meaningful image.

The Law of Common Region

The Gestalt law of common region says that when elements are located in the same closed region, we perceive them as belonging to the same group.

Look at the last image at the top of the page. The circles are right next to each other so that the dot at the end of one circle is actually closer to the dot at the end of the neighboring circle. But despite how close those two dots are, we see the dots *inside* the circles as belonging together.

Impact of Gestalt Psychology

Gestalt psychology has largely been subsumed by other types of psychology, but it had an enormous influence on the field. Researchers like Kurt Lewin and Kurt Goldstein were influenced by Gestalt concepts before going on to make important contributions to psychology.

The idea that the whole is different than its parts has influenced our understanding of the brain and social behavior. Gestalt theory still impacts how we understand vision and the ways that context, visual illusions, and information processing impact our perception.

Piaget theory of cognitive development

Jean Piaget's theory of cognitive development suggests that intelligence changes as children grow. A child's cognitive development is not just about acquiring knowledge, the child has to develop or construct a mental model of the world.

Cognitive development occurs through the interaction of innate capacities and environmental events, and children pass through a series of stages.

Piaget's theory of cognitive development proposes 4 stages of development.

Sensorimotor stage: birth to 2 years

Preoperational stage: 2 to 7 years

Concrete operational stage: 7 to 11 years

Formal operational stage: ages 12 and up

The sequence of the stages is universal across cultures and follow the same invariant (unchanging) order. All children go through the same stages in the same order (but not all at the same rate).

How Piaget Developed the Theory

Piaget was employed at the Binet Institute in the 1920s, where his job was to develop French versions of questions on English intelligence tests. He became intrigued with the reasons children gave for their wrong answers to the questions that required logical thinking.

He believed that these incorrect answers revealed important differences between the thinking of adults and children.

Piaget branched out on his own with a new set of assumptions about children's intelligence:

Children's intelligence differs from an adult's in quality rather than in quantity. This means that children reason (think) differently from adults and see the world in different ways.

Children actively build up their knowledge about the world. They are not passive creatures waiting for someone to fill their heads with knowledge.

The best way to understand children's reasoning was to see things from their point of view.

What Piaget wanted to do was not to measure how well children could count, spell or solve problems as a way of grading their I.Q. What he was more interested in was the way in which fundamental concepts like the very idea of number, time, quantity, causality, justice and so on emerged.

Piaget studied children from infancy to adolescence using naturalistic observation of his own three babies and sometimes controlled observation too. From these he wrote diary descriptions charting their development.

He also used clinical interviews and observations of older children who were able to understand questions and hold conversations.

Stages of Cognitive Development

Jean Piaget's theory of cognitive development suggests that children move through four different stages of intellectual development which reflect the increasing sophistication of children's thought

Each child goes through the stages in the same order, and child development is determined by biological maturation and interaction with the environment.

At each stage of development, the child's thinking is qualitatively different from the other stages, that is, each stage involves a different type of intelligence.

Piaget's Four Stages

Stage	Age	Goal
Sensorimotor	Birth to 18-24 months	Object permanence
Preoperational	2 to 7 years old	Symbolic thought
Concrete operational	Ages 7 to 11 years	Logical thought
Formal operational	Adolescence to adulthood	Scientific reasoning

Although no stage can be missed out, there are individual differences in the rate at which children progress through stages, and some individuals may never attain the later stages.

Piaget did not claim that a particular stage was reached at a certain age - although descriptions of the stages often include an indication of the age at which the average child would reach each stage.

The Sensorimotor Stage

Ages: Birth to 2 Years

Major Characteristics and Developmental Changes:

The infant learns about the world through their senses and through their actions (moving around and exploring its environment).

During the sensorimotor stage a range of cognitive abilities develop. These include: object permanence; self-recognition; deferred imitation; and representational play.

They relate to the emergence of the general symbolic function, which is the capacity to represent the world mentally

At about 8 months the infant will understand the permanence of objects and that they will still exist even if they can't see them and the infant will search for them when they disappear.

During this stage the infant lives in the present. It does not yet have a mental picture of the world stored in its memory therefore it does not have a sense of object permanence.

If it cannot see something then it does not exist. This is why you can hide a toy from an infant, while it watches, but it will not search for the object once it has gone out of sight.

The main achievement during this stage is object permanence - knowing that an object still exists, even if it is hidden. It requires the ability to form a mental representation (i.e., a schema) of the object.

Towards the end of this stage the general symbolic function begins to appear where children show in their play that they can use one object to stand for another. Language starts to appear because they realise that words can be used to represent objects and feelings.

The child begins to be able to store information that it knows about the world, recall it and label it.

The Preoperational Stage

Ages: 2 - 7 Years

Major Characteristics and Developmental Changes:

Toddlers and young children acquire the ability to internally represent the world through language and mental imagery.

During this stage, young children can think about things symbolically. This is the ability to make one thing, such as a word or an object, stand for something other than itself.

A child’s thinking is dominated by how the world looks, not how the world is. It is not yet capable of logical (problem solving) type of thought.

Infants at this stage also demonstrate animism. This is the tendency for the child to think that non-living objects (such as toys) have life and feelings like a person’s.

By 2 years, children have made some progress towards detaching their thought from physical world. However have not yet developed logical (or 'operational') thought characteristic of later stages.

Thinking is still intuitive (based on subjective judgements about situations) and egocentric (centred on the child's own view of the world).

The Concrete Operational Stage

Ages: 7 - 11 Years

Major Characteristics and Developmental Changes:

During this stage, children begin to thinking logically about concrete events.

Children begin to understand the concept of conservation; understanding that, although things may change in appearance, certain properties remain the same.

During this stage, children can mentally reverse things (e.g. picture a ball of plasticine returning to its original shape).

During this stage, children also become less egocentric and begin to think about how other people might think and feel.

The stage is called concrete because children can think logically much more successfully if they can manipulate real (concrete) materials or pictures of them.

Piaget considered the concrete stage a major turning point in the child's cognitive development because it marks the beginning of logical or operational thought. This means the child can work things out internally in their head (rather than physically try things out in the real world).

Children can conserve number (age 6), mass (age 7), and weight (age 9). Conservation is the understanding that something stays the same in quantity even though its appearance changes.

But operational thought only effective here if child asked to reason about materials that are physically present. Children at this stage will tend to make mistakes or be overwhelmed when asked to reason about abstract or hypothetical problems.

The Formal Operational Stage

Ages: 12 and Over

Major Characteristics and Developmental Changes:

Concrete operations are carried out on things whereas formal operations are carried out on ideas. Formal operational thought is entirely freed from physical and perceptual constraints.

During this stage, adolescents can deal with abstract ideas (e.g. no longer needing to think about slicing up cakes or sharing sweets to understand division and fractions).

They can follow the form of an argument without having to think in terms of specific examples.

Adolescents can deal with hypothetical problems with many possible solutions. E.g. if asked ‘What would happen if money were abolished in one hour’s time? they could speculate about many possible consequences.

From about 12 years children can follow the form of a logical argument without reference to its content. During this time, people develop the ability to think about abstract concepts, and logically test hypotheses.This stage sees emergence of scientific thinking, formulating abstract theories and hypotheses when faced with a problem.

Piaget's Theory Differs From Others In Several Ways:

Piaget's (1936, 1950) theory of cognitive development explains how a child constructs a mental model of the world. He disagreed with the idea that intelligence was a fixed trait, and regarded cognitive development as a process which occurs due to biological maturation and interaction with the environment.

Children's ability to understand, think about and solve problems in the world develops in a stop-start, discontinuous manner (rather than gradual changes over time).

▪ It is concerned with children, rather than all learners.

▪ It focuses on development, rather than learning per se, so it does not address learning of information or specific behaviors.

▪ It proposes discrete stages of development, marked by qualitative differences, rather than a gradual increase in number and complexity of behaviors, concepts, ideas, etc.

The goal of the theory is to explain the mechanisms and processes by which the infant, and then the child, develops into an individual who can reason and think using hypotheses.

To Piaget, cognitive development was a progressive reorganization of mental processes as a result of biological maturation and environmental experience.

Children construct an understanding of the world around them, then experience discrepancies between what they already know and what they discover in their environment.

Schemas

Piaget claimed that knowledge cannot simply emerge from sensory experience; some initial structure is necessary to make sense of the world.

According to Piaget, children are born with a very basic mental structure (genetically inherited and evolved) on which all subsequent learning and knowledge are based.

Schemas are the basic building blocks of such cognitive models, and enable us to form a mental representation of the world.

Piaget (1952, p. 7) defined a schema as: "a cohesive, repeatable action sequence possessing component actions that are tightly interconnected and governed by a core meaning."

In more simple terms Piaget called the schema the basic building block of intelligent behavior – a way of organizing knowledge. Indeed, it is useful to think of schemas as “units” of knowledge, each relating to one aspect of the world, including objects, actions, and abstract (i.e., theoretical) concepts.

Wadsworth (2004) suggests that schemata (the plural of schema) be thought of as 'index cards' filed in the brain, each one telling an individual how to react to incoming stimuli or information.

When Piaget talked about the development of a person's mental processes, he was referring to increases in the number and complexity of the schemata that a person had learned.

When a child's existing schemas are capable of explaining what it can perceive around it, it is said to be in a state of equilibrium, i.e., a state of cognitive (i.e., mental) balance.

Piaget emphasized the importance of schemas in cognitive development and described how they were developed or acquired. A schema can be defined as a set of linked mental representations of the world, which we use both to understand and

to respond to situations. The assumption is that we store these mental representations and apply them when needed.

Examples of Schemas

A person might have a schema about buying a meal in a restaurant. The schema is a stored form of the pattern of behavior which includes looking at a menu, ordering food, eating it and paying the bill. This is an example of a type of schema called a 'script.' Whenever they are in a restaurant, they retrieve this schema from memory and apply it to the situation.

The schemas Piaget described tend to be simpler than this - especially those used by infants. He described how - as a child gets older - his or her schemas become more numerous and elaborate.

Piaget believed that newborn babies have a small number of innate schemas - even before they have had many opportunities to experience the world. These neonatal schemas are the cognitive structures underlying innate reflexes. These reflexes are genetically programmed into us.

For example, babies have a sucking reflex, which is triggered by something touching the baby's lips. A baby will suck a nipple, a comforter (dummy), or a person's finger. Piaget, therefore, assumed that the baby has a 'sucking schema.'

Similarly, the grasping reflex which is elicited when something touches the palm of a baby's hand, or the rooting reflex, in which a baby will turn its head towards something which touches its cheek, are innate schemas. Shaking a rattle would be the combination of two schemas, grasping and shaking.

The Process of Adaptation

Jean Piaget (1952; see also Wadsworth, 2004) viewed intellectual growth as a process of **adaptation** (adjustment) to the world. This happens through assimilation, accommodation, and equilibration.

Assimilation

Piaget defined assimilation as the cognitive process of fitting new information into existing cognitive schemas, perceptions, and understanding. Overall beliefs and understanding of the world do not change as a result of the new information.

This means that when you are faced with new information, you make sense of this information by referring to information you already have (information processed and learned previously) and try to fit the new information into the information you already have.

For example, a 2-year-old child sees a man who is bald on top of his head and has long frizzy hair on the sides. To his father's horror, the toddler shouts "Clown, clown" (Siegler et al., 2003).

Accommodation

Psychologist Jean Piaget defined accommodation as the cognitive process of revising existing cognitive schemas, perceptions, and understanding so that new information can be incorporated. This happens when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation.

In order to make sense of some new information, you actual adjust information you already have (schemas you already have, etc.) to make room for this new information.

For example, a child may have a schema for birds (feathers, flying, etc.) and then they see a plane, which also flies, but would not fit into their bird schema.

In the “clown” incident, the boy’s father explained to his son that the man was not a clown and that even though his hair was like a clown’s, he wasn’t wearing a funny costume and wasn’t doing silly things to make people laugh.

With this new knowledge, the boy was able to change his schema of “clown” and make this idea fit better to a standard concept of “clown”.

Equilibration

Piaget believed that all human thought seeks order and is uncomfortable with contradictions and inconsistencies in knowledge structures. In other words, we seek 'equilibrium' in our cognitive structures.

Equilibrium occurs when a child's schemas can deal with most new information through assimilation. However, an unpleasant state of disequilibrium occurs when new information cannot be fitted into existing schemas (assimilation).

Piaget believed that cognitive development did not progress at a steady rate, but rather in leaps and bounds. Equilibration is the force which drives the learning process as we do not like to be frustrated and will seek to restore balance by mastering the new challenge (accommodation).Once the new information is acquired the process of assimilation with the new schema will continue until the next time we need to make an adjustment to it

Educational Implications

Piaget (1952) did not explicitly relate his theory to education, although later researchers have explained how features of Piaget's theory can be applied to teaching and learning.

Piaget has been extremely influential in developing educational policy and teaching practice. For example, a review of primary education by the UK government in 1966 was based strongly on Piaget's theory. The result of this review led to the publication of the Plowden report (1967).

Discovery learning – the idea that children learn best through doing and actively exploring - was seen as central to the transformation of the primary school curriculum.

'The report's recurring themes are individual learning, flexibility in the curriculum, the centrality of play in children's learning, the use of the environment, learning by discovery and the importance of the evaluation of children's progress - teachers should 'not assume that only what is measurable is valuable.'

Because Piaget's theory is based upon biological maturation and stages, the notion of 'readiness' is important. Readiness concerns when certain information or concepts should be taught. According to Piaget's theory children should not be taught certain concepts until they have reached the appropriate stage of cognitive development.

According to Piaget (1958), assimilation and accommodation require an active learner, not a passive one, because problem-solving skills cannot be taught, they must be discovered.

Within the classroom learning should be student-centered and accomplished through active discovery learning. The role of the teacher is to facilitate learning,

rather than direct tuition. Therefore, teachers should encourage the following within the classroom:

o Focus on the process of learning, rather than the end product of it.

o Using active methods that require rediscovering or reconstructing "truths."

o Using collaborative, as well as individual activities (so children can learn from each other).

o Devising situations that present useful problems, and create disequilibrium in the child.

o Evaluate the level of the child's development so suitable tasks can be set.

Critical Evaluation

Support

The influence of Piaget's ideas in developmental psychology has been enormous. He changed how people viewed the child's world and their methods of studying children.

He was an inspiration to many who came after and took up his ideas. Piaget's ideas have generated a huge amount of research which has increased our understanding of cognitive development.

Piaget (1936) was one of the first psychologists to make a systematic study of cognitive development. His contributions include a stage theory of child cognitive development, detailed observational studies of cognition in children, and a series of simple but ingenious tests to reveal different cognitive abilities.

His ideas have been of practical use in understanding and communicating with children, particularly in the field of education (re: Discovery Learning).

Criticisms

Are the stages real? Vygotsky and Bruner would rather not talk about stages at all, preferring to see development as a continuous process. Others have queried the age ranges of the stages. Some studies have shown that progress to the formal operational stage is not guaranteed.

For example, Keating (1979) reported that 40-60% of college students fail at formal operation tasks, and Dasen (1994) states that only one-third of adults ever reach the formal operational stage.

Because Piaget concentrated on the universal stages of cognitive development and biological maturation, he failed to consider the effect that the social setting and culture may have on cognitive development.

Dasen (1994) cites studies he conducted in remote parts of the central Australian desert with 8-14 year old Indigenous Australians. He gave them conservation of liquid tasks and spatial awareness tasks. He found that the ability to conserve came later in the Aboriginal children, between aged 10 and 13 (as opposed to between 5 and 7, with Piaget's Swiss sample).

However, he found that spatial awareness abilities developed earlier amongst the Aboriginal children than the Swiss children. Such a study demonstrates cognitive development is not purely dependent on maturation but on cultural factors too – spatial awareness is crucial for nomadic groups of people.

Vygotsky, a contemporary of Piaget, argued that social interaction is crucial for cognitive development. According to Vygotsky the child's learning always occurs in a social context in co-operation with someone more skillful (MKO). This social interaction provides language opportunities and Vygotksy conisdered language the foundation of thought.

Piaget's methods (observation and clinical interviews) are more open to biased interpretation than other methods. Piaget made careful, detailed naturalistic observations of children, and from these he wrote diary descriptions charting their development. He also used clinical interviews and observations of older children who were able to understand questions and hold conversations.

Because Piaget conducted the observations alone the data collected are based on his own subjective interpretation of events. It would have been more reliable if Piaget conducted the observations with another researcher and compared the results afterward to check if they are similar (i.e., have inter-rater reliability).

Although clinical interviews allow the researcher to explore data in more depth, the interpretation of the interviewer may be biased. For example, children may not understand the question/s, they have short attention spans, they cannot express themselves very well and may be trying to please the experimenter. Such methods meant that Piaget may have formed inaccurate conclusions.

As several studies have shown Piaget underestimated the abilities of children because his tests were sometimes confusing or difficult to understand (e.g., Hughes, 1975).

Piaget failed to distinguish between competence (what a child is capable of doing) and performance (what a child can show when given a particular task). When tasks were altered, performance (and therefore competence) was affected. Therefore, Piaget might have underestimated children's cognitive abilities.

For example, a child might have object permanence (competence) but still not be able to search for objects (performance). When Piaget hid objects from babies he found that it wasn't till after nine months that they looked for it. However, Piaget

relied on manual search methods – whether the child was looking for the object or not.

Later, research such as Baillargeon and Devos (1991) reported that infants as young as four months looked longer at a moving carrot that didn't do what it expected, suggesting they had some sense of permanence, otherwise they wouldn't have had any expectation of what it should or shouldn't do.

The concept of schema is incompatible with the theories of Bruner (1966) and Vygotsky (1978). Behaviorism would also refute Piaget's schema theory because is cannot be directly observed as it is an internal process. Therefore, they would claim it cannot be objectively measured.

Piaget studied his own children and the children of his colleagues in Geneva in order to deduce general principles about the intellectual development of all children. Not only was his sample very small, but it was composed solely of European children from families of high socio-economic status. Researchers have therefore questioned the generalisability of his data.

For Piaget, language is seen as secondary to action, i.e., thought precedes language. The Russian psychologist Lev Vygotsky (1978) argues that the development of language and thought go together and that the origin of reasoning is more to do with our ability to communicate with others than with our interaction with the material world.

Information processing model / approach

At the very heart of cognitive psychology is the idea of information processing.

Cognitive psychology sees the individual as a processor of information, in much the same way that a computer takes in information and follows a program to produce an output.

Basic Assumptions

The information processing approach is based on a number of assumptions, including:

(1) information made available by the environment is processed by a series of processing systems (e.g. attention, perception, short-term memory)

(2) these processing systems transform or alter the information in systematic ways;

(3) the aim of research is to specify the processes and structures that underlie cognitive performance;

(4) information processing in humans resembles that in computers.

Computer - Mind Analogy

The development of the computer in the 1950s and 1960s had an important influence on psychology and was, in part, responsible for the cognitive approach becoming the dominant approach in modern psychology (taking over from Behaviorism).

The computer gave cognitive psychologists a metaphor, or analogy, to which they could compare human mental processing. The use of the computer as a tool for thinking how the human mind handles information is known as the computer analogy.

Essentially, a computer codes (i.e., changes) information, stores information, uses information, and produces an output (retrieves info). The idea of information processing was adopted by cognitive psychologists as a model of how human thought works.

For example, the eye receives visual information and codes information into electric neural activity which is fed back to the brain where it is “stored” and “coded”. This information is can be used by other parts of the brain relating to mental activities such as memory, perception and attention. The output (i.e. behavior) might be, for example, to read what you can see on a printed page.

Hence the information processing approach characterizes thinking as the environment providing input of data, which is then transformed by our senses. The information can be stored, retrieved and transformed using “mental programs”, with the results being behavioral responses.

Cognitive psychology has influenced and integrated with many other approaches and areas of study to produce, for example, social learning theory, cognitive neuropsychology and artificial intelligence (AI).

Information Processing and Selective Attention

When we are selectively attending to one activity, we tend to ignore other stimulation, although our attention can be distracted by something else, like the telephone ringing or someone using our name.

Psychologists are interested in what makes us attend to one thing rather than another (selective attention); why we sometimes switch our attention to something that was previously unattended (e.g. Cocktail Party Syndrome), and how many things we can attend to at the same time (attentional capacity).

One way of conceptualizing attention is to think of humans as information processors who can only process a limited amount of information at a time without becoming overloaded.

Broadbent and others in the 1950s adopted a model of the brain as a limited capacity information processing system, through which external input is transmitted.

Information processing models consist of a series of stages, or boxes, which represent stages of processing. Arrows indicate the flow of information from one stage to the next.

Input processes are concerned with the analysis of the stimuli.

Storage processes cover everything that happens to stimuli internally in the brain and can include coding and manipulation of the stimuli.

Output processes are responsible for preparing an appropriate response to a stimulus.

Critical Evaluation

A number of models of attention within the Information Processing framework have been proposed including:

Broadbent's Filter Model (1958), Treisman's Attenuation Model (1964) and Deutsch and Deutsch's Late Selection Model (1963).

However, there are a number of evaluative points to bear in mind when studying these models, and the information processing approach in general. These include:

1. The information processing models assume serial processing of stimulus inputs.

Serial processing effectively means one process has to be completed before the next starts

Parallel processing assumes some or all processes involved in a cognitive task(s) occur at the same time.

There is evidence from dual-task experiments that parallel processing is possible. It is difficult to determine whether a particular task is processed in a serial or parallel fashion as it probably depends (a) on the processes required to solve a task, and (b) the amount of practice on a task.

Parallel processing is probably more frequent when someone is highly skilled; for example a skilled typist thinks several letters ahead, a novice focuses on just 1 letter at a time.

2. The analogy between human cognition and computer functioning adopted by the information processing approach is limited.

Computers can be regarded as information processing systems insofar as they:

(i) combine information presented with stored information to provide solutions to a variety of problems, and

(ii) most computers have a central processor of limited capacity and it is usually assumed that capacity limitations affect the human attentional system.

BUT -

(i) the human brain has the capacity for extensive parallel processing and computers often rely on serial processing;

(ii) humans are influenced in their cognitions by a number of conflicting emotional and motivational factors.

Most laboratory studies are artificial and could be said to lack ecological validity.

In everyday life, cognitive processes are often linked to a goal (e.g. you pay attention in class because you want to pass the examination), whereas in the laboratory the experiments are carried out in isolation form other cognitive and motivational factors.

Although these laboratory experiments are easy to interpret, the data may not be applicable to the real world outside the laboratory. More recent ecologically valid approaches to cognition have been proposed (e.g. the Perceptual Cycle, Neisser, 1976).

Attention has been studied largely in isolation from other cognitive processes, although clearly it operates as an interdependent system with the related cognitive processes of perception and memory.

The more successful we become at examining part of the cognitive system in isolation, the less our data are likely to tell us about cognition in everyday life.

4. Although it is agreed that stimulus driven (bottom-up) information in cognition is important, what the individual brings to the task in terms of expectations/past experiences are also important.

These influences are known as 'top-down' or 'conceptually-driven' processes. For example, read the triangle below:

Expectation (top-down processing) often over-rides information actually available in the stimulus (bottom-up) which we are, supposedly, attending to. How did you read the text in the triangle above?

Comparision between behaviorism and cognitivism

	Behaviorism	**Cognitivism**
How does learning happen?	In some certain environment, responses happen after stimulates.	Learning is an internal mental process including input, process and retrieval. Learners are active in learning process.
What influences learning?	Stimulate, and reinforcement	Learners' metal activities such as attention, code,

		transfer, repetition, store, and retrieval. Learners' beliefs, thoughts, attitudes, and values.
What is the function of memory?	Do not pay attention to memory, certain practice and review can maintain the preparation for the response.	Memory is very important in learning process. Learning depends a lot on that whether information can be coded and stored in mind.
What is the function of behavior?	Learning is defined as changes in behavior.	Learning can be inferred from behavior.
How does transfer happen?	Transfer is from generalization.	Learners can use knowledge in different situations, which means transfer happens.
Which types of learning could be best explained by the theory?	Low level types such as knowledge, understand, and application.	High level types of learning and complex situation such as inferring, problem solving and information processing.
What assumptions are related to instruction?	emphasize on observable and measurable learning	emphasize on learners' active participation in

	outcomes (task analysis); master low level knowledge before enter high level knowledge (how to present learning content, master learning); use reinforcement to consolidate learning result (rewards, feedback); use cuing, shaping and practicing to enhance the relationship between stimulate, response and reinforcement (practice from easy to difficult sequence)	learning process (self-regulation); use hierarchical knowledge to analyze learning tasks (task analysis); emphasize on structure, management and sequence of information, in order to make better information processing (use cognitive strategies); encourage learners to make connection with prior knowledge.
How to design instruction in order to improve learning be the theory?	to make sure which stimulate can trigger the expectant response. arrange the environment which matches the stimulate and response. arrange conditioning to make learners show expectant respond for the certain	understand that learners have their prior knowledge and experience which can influence new learning greatly. present new knowledge in an effective sequence to fill out the gap between prior knowledge and new

	stimulate.	knowledge. give practice with feedback to help learners to accommodation and assimilation.

Chapter 5 :

Learning Theories(Social/Humanistic Theory)

Albert Bandura's Social Learning Theory

Social learning theory, proposed by Albert Bandura, emphasizes the importance of observing, modelling, and imitating the behaviors, attitudes, and emotional reactions of others. Social learning theory considers how both environmental and cognitive factors interact to influence human learning and behavior.

In social learning theory, Albert Bandura (1977) agrees with the behaviorist learning theories of

classical conditioning and operant conditioning. However, he adds two important ideas:

Albert Bandura - Social Learning Theory

Mediating processes occur between stimuli & responses.

Behavior is learned from the environment through the process of observational learning.

Observational Learning

Children observe the people around them behaving in various ways. This is illustrated during the famous Bobo doll experiment (Bandura, 1961).

Individuals that are observed are called models. In society, children are surrounded by many influential models, such as parents within the family, characters on children's TV, friends within their peer group and teachers at school. These models provide examples of behavior to observe and imitate, e.g., masculine and feminine, pro and anti-social, etc.

Children pay attention to some of these people (models) and encode their behavior. At a later time they may imitate (i.e., copy) the behavior they have observed.

They may do this regardless of whether the behavior is 'gender appropriate' or not, but there are a number of processes that make it more likely that a child will reproduce the behavior that its society deems appropriate for its gender.

First, the child is more likely to attend to and imitate those people it perceives as similar to itself. Consequently, it is more likely to imitate behavior modeled by people of the same gender.

Second, the people around the child will respond to the behavior it imitates with either reinforcement or punishment. If a child imitates a model's behavior and the consequences are rewarding, the child is likely to continue performing the behavior.

If a parent sees a little girl consoling her teddy bear and says "what a kind girl you are," this is rewarding for the child and makes it more

likely that she will repeat the behavior. Her behavior has been reinforced (i.e., strengthened).

Reinforcement can be external or internal and can be positive or negative. If a child wants approval from parents or peers, this approval is an external reinforcement, but feeling happy about being approved of is an internal reinforcement. A child will behave in a way which it believes will earn approval because it desires approval.

Positive (or negative) reinforcement will have little impact if the reinforcement offered externally does not match with an individual's needs. Reinforcement can be positive or negative, but the important factor is that it will usually lead to a change in a person's behavior.

Third, the child will also take into account of what happens to other people when deciding whether or not to copy someone's actions. A person learns by observing the consequences of another person's (i.e., models) behavior, e.g., a younger sister observing an older sister being rewarded for a particular behavior is more likely to repeat that behavior herself. This is known as vicarious reinforcement.

This relates to an attachment to specific models that possess qualities seen as rewarding. Children will have a number of models with whom they identify. These may be people in their immediate world, such as parents or older siblings, or could be fantasy characters or people in the media. The motivation to identify with a particular model is that they have a quality which the individual would like to possess.

Identification occurs with another person (the model) and involves taking on (or adopting) observed behaviors, values, beliefs and attitudes of the person with whom you are identifying.

The term identification as used by Social Learning Theory is similar to the Freudian term related to the Oedipus complex. For example, they both involve internalizing or adopting another person's behavior. However, during the Oedipus complex, the child can only identify with the same sex parent, whereas with Social Learning Theory the person (child or adult) can potentially identify with any other person.

Identification is different to imitation as it may involve a number of behaviors being adopted, whereas imitation usually involves copying a single behavior.

Mediational Processes

SLT is often described as the 'bridge' between traditional learning theory (i.e., behaviorism) and the cognitive approach. This is because it focuses on how mental (cognitive) factors are involved in learning.

Unlike Skinner, Bandura (1977) believes that humans are active information processors and think about the relationship between their behavior and its consequences.

Observational learning could not occur unless cognitive processes were at work. These mental factors mediate (i.e., intervene) in the learning process to determine whether a new response is acquired.

Therefore, individuals do not automatically observe the behavior of a model and imitate it. There is some thought prior to imitation, and this consideration is called mediational processes. This occurs between observing the behavior (stimulus) and imitating it or not (response)

There are four mediational processes proposed by Bandura:

Attention: The individual needs to pay attention to the behavior and its consequences and form a mental representation of the behavior. For a behavior to be imitated, it has to grab our attention. We observe many behaviors on a daily basis, and many of these are not noteworthy. Attention is therefore extremely important in whether a behavior influences others imitating it.

Retention: How well the behavior is remembered. The behavior may be noticed but is it not always remembered which obviously prevents imitation. It is important therefore that a memory of the behavior is formed to be performed later by the observer.

Much of social learning is not immediate, so this process is especially vital in those cases. Even if the behavior is reproduced shortly after seeing it, there needs to be a memory to refer to.

Reproduction: This is the ability to perform the behavior that the model has just demonstrated. We see much behavior on a daily basis that we would like to be able to imitate but that this not always possible. We are limited by our physical ability and for that reason, even if we wish to reproduce the behavior, we cannot.

This influences our decisions whether to try and imitate it or not. Imagine the scenario of a 90-year-old-lady who struggles to walk watching Dancing on Ice. She may appreciate that the skill is a desirable one, but she will not attempt to imitate it because she physically cannot do it.

Motivation: The will to perform the behavior. The rewards and punishment that follow a behavior will be considered by the observer. If the perceived rewards outweigh the perceived costs (if there are any), then the behavior will be more likely to be imitated by the observer. If the vicarious reinforcement is not seen to be important enough to the observer, then they will not imitate the behavior.

Critical Evaluation

The social learning approach takes thought processes into account and acknowledges the role that they play in deciding if a behavior is to be imitated or not. As such, SLT provides a more comprehensive explanation of human learning by recognizing the role of mediational processes.

For example, Social Learning Theory is able to explain many more complex social behaviors (such as gender roles and moral behavior) than models of learning based on simple reinforcement.

However, although it can explain some quite complex behavior, it cannot adequately account for how we develop a whole range of behavior including thoughts and feelings. We have a lot of cognitive control over our behavior and just because we have had experiences of violence does not mean we have to reproduce such behavior.

It is for this reason that Bandura modified his theory and in 1986 renamed his Social Learning Theory, Social Cognitive Theory (SCT), as a better description of how we learn from our social experiences.

Some criticisms of social learning theory arise from their commitment to the environment as the chief influence on behavior. It is limiting to describe behavior solely in terms of either nature or nurture and attempts to do this underestimate the complexity of human behavior. It is more likely that behavior is due to an interaction between nature (biology) and nurture (environment).

Social learning theory is not a full explanation for all behavior. This is particularly the case when there is no apparent role model in the person's life to imitate for a given behavior.

The discovery of mirror neurons has lent biological support to the theory of social learning. Although research is in its infancy the recent discovery of "mirror neurons" in primates may constitute a neurological basis for imitation. These are neurons which fire both if the animal does

something itself, and if it observes the action being done by another.

Humanistic Approach

Saul McLeod, updated 2020

Humanistic, humanism and humanist are terms in psychology relating to an approach which studies the whole person and the uniqueness of each individual. Essentially, these terms refer to the same approach in psychology.

Humanistic psychology is a perspective that emphasizes looking at the the whole person, and the uniqueness of each individual. Humanistic psychology begins with the existential assumptions that people have free will and are motivated to acheive their potential and self-actualize.

The humanistic approach in psychology developed as a rebellion against what some psychologists saw as the limitations of the behaviorist and psychodynamic psychology.

The humanistic approach is thus often called the "third force" in psychology after psychoanalysis and behaviorism (Maslow, 1968).

Humanism rejected the assumptions of the behaviorist perspective which is characterized as deterministic, focused on reinforcement of stimulus-response behavior and heavily dependent on animal research.

Humanistic psychology also rejected the psychodynamic approach because it is also deterministic, with unconscious irrational and instinctive forces determining human thought and behavior. Both behaviorism and psychoanalysis are regarded as dehumanizing by humanistic psychologists.

Humanistic psychology expanded its influence throughout the 1970s and the 1980s. Its impact can be understood in terms of three major areas:

1) It offered a new set of values for approaching an understanding of human nature and the human condition.

2) It offered an expanded horizon of methods of inquiry in the study of human behavior.

3) It offered a broader range of more effective methods in the professional practice of psychotherapy.

Basic Assumptions

Humanistic psychology begins with the existential assumption that people have free will:

Personal agency is the humanistic term for the exercise of free will. Personal agency refers to the choices we make in life, the paths we go down and their consequences.

People are basically good, and have an innate need to make themselves and the world better:

The humanistic approach emphasizes the personal worth of the individual, the centrality of human values, and the creative, active nature of human beings.

The approach is optimistic and focuses on the noble human capacity to overcome hardship, pain and despair.

People are motivated to self-actualize:

Self-actualization concerns psychological growth, fulfillment and satisfaction in life.

Both Rogers and Maslow regarded personal growth and fulfillment in life as a basic human motive. This means that each person, in different ways, seeks to grow psychologically and continuously enhance themselves.

However, Rogers and Maslow both describe different ways of how self-actualization can be achieved.

The subjective, conscious experiences of the individual is most important:

Humanistic psychologists argue that objective reality is less important than a person's subjective perception and understanding of the world.

Sometimes the humanistic approach is called phenomenological. This means that personality is studied from the point of view of the individual's subjective experience.

For Rogers the focus of psychology is not behavior (Skinner), the unconscious (Freud), thinking (Wundt) or the human brain but how individuals perceive and interpret events. Rogers is therefore important because he redirected psychology towards the study of the self.

Humanism rejects scientific methodology:

Rogers and Maslow placed little value on scientific psychology, especially the use of the psychology laboratory to investigate both human and animal behavior.

Humanism rejects scientific methodology like experiments and typically uses qualitative research methods. For example, diary accounts, open-ended questionnaires, unstructured interviews and unstructured observations.

Qualitative research is useful for studies at the individual level, and to find out, in depth, the ways in which people think or feel (e.g. case studies).

The way to really understand other people is to sit down and talk with them, share their experiences and be open to their feelings.

Humanism rejected comparative psychology (the study of animals) because it does not tell us anything about the unique properties of human beings:

Humanism views human beings as fundamentally different from other animals, mainly because humans are conscious beings capable of thought, reason and language.

For humanistic psychologists' research on animals, such as rats, pigeons, or monkeys held little value.

Research on such animals can tell us, so they argued, very little about human thought, behavior and experience.

The History of Humanistic Psychology

Maslow (1943) developed a hierarchical theory of human motivation.

Carl Rogers (1946) publishes *Significant aspects of client-centered therapy* (also called person centered therapy).

In 1957 and 1958, at the invitation of Abraham Maslow and Clark Moustakas, two meetings were held in Detroit among psychologists who were interested in founding a professional association dedicated to a more meaningful, more humanistic vision.

In 1962, with the sponsorship of Brandeis University, this movement was formally launched as the Association for Humanistic Psychology.

The first issue of the Journal of Humanistic Psychology appeared in the Spring of 1961.

Clark Hull's (1943) *Principles of behavior* was published.

B.F. Skinner (1948) published *Walden Two*, in which he described a utopian society founded upon behaviorist principles.

Classroom Application .

THE APPLICATION OF HUMANISM TEACHING THEORY

Teaching Aim

"Self-actualization" is the education aim which is pursued by all of the humanism

educators including Rogers. Rogers points out that what is the reason for people to learn, the

only reason is to satisfy the self-actualization needs. “Self-actualization” is people’s instinct

need and it is the most important inner motility, even the power to promote the society. The

aim of education is to promote “selfhood” to be realized. Therefore “self-actualization”

becomes the basic education aim. The education ideal is to foster “self-actualizer.” He

emphasizes that in the world which we have been living in, the aim of education is to foster

open-minded, dynamic and adjustable people who know how to learn, and continue to learn.

Rogers regarded the traditional relationship between teachers and students as “kettle and

cup”. The teacher is a kettle and the student is an empty cup. The teaching is to pour the

water from the kettle into the cup. The student is passive absolutely. He thought if we want to

change the present bad situation, we must establish the thought with the student as the

subject, and respect the student, encourage them to think independently, at last make the

student be independent and volunteer to do things, and they will become more confident. To

reflect the theory in concrete teaching aim, we should not take the students as "accepter" who

is passive, negative, automatic and do not care for their emotion. We can not only state pure

knowledge or skill aim, and cannot consider to controlling the aim or achieve the aim either.

As Rogers says "a man is a running program, not a cluster if solid material, he is a group of

great potential changing all the time, not a group of solid character." On the basis of this

concept, when we establish teaching aim, we should emphasize the integration of knowledge

and ability.

Teaching Process

Rogers encourages the students to develop freely, it does not mean to encourage

them to "learn freedom", he believes that it is not given by outside, it is a character which can

make people have the courage to try some unknown, uncertain field. He thinks that the

teaching process should contract a safe psychological atmosphere where the student can set

out their inner potentiality.

In traditional education, we pay much more attention to teaching the knowledge

on the book, and the teacher pays more attention to teaching the textbook. They regard

teaching well as the premise of learning well. In fact, if we want to make progress in

teaching, we should not only research on how to teach well, but also should research on how

the students can learn well. This is just one of the teaching processes which were emphasized

by humanism teaching theory that is to develop freely. To learn well, we must give the

students chances to develop freely. Nowadays, the development of science and technology

offers us a wider space, the students can make use of the modern computer skill, they can

choose teacher from the network freely. This method offers the students a better choice to

learn. They can choose any subjects to learn if they are interested in and the ability of

recognition and operation of advanced education concept and advanced science and

technology will send the students to the front of subject knowledge. The advantage of the

outside factors will compensate the students' individual limitation. The modern education

changes the process which the students realize things in the learning process. Traditional

teaching process is made up of knowing the textbook, understand the textbook, strengthen the

knowledge and using the knowledge and these moments are formed continuously in a stable

procedure. The usage of science and technology makes cognition, understanding, strengthen

and using into one, and makes the content of education colourful and interesting. It is good

for the student to obtain a strong realization, and it also can lead the student to resolve the

nature of things and the inner relation. This will be more helpful for the student to develop

freely. During the process of teaching, the teacher can offer the students various learning

resources, such as useful websites on the internet. This will be helpful for learning and in this

way both of learning and teaching process will be vivid and interesting.

The Relationship between Teachers and Students

Maslow believes that the emotional communication between teacher and students is

the most basic type of behaviour for people. The relationship between teachers and students is

a special interpersonal relationship and this relationship is made through cognition and

emotional communication. The psychologists believed that with the formation of human

beings, they have the need to get other's care, to get other's warmth, love, sympathy, respect,

recognition from the people who are related to them. The effective education teaching must

take harmonious relationship between teachers and students as premise. Therefore the teacher

should have sincere emotion and express brief, understanding and unconditional care for the

students' psychosomatic health, they also should respect the students' emotion and appreciate

their advantages and soon. In this way, the relationship between teachers and students can be

harmonious and this kind of relationship can satisfy the students' desire for care. It will

promote the students to learn happily and actively. It will be helpful for the student's

imagination and creation. On the contrary, in the exam-oriented education, the teacher is the

incarnation of knowledge and the owner of scientific truth. The teacher teaches knowledge,

the students learn the knowledge, and the teacher is the absolute pundit without any doubt.

The students are object and passive learners. At present, this kind of typical relationship is

still prevailing in most of the schools throughout the world. In this kind of relationship, the

teacher's management is over-strict. They criticize, scold even beat the students, and the

students' dignity is ignored absolutely. It arouses hostility and malice to the teacher, and it

made many students suppress their real selfhood then form dual personality, at last will lead

the education to failure. Therefore the emotional relationship between the teachers and

students emphasized “the power of love” substantially. If we want to develop the emotional

relationship between teacher and students, here are some factors to be remember: (1)

Genuineness, that is to say, the teacher should not have any cheat, lie and deceit, and the

teacher and students should treat each other genuinely. Both of them should express their

emotion directly without any cheat and false. Only in this way can the students obtain real-

awareness and understanding to others. (2) Acceptance, the teacher and students should

accept each other’s emotion and concept. What the teacher said, the students can accept; what

the students did, the teacher can accept. “The people who have the acceptance character will

not complain about water for the water is wet, and will not be anxious for the stone for it is

hard.” This sentence told us that the meaning of acceptance. The teacher can accept the

students' fear and hesitation when they meet new problems, and should accept their

satisfaction when they achieve their aim. The teacher can also accept the student's glancing

apartness, and their wrong thoughts and his efforts to realize his aim.

Student-Centered Teaching

Student-centered teaching and be regarded as the core of education principle. It

was put forward by Rogers in 1953. Rogers put his psychological therapy into education and

created the "self-directed" learning. Rogers believes that for the students have learning

potential and the motivation to "self-actualization". Therefore the teacher's task is not to

teach the students how to learn, but to offer learning methods, and the students learn by

themselves. The teacher should not live as "teacher" but a "facilitator". Only by doing so, can

we temper the psychological intense atmosphere. It is good for the students to apply their

potential. In teaching, the teacher is not a director or a controller but only a consultant, which

is "student-centered".

In Roger's view, the "student-centered" in teaching is the same as "client-centered" in hospital. The teacher should get the student's trust as the doctor treat the client.

No matter how the students think, the teacher should treat their views with sympathy and establish emotional communication with them. To apply the theory to teaching approach, we should follow some basic steps: (1) Let the students decide the content and the motivation of learning by themselves. Learning can be the most lasting and profound learning. If the students don't have the motivation to learn, they will learn nothing. When the teacher considers the content of teaching, he should pay attention to the students' needs. The teacher can guide the students to arrange their learning activity and at the same time, the teacher can offer some useful and necessary conditions. When we will learn a lesson in intensive reading course, the teacher can ask for the students' opinion about the lesson. Let them preview the

lesson, in next class the teacher will discuss with the students about the content of the lesson,

they can communicate on how to learn and why to learn. The teacher can give the time to

learn by themselves with some materials. After their “self-directed” learning, the teacher can

check the result of learning and give some necessary advice. (2) The students master their

own learning approach the teacher’s important task is to teach the student how to get the

approach to obtain knowledge. The teacher should not regard the students’ brain as a

depository stuffed a lot of knowledge, but should regard it as a manufactory to make new

things. The nature of various subjects is different, and the content of the textbook is different,

too. The approach of learning has some similarities and its own character. Therefore the

students should not only master the general learning approach, but also a special learning

approach for a certain subject. (3) Let the students evaluate themselves Students’ self-

evaluation is the vital consideration to establish learning independence. It is intervention to

the students for the teacher uses mark or other primitives' method to educate their learning. It

is inadequate to measure the student's learning achievement by using standard test. Because

these tests just order the students to give right answers and remember what they have learned.

The closed-test only encourages the students to remember knowledge absolutely. In self-

evaluation students will not compare with other students but only with themselves. Using

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the students know how he learned and whether they have achieved their aims, and how to

make progress. The significance of using self-evaluation approach is to make the students

have their learning plan but also discuss with the students about the standard of evaluation; at

last help them master the self-evaluation approach.

THE APPLICATION OF HUMANISM TEACHING THEORY

Teaching Aim

"Self-actualization" is the education aim which is pursued by all of the humanism educators including Rogers. Rogers points out that what is the reason for people to learn, the only reason is to satisfy the self-actualization needs. "Self-actualization" is people's instinct need and it is the most important inner motility, even the power to promote the society. The aim of education is to promote "selfhood" to be realized. Therefore "self-actualization"becomes the basic education aim. The education ideal is to foster "self-actualizer." He emphasizes that in the world which we have been living in, the aim of education is to foster open-minded, dynamic and adjustable people who know how to learn, and continue to learn.

Rogers regarded the traditional relationship between teachers and students as "kettle and cup". The teacher is a kettle and the student is an empty cup. The teaching is to pour the water from the kettle into the cup. The student is passive absolutely. He thought if we want to change the present bad situation, we must establish the thought with the student as the subject, and respect the student, encourage them to think independently, at last make the

student be independent and volunteer to do things, and they will become more confident. To reflect the theory in concrete teaching aim, we should not take the students as "accepter" who is passive, negative, automatic and do not care for their

emotion. We can not only state pure knowledge or skill aim, and cannot consider to controlling the aim or achieve the aim either.

As Rogers says “a man is a running program, not a cluster if solid material, he is a group of great potential changing all the time, not a group of solid character.” On the basis of this concept, when we establish teaching aim, we should emphasize the integration of knowledge and ability.

Teaching Process

Rogers encourages the students to develop freely, it does not mean to encourage them to “learn freedom”, he believes that it is not given by outside, it is a character which can make people have the courage to try some unknown, uncertain field. He thinks that the teaching process should contract a safe psychological atmosphere where the student can set

out their inner potentiality.

In traditional education, we pay much more attention to teaching the knowledge

on the book, and the teacher pays more attention to teaching the textbook. They regard teaching well as the premise of learning well. In fact, if we want to make progress in teaching, we should not only research on how to teach well, but also should research on how the students can learn well. This is just one of the teaching processes which were emphasized by humanism teaching theory that is to develop freely. To learn well, we must give the

students chances to develop freely. Nowadays, the development of science and technology offers us a wider space, the students can make use of the modern computer skill,they can choose teacher from the network freely. This method offers the students a better choice to learn. They can choose any subjects to learn

if they are interested in and the ability of recognition and operation of advanced education concept and advanced science and technology will send the students to the front of subject knowledge.

The advantage of the outside factors will compensate the students' individual limitation. The modern education changes the process which the students realize things in the learning process. Traditional teaching process is made up of knowing the textbook, understand the textbook, strengthen the knowledge and using the knowledge and these moments are formed continuously in a stable procedure. The usage of science and technology makes cognition, understanding, strengthen and using into one, and makes the content of education colourful and interesting. It is good for the student to obtain a strong realization, and it also can lead the student to resolve the nature of things and the inner relation. This will be more helpful for the student to develop freely. During the process of teaching, the teacher can offer the students various learning

resources, such as useful websites on the internet. This will be helpful for learning and in this

way both of learning and teaching process will be vivid and interesting.

The Relationship between Teachers and Students

Maslow believes that the emotional communication between teacher and students is the most basic type of behaviour for people. The relationship between teachers and students is a special interpersonal relationship and this relationship is made through cognition and emotional communication. The psychologists believed that with the formation of human beings, they have the need to get other's care, to get other's warmth, love, sympathy, respect, recognition from the people who are related to them. The effective education teaching must

take harmonious relationship between teachers and students as premise. Therefore the teacher should have sincere emotion and express brief, understanding and unconditional care for the students' psychosomatic health, they also should respect the students' emotion and appreciate their advantages and soon. In this way, the relationship between teachers and students can be

harmonious and this kind of relationship can satisfy the students' desire for care. It will promote the students to learn happily and actively. It will be helpful for the student's imagination and creation. On the contrary, in the exam-oriented education, the teacher is the incarnation of knowledge and the owner of scientific truth. The teacher teaches knowledge,

the students learn the knowledge, and the teacher is the absolute pundit without any doubt.

The students are object and passive learners. At present, this kind of typical relationship is still prevailing in most of the schools throughout the world. In this kind of relationship, the teacher's management is over-strict. They criticize, scold even beat the students, and the students' dignity is ignored absolutely. It arouses hostility and malice to the teacher, and it made many students suppress their real selfhood then form dual personality, at last will lead

the education to failure. Therefore the emotional relationship between the teachers and students emphasized "the power of love" substantially. If we want to develop the emotional relationship between teacher and students, here are some factors to be remember:

(1)

Genuineness, that is to say, the teacher should not have any cheat, lie and deceit, and the teacher and students should treat each other genuinely. Both of

them should express their emotion directly without any cheat and false. Only in this way can the students obtain real- awareness and understanding to others.

(2) Acceptance, the teacher and students should accept each other's emotion and concept. What the teacher said, the students can accept; what the students did, the teacher can accept. "The people who have the acceptance character will not complain about water for the water is wet, and will not be anxious for the stone for it is hard." This sentence told us that the meaning of acceptance. The teacher can accept the students' fear and hesitation when they meet new problems, and should accept their satisfaction when they achieve their aim. The teacher can also accept the student's glancing apartness, and their wrong thoughts and his efforts to realize his aim.

Student-Centered Teaching

Student-centered teaching and be regarded as the core of education principle. It was put forward by Rogers in 1953. Rogers put his psychological therapy into education and created the "self-directed" learning. Rogers believes that for the students have learning potential and the motivation to "self-actualization". Therefore the teacher's task is not to teach the students how to learn, but to offer learning methods, and the students learn by themselves. The teacher should not live as "teacher" but a "facilitator". Only by doing so, can we temper the psychological intense atmosphere. It is good for the students to apply their potential. In teaching, the teacher is not a director or a controller but only a consultant, which is "student-centered".

In Roger's view, the "student-centered" in teaching is the same as "client centered" in hospital. The teacher should get the student's trust as thedoctor treat the client.

No matter how the students think, the teacher should treat their views with sympathy and establish emotional communication with them. To apply the theory to teaching approach, we should follow some basic steps: (1) Let the students decide the content and the motivation of learning by themselves. Learning can be the most lasting and profound learning. If the

students don't have the motivation to learn, they will learn nothing. When the teacher considers the content of teaching, he should pay attention to the students' needs. The teacher can guide the students to arrange their learning activity and at the same time, the teacher can offer some useful and necessary conditions. When we will learn a lesson in intensive reading

course, the teacher can ask for the students' opinion about the lesson. Let them preview the lesson, in next class the teacher will discuss with the students about the content of the lesson,

they can communicate on how to learn and why to learn. The teacher can give the time to learn by themselves with some materials. After their "self-directed" learning, the teacher can check the result of learning and give some necessary advice.

(2) The students master their

own learning approach the teacher's important task is to teach the student how to get the approach to obtain knowledge. The teacher should not regard the students' brain as a depository stuffed a lot of knowledge, but should regard

it as a manufactory to make new things. The nature of various subjects is different, and the content of the textbook is different,

too. The approach of learning has some similarities and its own character. Therefore the students should not only master the general learning approach, but also a special learning approach for a certain subject.

(3) Let the students evaluate themselves Students' self-

evaluation is the vital consideration to establish learning independence. It is intervention to the students for the teacher uses mark or other primitives' method to educate their learning. It is inadequate to measure the student's learning achievement by using standard test. Because these tests just order the students to give right answers and remember what they have learned.

The closed-test only encourages the students to remember knowledge absolutely. In self- evaluation students will not compare with other students but only with themselves. Using marks to measure the student's learning achievements will make the higher mark students feel proud and the lower mark students feel shameful. That we use marks to evaluate students will make them learn for marks but not to satisfy their need. Using self-evaluation can make

the students know how he learned and whether they have achieved their aims, and how to make progress. The significance of using self-evaluation approach is to make the students have their learning plan but also discuss with the students about the standard of evaluation; at last help them master the self-evaluation approach.

Chapter 6.

Learner And Learning

Affective factors Affecting Learning

Factors influencing learning: Learning is a comprehensive process. This process is influenced by a variety of factors related to the learner, the teacher, the process and the content. Thorough knowledge of these factors will prove very helpful for the teachers and parents in understanding and guiding their children's learning.

There are mainly three factors that influence learning these are-

Personal factors

Environmental Factors

Teacher related factors and

Content Related factors

Process related factors

Personal Factors

Learner related factors:

The learner is the key figure in any learning task. How he will learn or what he will achieve through a particular learning act depends upon his own characteristics and the way of learning, Such things associated with him can be described as follows-

Learner physical and mental health: Learning is greatly affected by the learner physical and mental health maintained by him particularly at the time of learning. A healthy child learns better, similarly, a tense emotionally and mentally disturbed child does not show much progress in learning.

The basic potential of the learner: The results achieved by the learners through a process of learning depends upon his basic potential like-

Learner innate abilities and capacity of learning a things

Learner basic potential in terms of general intelligence and specific knowledge, understanding and skills related to the particular learning areas.

Learner basic interest, aptitude and attitudes related to a learning particular area.

Level of aspiration and achievement motivation: Level of aspiration refers to the personal goal of an individual which he expects to achieve. Keeping in view his abilities, one has to maintain the level of his aspiration and achievement to a reasonable level.

The goal of life: Learning depends on the goal. Goals and philosophy of one's life determine his way of looking towards the things, his inclination towards the learning in a particular area, patience maintained for continuing his learning despite the heavy goals.

Readiness and willpower: no one can make a learner if he or she is not ready to learn. On the contrary, if the learner has the will to learn a thing the automatically he will find the way to its effective learning.

Environmental Factors

1. Teacher related factors

The teacher is the most prominent factor in the teaching-learning process and is responsible for the children's learning activities

Knowledge of the subject: Proper knowledge of the subject is very important. Teachers knowledge, experience and abilities greatly influence learner learning

Teacher behaviour: A teacher behaviour is greatly influencing the learning of the students directly. A teacher should inherit all the essential qualities of a good teacher are sympathy, cooperation behaviour, objectivity, sweet temper, polite etc are all such traits that should always reflect in the teacher's behaviour.

Personality: Good and appealing personality is the basis of successful and effective teaching. He must create an impression on his students by keeping an appropriate balance between his deeds and action.

Class management and control: Optimum learning is not possible without proper class management and control. So, a teacher should know the art of managing and controlling the class.

2. Content related factors

The following are the content-related factors:-

Effect of previous experience: New learning depends upon old learning. Learning is always influenced by previous experiences. Previous learning in the field makes the task familiar and therefore, more approachable.

Meaningfulness of material: The result of experimental studies have clearly indicated that meaningful material can be easily memorized as compared to

meaningless material. Meaningful means that the material conveys some sense and has some associations and previous experience with the learner.

Difficult of material: This is another important factor in learning when there are more than 20% difficult words in a lesson the task of reading becomes very difficult for the reader.

Multi-Sensory Approach: Number of illustrations, figures, pictures, tables projecting the abstract unfamiliar and significant aspects of the lesson facilitates learning.

Nature of content: The nature of content is a very important factor that influences learning. The nature of the content should be simple to complex

Selection of contents: The contents should be selected according to children need, interests and abilities that influence greatly the children learning.

Organization of contents: The contents should be organized in such a way that they can easily accessible and enjoyable for children learning and it should be according to children age and class.

3. Process related factors

The methodology adopted for teaching-learning experiences

Linking new learning with the previous learning

Co-relating the learning with subjects such as Social science-history, geography, civics. Biology-Botany, Zoology, Microbiology

Utilization of maximum number of sense

Provision of drill work. Eg. Revision and practice

Provision of proper reinforcement and feedback. Ex- Smiling, excellent, answer is correct.

Selection of suitable teaching-learning method. Ex- Discussion method, heuristic method, laboratory method etc.

Teaching-Learning environment and resource

Socio-emotional climate available in the institution in the shape of teaching-learning relationship, pupil-pupil relationship, staff-staff relationship

The availability of appropriate learning materials and facilities in terms of teaching-learning aids, textbooks, library and laboratory facilities etc

The proper conducive **environment and learning situation-**

Proper seating arrangement

Calm and peaceful environment

Management and control of the factors leading to distraction

Co-operative and competitive

The congenial environment at home

Provision of proper change reset and recreation

Provision of opportunity for creativity and self–impression.

What is anxiety?

Anxiety is a feeling of fear, dread, and uneasiness. It might cause you to sweat, feel restless and tense, and have a rapid heartbeat. It can be a normal reaction to stress.

For example, you might feel anxious when faced with a difficult problem at work, before taking a test, or before making an important decision. It can help you to cope. The anxiety may give you a boost of energy or help you focus. But for people with anxiety disorders, the fear is not temporary and can be overwhelming.

What are anxiety disorders?

Anxiety disorders are conditions in which you have anxiety that does not go away and can get worse over time. The symptoms can interfere with daily activities such as job performance, schoolwork, and relationships.

What are the types of anxiety disorders?

There are several types of anxiety disorders, including:

Generalized anxiety disorder (GAD). People with GAD worry about ordinary issues such as health, money, work, and family. But their worries are excessive, and they have them almost every day for at least 6 months.

Panic disorder. People with panic disorder have panic attacks. These are sudden, repeated periods of intense fear when there is no danger. The attacks come on quickly and can last several minutes or more.

Phobias. People with phobias have an intense fear of something that poses little or no actual danger. Their fear may be about spiders, flying, going to crowded places, or being in social situations (known as social anxiety).

What causes anxiety disorders?

The cause of anxiety is unknown. Factors such as genetics, brain biology and chemistry, stress, and your environment may play a role.

Who is at risk for anxiety disorders?

The risk factors for the different types of anxiety disorders can vary. For example, GAD and phobias are more common in women, but social anxiety affects men and women equally. There are some general risk factors for all types of anxiety disorders, including:

Certain personality traits, such as being shy or withdrawn when you are in new situations or meeting new people

Traumatic events in early childhood or adulthood

Family history of anxiety or other mental disorders

Some physical health conditions, such as thyroid problems or arrhythmia

What are the symptoms of anxiety disorders?

The different types of anxiety disorders can have different symptoms. But they all have a combination of:

Anxious thoughts or beliefs that are hard to control. They make you feel restless and tense and interfere with your daily life. They do not go away and can get worse over time.

Physical symptoms, such as a pounding or rapid heartbeat, unexplained aches and pains, dizziness, and shortness of breath

Changes in behavior, such as avoiding everyday activities you used to do

Using caffeine, other substances, and certain medicines can make your symptoms worse.

How are anxiety disorders diagnosed?

To diagnose anxiety disorders, your health care provider will ask about your symptoms and medical history. You may also have a physical exam and lab tests to make sure that a different health problem is not the cause of your symptoms.

If you don't have another health problem, you will get a psychological evaluation. Your provider may do it, or you may be referred to a mental health professional to get one.

What are the treatments for anxiety disorders?

The main treatments for anxiety disorders are psychotherapy (talk therapy), medicines, or both:

Cognitive behavioral therapy (CBT) is a type of psychotherapy that is often used to treat anxiety disorders. CBT teaches you different ways of thinking and behaving. It can help you change how you react to the things that cause you to feel fear and anxiety. It may include exposure therapy. This focuses on having you confront your fears so that you will be able to do the things that you had been avoiding.

Medicines to treat anxiety disorders include anti-anxiety medicines and certain antidepressants. Some types of medicines may work better for specific types of anxiety disorders. You should work closely with your health care provider to identify which medicine is best for you. You may need to try more than one medicine before you can find the right one.

Self-esteem

Self-esteem is your overall opinion of yourself — how you feel about your abilities and limitations. When you have healthy self-esteem, you feel good about yourself and see yourself as deserving the respect of others. When you have low self-esteem,

you put little value on your opinions and ideas. You might constantly worry that you aren't good enough.

Here's how to tell if your self-esteem needs a boost and why it's important to develop a healthy sense of your own worth.

Factors that shape and influence self-esteem

Self-esteem begins to form in early childhood. Factors that can influence self-esteem include:

Your thoughts and perceptions

How other people react to you

Experiences at home, school, work and in the community

Illness, disability or injury

Age

Role and status in society

Media messages

Relationships with those close to you — parents, siblings, peers, teachers and other important contacts — are important to your self-esteem. Many beliefs you hold about yourself today reflect messages you've received from these people over time.

If your relationships are strong and you receive generally positive feedback, you're more likely to see yourself as worthwhile and have healthier self-esteem. If you receive mostly negative feedback and are often criticized, teased or devalued by others, you're more likely to struggle with poor self-esteem.

But past experiences and relationships don't have to be your destiny. Your own thoughts have perhaps the biggest impact on self-esteem — and these thoughts are within your control. If you tend to focus on your weaknesses or flaws, working on changing that can help you develop a more balanced, accurate view of yourself.

Range of self-esteem

Self-esteem tends to fluctuate over time, depending on your circumstances. It's normal to go through times when you feel down about yourself and times when you feel good about yourself. Generally, however, self-esteem stays in a range that reflects how you feel about yourself overall, and increases slightly with age.

Consider how to recognize the extremes of your self-esteem:

Low self-esteem. When you have low or negative self-esteem, you put little value on your opinions and ideas. You focus on your perceived weaknesses and faults and give scant credit to your skills and assets. You believe that others are more capable or successful.

You might have difficulty accepting positive feedback. You might fear failure, which can hold you back from succeeding at work or school.

Healthy self-esteem. When you have healthy self-esteem it means you have a balanced, accurate view of yourself. For instance, you have a good opinion of your abilities but recognize your flaws.

When self-esteem is healthy and grounded in reality, it's hard to have too much of it. Boasting and feeling superior to others around you isn't a sign of too much self-esteem. It's more likely evidence of insecurity and low self-esteem.

Benefits of healthy self-esteem

When you value yourself and have good self-esteem, you feel secure and worthwhile. You have generally positive relationships with others and feel confident about your abilities. You're also open to learning and feedback, which can help you acquire and master new skills.

With healthy self-esteem you're:

Assertive in expressing your needs and opinions

Confident in your ability to make decisions

Able to form secure and honest relationships — and less likely to stay in unhealthy ones

Realistic in your expectations and less likely to be overcritical of yourself and others

More resilient and better able to weather stress and setbacks

Self-esteem affects virtually every facet of your life. Maintaining a healthy, realistic view of yourself isn't about blowing your own horn. It's about learning to like and respect yourself — faults and all.

What is an Introvert?

An introvert can be defined as being someone who gets their energy from being in their own company, having time to ‘recharge’ on their own. Someone who is introverted may appear to be withdrawn and shy, although this may not always be the case (Carrigan, 1960).

Introverts may also prefer taking part in less stimulating activities and get pleasure from reading, writing, or meditating.

Introverts may typically prefer to concentrate on a single activity, analyze situations carefully and take time to think more before they speak.

Signs You Might Be an Introvert

You have a small group of close friends.

Thoughtful

Energized by being alone

Enjoy solitude

Tends to keep emotions private

Quiet and reserved in large groups or around unfamiliar people

Feel drained by people, and need privacy

Process their thoughts in their head rather than talk them out

More sociable and gregarious around people they know well

Learns well through observation

What is an Extrovert?

An extrovert is a person with qualities of a personality type known as extroversion, which means that they get their energy from being around other people. Someone who is extroverted may appear as very talkative and may be popular among peers (Carrigan, 1960).

Extroverts may wish to seek out as much social interaction as possible because this is how they feel more energized. According to estimates, extroverts outnumber introverts by about three to one (Cain, 2012).

Remember that extroversion isn't an all-or-nothing trait; it's actually a continuum and some people might be very extroverted while others are less so.

Signs You Might Be an Extrovert

Enjoying social settings

Seek attention

Energized by being with others

Are friends with many people

Sociable

Outgoing

Enjoy group work

Prefer talking over writing

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What is Motivation in Education?

Motivation is defined as our enthusiasm for doing something. It is the ‘why’ behind every action. Motivation is the reason – or reasons – for acting or behaving in a particular way. It helps us to set a goal and reach it. The term ‘motivation’ is derived from the Latin verb ‘movere’, so quite literally, it’s what keeps us moving.

In education, motivation helps children and young people to focus their attention on a key goal or outcome. In doing so, they are unfazed by possible distractions, and are therefore able to maintain their attention during longer periods of time. Students who are motivated display **goal-orientated behaviours**. They take initiative, show resilience, harness their curiosity, and care for and respect their work. They are equipped to orchestrate their own learning journey.

Discovering ways to increase motivation in the classroom is vital, as it enables us to:

Change behaviour.

Develop competencies.

Spark curiosity.

Set goals.

Develop interests.

Plan for the future.

Blossom talents.

Increase engagement.

Getting students engaged in a lesson or unit of work is something a talented teacher can achieve, but motivating them to become better learners, who strive to achieve their true potential, can be incredibly challenging, especially as our experience of motivation is often unconscious. Unmotivated students are often disengaged or disaffected, which can lead to challenging behaviour.

How to Motivate Children

It can be challenging to motivate children, but we have collated seven tried-and-tested strategies for you to try in the classroom.

Have a Growth Mindset

Carol Dweck's studies on the benefits of adopting a growth mindset are well documented. Dweck sees education as a constant learning curve, rather than a linear process. Students with a growth mindset continually develop and refine their thinking. They are not crushed by assessment scores; instead, they turn challenges into experiences, and use them as fuel for continual growth and development.

In contrast, students with a fixed mindset are fixated in the present. They can't accept failure, they require instant recognition, and often crumble in the face of adversity.

In order to develop a growth mindset in children, praise them for the process, rather than their intelligence or talents, as this can make them vulnerable. Acknowledge their effort, focus, or hard work, as these are the qualities which will make students resilient. This is especially important given that there is evidence that implicitly finds short-term effort as an important determinant of student performance in high-stakes exams (Metcalfe et al, 2011).

What are the Different Types of Motivation in Education?

Motivation in the early years is especially crucial, as this is when we have the opportunity to mould children into confident, resilient, lifelong learners. From a young age, children learn about the world around them through curiosity. Many approaches to the early years, such as **The Curiosity Approach**, harness children's innate interest in their environment. However, as children get older, this eagerness to discover and learn is often not as strong. Instead, many look for external rewards as a mechanism to help them achieve their aims. These two drivers of behaviour are intrinsic and extrinsic motivation.

Intrinsic Motivation

Intrinsic motivation is a self-summoned willingness to learn. Those who are intrinsically motivated don't require sanctions or rewards to help steer their efforts. Very young children are often naturally intrinsically motivated, and are led by their innate curiosity. This form of motivation often encourages more efficient and successful learners in the classroom. There are many studies which suggest that children who are intrinsically motivated are better at learning. In fact, intrinsic motivation is often **shown** as one of the most powerful predictors of academic achievement.

Many students experience a decline in intrinsic motivation during adolescence. Keeping this thirst for learning alive in children can be a challenging task. It's not only the learning environments and universal provision available within schools that help to inspire intrinsic motivation – parenting, biology, age, gender, wellbeing, and peer relationships can also affect to what extent students feel engaged in their learning.

Extrinsic Motivation

Education providers often cultivate intrinsic motivation through extrinsic means. Vansteenkiste et al. (2006) define **extrinsic motivation** as the desire of people to participate in activities in order to gain something different from the task itself. Examples of extrinsic motivation include medals for the winners of a race, chocolate for good attendance, extra break time for positive behaviour, vouchers for reading for pleasure, and completing homework in order to avoid a detention.

It is possible to boost intrinsic motivation through extrinsic means. This may be particularly effective for students with particular needs, or disaffected learners, whose background, relationships, or previous experience of education has resulted in a lack of faith in the system. Cameron (2001) argues that external motives can promote children's willingness to learn, and that they are not harmful to students' intrinsic motivation.

However, once this process of extrinsically motivating through rewards becomes habitual, it can become challenging to disassociate success with praise and reward, as the individual's attitude becomes controlled by the stimulus alone. Some studies suggest that if there is no genuine desire that steers individuals to engage in the activity, then deep learning must be limited.

Professor Frédéric Guay, an expert in motivation at Laval University in Québec, states: “Rather than focusing on rewards, focus on the quality of relationship with the students. Students who find learning important, even if they don’t enjoy it, will bring about the same kind of positive outcomes as you see with those with high intrinsic motivation.” Guay suggests that educators should encourage children to **express their emotions**, and share their experiences towards learning. Their responses can be used to help teachers redefine their practice, and therefore improve the learning experience for all pupils.

What Is Memory?

Memory refers to the processes that are used to acquire, store, retain, and later retrieve information. There are three major processes involved in memory: encoding, storage, and retrieval.

Human memory involves the ability to both preserve and recover information people have learned or experienced. However, this is not a flawless process. Sometimes people forget or misremember things. Sometimes things are not properly encoded in memory in the first place.

Memory problems are often relatively minor annoyances like forgetting birthdays. However, they can also be a sign of serious diseases, like Alzheimer's and other kinds of dementia. These conditions affect a person's quality of life and ability to function.

This article discusses how memories are formed and why they are sometimes forgotten. It also covers the different types of memory and steps you can take to improve and protect your memory.

How Memories Are Formed

In order to form new memories, information must be changed into a usable form, which occurs through the process known as *encoding*. Once the information has been successfully encoded, it must be stored in memory for later use.

Researchers have long believed memories form due to changes in brain neurons. Today, experts believe that memories are created through the strengthening of existing connections or the growth of new connections between neurons. This is why reviewing and rehearsing information improves the ability to remember it. Every time it is practiced, it strengthens the connections between the synapses that store that memory.

Much of this stored memory lies outside of our awareness most of the time except when we actually need to use it. The *retrieval* process allows us to bring stored memories into conscious awareness.

How Long Do Memories Last?

Some memories are very brief, just seconds long, and allow people to take in sensory information about the world.

Short-term memories are a bit longer and last about 20 to 30 seconds. These memories mostly consist of the information people are currently focusing on and thinking about. Some memories are capable of enduring much longer, lasting days, weeks, months, or even decades. Most of these long-term memories lie outside of immediate awareness, but can be drawn into consciousness when needed.

Using Memory

To use the information that has been encoded into memory, it first has to be retrieved. There are many factors that can influence this process, including the type of information being used and the retrieval cues that are present.

Of course, this process is not always perfect. Have you ever felt like you had the answer to a question right at the tip of your tongue, but you couldn't quite remember it? This is an example of a perplexing memory retrieval problem known as lethologica or the tip-of-the-tongue phenomenon.

Types of Memory

While several different models of memory have been proposed, the stage model of memory is often used to explain the basic structure and function of memory. Initially proposed in 1968 by Richard Atkinson and Richard Shiffrin, this theory outlines three separate stages of memory: sensory memory, short-term memory, and long-term memory.[5]

Sensory Memory

Sensory memory is the earliest stage of memory. During this stage, sensory information from the environment is stored for a very brief period of time, generally for no longer than a half-second for visual information and 3 or 4 seconds for auditory information.

People only attend to certain aspects of this sensory memory. Attending to the sensory memory allows some of this information to pass into the next stage: short-term memory.

Short-Term Memory

Short-term memory, also known as active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. Paying attention to sensory memories generates information in short-term memory.

While many of our short-term memories are quickly forgotten, attending to this information allows it to continue to the next stage: long-term memory. Most of the information stored in active memory will be kept for approximately 20 to 30 seconds.[6]

This capacity can be stretched somewhat by using memory strategies such as chunking, which involves grouping related information into smaller "chunks."[3]

The term "short-term memory" is often used interchangeably with "working memory," which refers to the processes that are used to temporarily store, organize, and manipulate information.

In a famous paper published in 1956, psychologist George Miller suggested that the capacity of short-term memory for storing a list of items was somewhere between five and nine.[4] Some memory researchers now believe that the true capacity of short-term memory is probably closer to the number four

Long-Term Memory

Long-term memory refers to the continuing storage of information. In Freudian psychology, long-term memory would be called the preconscious and unconscious. This information is largely outside of our awareness but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access.

How to Improve Memory

No matter how great your memory is, there are probably a few things you can do to make it even better. There are a number of useful strategies to deal with mild memory loss. These techniques include:[5]

Write it down: The act of writing with a pen and paper helps implant the memory into your brain—and can also serve as a reminder or reference later on.[9]

Attach meaning to it: You can remember something more easily if you attach meaning to it. For instance, if you associate a person you just meet with someone you already know, you may be able to remember their name easier.

Repeat it: Repetition helps the memory become encoded beyond your short-term memory.

Group it: Information that is categorized becomes easier to remember and recall.

Test yourself: While it may seem like studying and rehearsing information is the best way to ensure that you will remember it, researchers have found that being tested on information is actually one of the best ways to improve recall.[2]

Take a mental picture: Systematically trying to make a mental note of things you often forget (such as where you left your car keys) can help you remember things better.

Get enough rest: Research has also found that sleep plays a critical role in learning and the formation of new memories.

Use memorization techniques: Rehearsing information, employing mnemonics, and other memorization strategies can help combat minor memory problems.

How to Protect Your Memory

While Alzheimer's disease and other age-related memory problems affect many older adults, the loss of memory during later adulthood might not inevitable.[10] Certain abilities do tend to decline with age, but researchers have found that individuals in their 70s often perform just as well on many cognitive tests as do those in their 20s.

By the time people reach their 80s, it is common to experience some decline in cognitive function. Some types of memory even increase with age.[11]

In order to help protect your brain as you age include, try some of the following strategies:

Avoid stress: Research has found that stress can have detrimental effects on areas of the brain associated with memory, including the hippocampus.[10]

Avoid drugs, alcohol, and other neurotoxins: Drug use and excessive alcohol consumption have been linked to synaptic deterioration.[12] Exposure to dangerous chemicals such as heavy metals and pesticides can also have detrimental effects on the brain.

Get enough exercise: Regular physical activity helps improve oxygenation of the brain, which is vital for synaptic formation and growth.[13]

Stimulate your brain: You've probably heard the old adage "Use it or lose it." Well, it turns out there's a lot of truth to that when it comes to memory. Researchers have found that people who have more mentally stimulating jobs are less likely to develop dementia.[14]

Maintain a sense of self-efficacy: According to experts, having a strong sense of self-efficacy has been associated with maintaining good memory abilities during old age. Self-efficacy refers to the sense of control that people have over their own lives and destiny. This strong sense of self-efficacy has also been linked to lowered stress levels.

Good study habits to develop

1. Find a good place to study.

Finding a good location to study is one of the most important elements of studying well. Look for a quiet place with minimal distractions—someplace where you'll be able to focus, and won't be interrupted by loud sounds or people who constantly want your attention.

A school or public library, a coffee shop, or a quiet corner of your house can all be good places to start.

2. Minimize distractions.

Picking a good location to study can be the first step in keeping yourself focused on your work. But there are many types of distractions that can reach you no matter where you choose to work. Here are some tips on minimizing these distractions:

Turn off your wifi: If you're working on a computer and you don't need your wifi, try turning it off. This can keep you from inadvertently wandering into the distracting parts of the internet.

Be mindful of your phone: It's no secret that our smartphones can be hugely distracting. Turning off your notifications, keeping your phone out of sight in your bag, or giving it to a friend to keep you from checking it too often can help you stay focused. You might also try a focus app, like Forest or Focus To-Do, that can block distracting apps and set timers for study sessions.

Study with a friend: Sometimes studying with a friend or two, whether or not you're working on the same material, can help keep you accountable and focused. Make sure you each are on the same page about studying and keeping one another distraction-free, at least until it's time to take a break.

3. Take breaks.

Taking intentional breaks has been linked to better retention, increased attention, and boosts in energy. Research shows that working for around 50 minutes, then giving yourself a 15- to 20-minute break, can lead to optimum productivity [3]. Here are a few ways you can give yourself a break:

Take a short walk

Listen to a mood-boosting song

Relax with a friend

Stretch

Meditate

Zone out and daydream

Have a snack

Take a shower

Clean your desk or room

Not all breaks are created equal. Checking your phone or social media as a study break has actually been linked to a decrease in performance [4].

4. Space out your studying.

Cramming can still help you get a good grade on a test, but studies show that you're much more likely to forget that information as soon as the test is over. Really holding onto the material you learned (and making exam seasons less stressful) requires consistent and well-spaced study sessions.

Instead of saving your studying for before a test, briefly review material you learned once a week. If you are studying for an exam, space out your studying up to several

weeks (or even months, depending on the test) leading up to the exam day. This can help you retain the information long term.

5. Set study goals for each session.

Set study goals for each session of studying you have. These can be time-based or content-based. For example, you might aim to study for two hours, or review three chapters of your textbook—or both.

Don't be too harsh on yourself if you didn't get through as much as you had planned; sometimes studying can take longer than expected. Keep taking well-spaced breaks, and schedule another study session.

6. Reward yourself.

Rewarding yourself with treats—"bribing" yourself—has been linked to better self-control, and can be helpful in forming good habits [5]. Telling yourself you'll get a small reward if you finish the section you wanted to get through, or perhaps a larger reward if you have a productive day of studying, can be good motivation to get to your goal.

Small rewards can be a candy bar, a hot drink from your favorite coffee shop, a quick game of your choice, or a short episode of a TV show. Bigger rewards for a long day of studying or getting done with an exam can include getting your favorite meal, spending some time relaxing with friends, or making time for your favorite activity.

7. Study with a group.

There are several benefits to forming a study group. Group members can help one another work through difficult problems, provide encouragement, hold each other accountable to studying goals, provide different perspectives, and make studying

more enjoyable. Even explaining difficult concepts to others can help with comprehension and retention.

If you have a group study session, set a goal the group will work towards and take periodic breaks as you would studying by yourself.

8. Take practice tests.

Tests and practice tests have been long seen as useful tools to help students learn and retain information. Besides revealing gaps in knowledge and reducing exam anxiety, being tested makes us retrieve information from memory—a powerful, study-backed way of holding onto information we've learned [6].

Don't have a practice exam? There are several ways you can "test" yourself and gain the same benefits. Try the following methods:

Create flashcards

Write your own questions

Search for practice questions online

Have a friend quiz you

9. Use your own words.

Expressing an idea in your own words increases your understanding of a subject and helps your brain hang on to information. After you read a section of text, summarize important points by paraphrasing.

10. Ask for help.

You might find yourself stuck on a problem or unable to understand the explanation in a textbook. Somebody who is able to walk through the issue with you might provide the fresh explanation you need. Approach your teacher or professor,

teaching assistant, friend, or study group member for new ways to understand what you're stuck on. Feel like you can benefit from being coached through a subject? Consider looking for a tutor.

11. Take care of yourself.

At the end of the day, your brain is an organ in your body—take care of it by taking care of yourself. Get regular exercise, eat well, don't overdrink, get good sleep, and take care of your mental wellbeing.

Sleep: Studies have linked sleep deprivation to decreased cognitive function, including reduced attention spans and doing worse on tests [7]. Everybody's sleep needs are different, but people typically need between seven and eight-and-a-half hours of sleep a night. Plus, getting more sleep can make you happier and benefit your social life.

Food: Try to incorporate more fruits, vegetables, plant sources of proteins, nuts, and unsaturated oils like olive oil into your diet, all of which have been linked to better cognitive performance

Exercise: Exercise brings oxygen to the part of your brain responsible for thought, encourages the development of new nerve cells, and boosts brain cell connections This makes for brains that are more neuroplastic and efficient—plus it brings a host of other health benefits, like lower blood pressure, reduced mental stress, and weight control.

Mental wellness: Mental health is important because it helps us deal with stress, improves our relationships with others, allows us to live more meaningfully, and be more productive in our work. Exercising, eating well, and getting good sleep can each boost our mental health. But there are other ways of fortifying mental strength,

such as connecting with others, practicing gratitude, meditating, and developing a sense of meaning in life

Chapter 7.

Instructional Strategies

Direct Discovery

Discovery learning is a technique of inquiry-based learning and is considered a constructivist based approach to education. It is also referred to as problem-based learning, experiential learning and 21st century learning. It is supported by the work of learning theorists and psychologists Jean Piaget, Jerome Bruner, and Seymour Papert.

Jerome Bruner is often credited with originating discovery learning in the 1960s, but his ideas are very similar to those of earlier writers such as John Dewey.[1] Bruner argues that "Practice in discovering for oneself teaches one to acquire information in a way that makes that information more readily viable in problem solving".[2] This philosophy later became the discovery learning movement of the 1960s. The mantra of this philosophical movement suggests that people should "learn by doing".

The label of discovery learning can cover a variety of instructional techniques. According to a meta-analytic review conducted by Alfieri, Brooks, Aldrich, and Tenenbaum (2011),[3] a discovery learning task can range from implicit pattern detection, to the elicitation of explanations and working through manuals to conducting simulations. Discovery learning can occur whenever the student is not provided with an exact answer but rather the materials in order to find the answer themselves.

Discovery learning takes place in problem solving situations where learners interact with their environment by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments, while drawing on their own experience and prior knowledge.

Characteristics[edit]

Discovery-based learning is typically characterized by having minimal teacher guidance, fewer teacher explanations, solving problems with multiple solutions, use of hand-on materials, minimal repetition and memorization.[4]

There are multiple essential components that are required for successful discovery-based learning[5] which include the following:

Teacher guidance where the emphasis is on building upon students' reasoning and connecting to their experiences

Classroom culture where there is a shared sense of purpose between teacher and students, where open-mindedness and dialogue are encouraged

Students are encouraged to ask questions, inquire through exploration and collaborate with teacher and peers

Teacher's role[edit]

It has been suggested that effective teaching using discovery techniques requires teachers to do one or more of the following: 1) Provide guided tasks leveraging a variety of instructional techniques 2) Students should explain their own ideas and teachers should assess the accuracy of the idea and provide feedback 3) Teachers should provide examples of how to complete the tasks.[3]

A critical success factor to discovery learning is that it must be teacher assisted. Bruner (1961), one of the early pioneers of discovery learning, cautioned that discovery could not happen without some basic knowledge. Mayer (2004) argued that pure unassisted discovery should be eliminated due to the lack of evidence that it improves learning outcomes. Discovery learning can also result in students becoming confused and frustrated.[6]

The teachers' role in discovery learning is therefore critical to the success of learning outcomes. Students must build foundational knowledge through examples, practice and feedback. This can provide a foundation for students to integrate additional information and build upon problem solving and critical thinking skills.[*citation needed*]

Benefits[edit]

Early research demonstrated that directed discovery had positive effects on retention of information at six weeks after instruction versus that of traditional direct instruction.[7]

It is believed that the outcome of discovery based learning is the development of inquiring minds and the potential for life-long learning.[5]

Discovery learning promotes student exploration and collaboration with teachers and peers to solve problems. Children are also able to direct their own inquiry and be actively involved in the learning process which helps with student motivation.[8]

Assisted vs. unassisted discovery[edit]

A debate in the instructional community now questions the effectiveness of this model of instruction.[9] The debate dates back to the 1950s when researchers first began to compare the results of discovery learning to other forms of instruction.[3] In support of the fundamental concept of discovery learning, Bruner (1961) suggested that students are more likely to remember concepts if they discover them on their own as opposed to those that are taught directly.

In pure discovery learning, the learner is required to discover new content through conducting investigations or carrying out procedures while receiving little, if any, assistance. "For example, a science teacher might provide students with a brief demonstration of how perceptions of color change depending on the intensity of the light source and then ask them to design their own experiment to further examine this relationship".[*attribution needed*][10] In this example the student is left to discover the content on his/her own. Because students are left to self-discovery of topics, researchers worry that learning taking place may have errors, misconceptions or be confusing or frustrating to the learner.

Research shows that cognitive demands required for discovery in young children may hinder learning as they have limited amounts of existing knowledge to integrate additional information. Bruner also cautioned that such discovery could not be made prior to or without at least some base of knowledge in the topic. Students who are presented with problems without foundational knowledge may not have the ability to work though solutions. The meta-analyses conducted by Alfieri and colleagues reconfirmed such findings.

Mayer (2004) argues that unassisted discovery learning tasks do not help learners discover problem-solving rules, conservation strategies, or programming concepts.

He does acknowledge, however that while under some circumstances constructivist-based approaches may be beneficial, pure discovery learning lacks structure in nature and hence will not be beneficial for the learner. Mayer also points out that interest in discovery learning has waxed and waned since the 1960s. He argues that in each case the empirical literature has shown that the use of pure discovery methods is not suggested, yet time and time again researchers have renamed their instructional methods only to be discredited again, to rename their movement again.

Alternatively, direct ‘instruction where working examples, scaffolding techniques, explicit explanation and feedback are beneficial to learning (Alfieri, 2011). In addition, time spent practising newly learned concepts improves problem solving skills (Pas and Van Gog, 2006).

There appears to be benefits to both direct instruction and assisted discovery. Perhaps finding the balance between the two instructional styles will lead to the best learning outcomes for students.

Direct Instruction (**DI**) is a term for the explicit teaching of a skill-set using lectures or demonstrations of the material to students. A particular subset of **direct instruction**, denoted by capitalization as **Direct Instruction**, refers to a specific example of the approach developed by Siegfried Engelmann and Wesley C. Becker. DI teaches by explicit instruction, in contrast to exploratory models such as inquiry-based learning. DI includes tutorials, participatory laboratory classes, discussion, recitation, seminars, workshops, observation, active learning, practica, or internships. Model includes "I do" (instructor), "We do" (instructor and student/s), "You do" (student practices on their own with instructor monitoring).

DI relies on a systematic and scripted curriculum, delivered by highly trained instructors. On the premise that all students can learn and all teachers successfully teach if given effective training in specific techniques, teachers may be evaluated based on measurable student learning.

In some special education programs, direct instruction is used in resource rooms, when teachers assist with homework completion and academic remediation

History

DISTAR was a specific direct instruction model developed by Siegfried Engelmann and Wesley C. Becker. Engelmann and Becker sought to identify teaching methods that would accelerate the progress of historically disadvantaged elementary school students.

Direct Instruction was first formally implemented at a preschool program for children from impoverished backgrounds at the University of Illinois (mid-1960s). The team implementing DI consisted of Siegfried Engelmann, Carl Bereiter, and Jean Osborn. The program incorporated short instructional periods, usually 20 to 30 minutes a day. The instructional periods focused on language, reading, and math. The children showed vast improvement which led to further development of the approach used. When further developing DI, they applied the same principles to create a formal instructional program that included language, reading, and math. The formal program was termed DISTAR, for Direct Instruction System for Teaching Arithmetic and Reading. In the late 1960s, Project Follow Through included DI as one of the programs to compare the outcomes of over 20 different educational interventions in high-poverty communities. The study was a large government-funded study that was implemented over a multiyear period. DI was implemented in 19 different sites which ranged in demographic and geographic

characteristics. The results indicated that DI was the only intervention that had significantly positive impacts on all outcomes that were measured.

Direct Instruction has been effectively delivered through peers to students with learning disabilities.

Peer delivery offers teachers new ways to use the curriculumThe approach has also been examined as a model to assist students in a resource room with homework completion, bolster executive functioning skills and improve teacher efficiency

Effectiveness

Features that make Direct Instruction effective

Only 10% of material is new while the remaining 90% of material is a review of previously taught content.

Students are grouped based on their skill levels that is determined by assessments administered before commencing the Direct Instruction program.

Emphasis on student's pace by either slowing down, reteaching or accelerating through easily understood material.

External validity of Direct Instruction has been tested and the program is research-based.

Debates about the efficacy of DI have raged since before the final results of Project Follow Through were published; however, there is substantial empirical research supporting its effectiveness. A meta-analysis published by Adams & Engelmann (1996), a chief architect of the DI program, finds a "mean effect size average per study...(as) more than .75, which confirms that the overall effect is substantial."

In some special education programs, it is used in a resource room with small groups of students. Some research has shown benefit with this model.

Direct Instruction is used with students from every population segment (with regard to poverty, culture, and race). In Project Follow Through, the DI model was ranked first in achievement for poor students, students who were not poor, urban students, rural students, African American students, Hispanic students, and Native American students. Today, many of the Bureau of Indian Affair's highest-performing schools use Direct Instruction materials. The Baltimore Curriculum Project has many schools with Free and Reduced Lunch Rates above 75% serving student populations that are more than 90% African American. These schools have shown strong achievement gains using Direct Instruction.

Meta-analysis of 85 single-subject design studies comparing direct instruction to other teaching strategies found the effects to be substantial for students with learning disabilities however, when qualified by IQ and reading levels strategy instruction (SI) had better effects for the high IQ group. For the low-IQ discrepancy groups, higher effect sizes were yielded for a Combined DI and SI Model when compared to all competing models. With the exception of handwriting, DI's effects were all above 0.8 (i.e., reading and mathematics

John Hattie's Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement (2009) summarizes the results of four meta-analyses that examined Direct Instruction. These analyses incorporated 304 studies of over 42,000 students. Across all of these students, the average effect size was 0.59 and was significantly larger than those of any other curriculum Hattie studied

Direct Instruction is recognized as one of two effective models of comprehensive school reform and, in many cases, can be integrated into a tiered model system[to

address students with developing problems The findings from Project Follow Through, conducted in a variety of selected communities throughout the United States, suggested that Direct Instruction is the most effective model for teaching academic skills and for affective outcomes (e.g., self-esteem) of children. Recent large-scale studies (1997–2003), such as the Baltimore Curriculum Project, show that it is possible to help schools that are in the lowest twenty percent with respect to academic achievement steadily improve until they are performing well above average. In some cases, school achievement improved from the 16th percentile to above the 90th percentile.

Criticism

Common criticisms: Teachers often express animosity towards the methods of Direct Instruction claiming that it limits both student creativity and teacher creativity in the classroom due to its strict, scripted procedures

Another common concern of those who disagree with Direct Instruction programs is their expense. Many argue that the current expense of implementing Direct Instruction programs is too high and unreasonable for low SES schools or school districts. Some prices of student workbooks are about $20 each while teacher workbook pricing can range from $180-$232 as seen on the McGraw Hill website, who is the main distributor of Direct Instruction materials (NIFDI, 2005).

Other criticisms: One three-year study of methods of teaching reading showed that highly scripted, teacher-directed methods of teaching reading were not as effective as traditional methods that allowed a more flexible approach Urban teachers in particular expressed great concern over the DI's lack of sensitivity to issues of poverty, culture, and race.

The former president of the National Science Teachers Association (NSTA), Anne Tweed, questioned whether direct instruction was the most effective science teaching strategy. In the December 15, 2004 NSTA Reports she concluded that "direct instruction alone cannot replace the in-depth experience with science concepts that inquiry-based strategies provide

Some critics also see DI as a betrayal of the humanistic, egalitarian foundations of adult public education, or as a "canned" or "teacher proof" curriculum deliverable via unskilled teachers

In Australia, where DI has been used in schools among several remote Indigenous Australians communities in Queensland, DI has been criticised for its high cost in return for at best modest improvements in literacy and numeracy levels, as well as its US-centric theme which is alien to indigenous Australian cultures

Chapter 8.

Classroom Management: Creating Learning

Management Concern in Classroom

CLASSROOM MANAGEMENT

Classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class. When classroom-management strategies are executed effectively, teachers minimize the behaviors that impede learning for both individual students and groups of students, while maximizing the behaviors that facilitate or enhance learning. Generally speaking, effective teachers tend to display strong classroom-management skills, while the hallmark of the inexperienced or less effective teacher is a disorderly classroom filled with students who are not working or paying attention.

While a limited or more traditional interpretation of effective classroom management may focus largely on "compliance"—rules and strategies that teachers may use to make sure students are sitting in their seats, following directions, listening attentively, etc.—a more encompassing or updated view of classroom management extends to everything that teachers may do to facilitate or improve student learning, which would include such factors as *behavior* (a positive attitude, happy facial expressions, encouraging statements, the respectful and fair treatment of students, etc.), *environment* (for example, a welcoming, well-lit classroom filled with intellectually stimulating learning materials that's organized to support specific learning activities), *expectations* (the quality of work that teachers expect students to produce, the ways that teachers expect students to behave toward other students, the agreements that teachers make with students), *materials* (the types of texts, equipment, and other learning resources that teachers use), or *activities* (the kinds of **learning experiences** that teachers design to **engage** student interests, passions, and intellectual curiosity). Given that

poorly designed lessons, uninteresting learning materials, or unclear expectations, for example, could contribute to greater student disinterest, increased behavioral problems, or unruly and disorganized classes, classroom management cannot be easily separated from all the other decisions that teachers make. In this more encompassing view of classroom management, good teaching and good classroom management become, to some degree, indistinguishable.

In practice, classroom-management techniques may appear deceptively simple, but successfully and seamlessly integrating them into the instruction of students typically requires a variety of sophisticated techniques and a significant amount of skill and experience. While the specific techniques used to manage classrooms and facilitate learning can vary widely in terminology, purpose, and execution, the following representative examples—taken from ***Teach Like a Champion: 49 Techniques that Put Students on the Path to College*** by Doug Lemov—will provide a brief introduction to a few basic classroom-management techniques (NOTE: While the general strategies described below are widely used by teachers, the specific terms in bold are not):

Entry Routine is a technique in which teachers establish a consistent, daily routine that begins as soon as students enter the classroom—preparing learning materials, making seat assignments, passing in homework, or doing a brief physical "warm-up" activity would all be examples of entry routines. This technique can avoid the disorder and squandered time that can characterize the beginning of a class period.

Do Now is a brief written activity that students are given as soon as they arrive in the classroom. This technique is intended to get students settled, focused, productive, and prepared for instruction as quickly as possible.

Tight Transitions is a technique in which teachers establish transition routines that students learn and can execute quickly and repeatedly without much direction from a teacher. For example, a teacher might say “reading time,” and students will know that they are expected to stop what they are working on, put away their materials, get their books, and begin reading silently on their own. This technique helps to maximize instructional time by reducing the disarray and delay that might accompany transitions between activities.

Seat Signals is a technique in which students use nonverbal signals while seated to indicate that they need something, such as a new pencil, a restroom break, or help with a problem. This technique establishes expectations for appropriate communication and helps to minimize disruptions during class.

Props is the act of publicly recognizing and praising students who have done something good, such as answering a difficult question or helping a peer. Props is done by the entire class and is typically a short movement or spoken phrase. The technique is intended to establish a group culture in which learning accomplishments and positive actions are socially valued and rewarded.

Nonverbal Intervention is when teachers establish eye contact or make gestures that let students know they are off-task, not paying attention, or misbehaving. The technique helps teachers efficiently and silently manage student behavior without disrupting a lesson.

Positive Group Correction is a quick, affirming verbal reminder that lets a group of students know what they should be doing. Related techniques are **Anonymous Individual Correction**, a verbal reminder that is directed at an anonymous student; **Private Individual Correction**, a reminder given to an individual student as discretely as possible; and **Lightning-Quick Public Correction**, a quick,

positive reminder that tells an individual student what to do instead of what not to do.

Do It Again is used when students do not perform a basic task correctly, and the teacher asks them to do it again the correct way. This technique establishes and reinforces consistent expectations for quality work.

Four components of classroom management

Implementing the top four components of classroom management from the start will set you and your students up for success all year long.

They are

Classroom design — be intentional about how you set up your desk, your students' desks, bulletin board displays, devices and other aspects of your classroom. Thoughtful classroom design can help create a safe and welcoming learning environment.

Rules/discipline — to create a safe and caring school community, develop classroom rules your students understand and — hopefully — respect. While it may not be fun, be sure to communicate that breaking classroom rules will have concrete yet fair consequences.

Scheduling/organization — being on time, keeping on task and staying organized will help set up your lessons (and your students' learning) up for success.

Instructional technique — while you may not have the flexibility you'd like when it comes to content and curriculum, you should have the freedom to choose *how* you teach. For example, 8th grade students may prefer a lecture-style lesson with small group discussions while 3rd grade students may prefer learning math with a digital

game-based learning platform. Observe how your students learn best and use the classroom management strategies and techniques to teach your lessons.

These 20 classroom management techniques have shown to improve classroom behavior, build relationships for a better classroom community, and foster a positive classroom environment where student learning is the number one collective goal.

Try these effective classroom management strategies with your students to become a happier, more effective teacher.

1. Model ideal behavior

Make a habit of demonstrating behavior you want to see, as many studies show that modelling **effectively teaches students how to act** in different situations.

A straightforward way to model certain behaviors is holding a mock conversation with an administrator, other teacher or student helper in front of the class. Talking about a test or other relatable topic, be sure to:

Use polite language

Maintain eye contact

Keep phones in your pockets

Let one another speak uninterrupted

Raise concerns about one another's statements in a respectful manner

After, start a class discussion to list and expand upon the ideal behaviors you exemplified.

2. Let students help establish guidelines

Encourage all students to help you build classroom expectations and rules, as **you'll generate more buy-in than just telling them what they're not allowed to do.**

This is especially essential for new teachers. Near the start of the school year or during the first day of a semester, start a discussion by asking students what they believe should and shouldn't fly in terms of appropriate behavior.

At what points are phones okay and not okay? What are acceptable noise levels during lessons?

This may seem like you're setting yourself up for failure, but -- depending on the makeup of your class -- you may be shocked at the strictness of some proposed rules. Regardless, having a discussion should lead to mutually-understood and -respected expectations for your classroom culture.

3. Document rules

Don't let your mutually-respected guidelines go forgotten.

Similar to handing out a syllabus, print and distribute the list of rules that the class discussion generated. Then, go through the list with your students. Doing this emphasizes the fact that you respect their ideas and intend to adhere to them. And when a student breaks a rule, it'll be easy for you to point to this document.

You'll likely want to post these rules up in your classroom — if you haven't already — for occasional reference. If you're feeling creative, you can include the rule list in a student handbook with important dates, events and curriculum information, too.

4. Avoid punishing the class

Address isolated discipline problems individually instead of punishing an entire class, as **the latter can hurt your relationships with students who are on-task** and thereby jeopardize other classroom management efforts.

Instead, call out specific students in a friendly manner. For example:

“Do you have a question?”, not “Stop talking and disrupting other students”

“Do you need help focusing?”, not “Pay attention and stop fooling around while I’m talking”

This basic approach will allow you to keep a friendly disposition, while immediately acknowledging inappropriate behavior.

5. Encourage initiative

Promote growth mindset, and inject variety into your lessons, by **allowing students to work ahead and deliver short presentations** to share take-away points. Almost inevitably, you’ll have some eager learners in your classroom. You can simply ask them if they’d like to get ahead from time-to-time.

For example, if you’re reading a specific chapter in a textbook, propose that they read the following one too. When they deliver their subsequent presentations to preview the next chapter on your behalf, you may find that other students want a bit more work as well.

6. Offer praise

Praise students for jobs well done, as doing so **improves academic and behavioral performance**, according to a recent research review and study.

When it is sincere and references specific examples of effort or accomplishment, praise can:

Inspire the class

Improve a student’s self-esteem

Reinforce rules and values you want to see

Perhaps more importantly, it encourages students to repeat positive behavior. Let's say a student exemplifies advanced problem-solving skills when tackling a math word problem. Praising his or her use of specific tactics should go a long way in ensuring he or she continues to use these tactics. Not to mention, you'll motivate other students to do the same.

7. Use non-verbal communication

Complement words with actions and visual aids to **improve content delivery,** helping students focus and process lessons.

Many differentiated instruction strategies and techniques are rooted in these communication methods. For example, running learning stations -- divided sections of your classroom through which students rotate -- allows you to deliver a range of non-spoken content types. These include videos, infographics and physical objects such as counting coins.

8. Hold parties

Throw an occasional classroom party to acknowledge students' hard work, **motivating them to keep it up.**

Even if it's just for 20 or 30 minutes, they should be happy with snacks and a selection of group games to play. Clarify that you're holding the party to reward them and they can earn future parties by demonstrating ideal behavior, collectively scoring high on assessments and more.

9. Give tangible rewards

Reward specific students at the end of each lesson, in front of the class, as another **motivational and behavior-reinforcement technique.**

Let's say a few students are actively listening throughout the entire lesson, answering questions and asking their own. Before the class ends, walk over to their desks to give them raffle tickets. So others can learn, state aloud what each student did to earn the tickets. On Friday, they can submit their tickets for a shot at a prize that changes each week -- from candy to being able to choose a game for the next class party.

10. Make positive letters and phone calls

Keep students happy in and out of class by **pleasantly surprising their parents,** making positive phone calls and sending complimentary letters home.

When the occasion arises, from academic effort or behavioral progress, letting parents know has a trickle-down effect. They'll generally congratulate their kids; their kids will likely come to class eager to earn more positive feedback. This can also entice parents to grow more invested in a child's learning, opening the door to at-home lessons. Such lessons are a mainstay element of culturally-responsive teaching.

11. Build excitement for content and lesson plans

This one works well no matter the grade level: elementary school, middle school or high school. Start lessons by previewing particularly-exciting parts, **hooking student interest from the get-go.**

As the bell rings and students settle, go through an agenda of the day's highlights for the whole class. These could include group tasks, engaging bits of content and anything else to pique curiosity. For example, "Throughout the day, you'll learn about:"

How to talk like you're a teacher (sentence structure)

Why you don’t know anyone who’s won the lottery (probability)

What all the presidents of the United States have had in common (social analysis)

The goal of this classroom management technique is to immediately interest students in your agenda and thereby dissuade misbehavior.

12. Offer different types of free study time

Provide a range of activities during free study time to **appeal to students who struggle to process content in silence, individually.**

You can do this by dividing your class into clearly-sectioned solo and team activities. In separate sections, consider:

Providing audiobooks, which can play material relevant to your lessons

Maintaining a designated quiet space for students to take notes and complete work

Creating a station for challenging group games that teach or reinforce standards-aligned skills

Allowing students to work in groups while taking notes and completing work, away from quiet zones

By running these sorts of activities, free study time will begin to benefit diverse learners. This should contribute to overall classroom engagement.

13. Write group contracts

Help student group work run smoothly and effectively by writing contracts that contain guidelines, having everyone sign.

Group contracts should be based on expectations that students have for each other, and you have for them. You can gather the class’s thoughts by holding a discussion

about what the ideal group member does, and how he or she acts. Once you've written the contract, encourage students to come up with consequences for violating expectations.

By having them sign a fresh version of the contract before each group task and project, you're empowering them to hold each other accountable.

14. Assign open-ended projects

Encourage students to tackle open-ended projects -- projects that don't demand a specific product -- to allow them to **demonstrate knowledge in ways that inherently suit them.**

This starts by giving the class a list of broad project ideas, asking each student to choose one. Be sure to provide a rubric for each project that clearly defines expectations. By both enticing and challenging students, you should notice they'll:

Work and learn at their own paces

Engage actively with appropriate content

Demonstrate knowledge as effectively as possible

With these benefits, students may actually look forward to taking on new projects.

15. Give only two scores for informal assessments

Recall a time you saw a big "F" in red ink on your work. You were probably too upset to review mistakes and feedback, and so are your students when they see the same.

So, consider avoiding standard marks on informal and formative assessments.

Instead, just state if a student did or did not meet expectations. Then, provide struggling students with a clear path to improve. For example, pair classmates who

didn’t meet expectations with those who did, giving them a review and practice activity. When strugglers are confident they understand key concepts, encourage them to tell you. Provide a new assessment, allowing them to prove their competency.

Classroom management strategies for individual students

16. Use EdTech that adjusts to each student

Give students who struggle to process your content opportunities to try **educational technology that adapts to their needs.**

There are many games and platforms that use adaptive learning principles to detect a given student’s skill deficits, serving them content to help overcome them.

For example, Prodigy Math adjusts its content to help students in grades 1 to 8 address their trouble spots. It also offers feedback to help them solve specific mistakes, as they answer questions that use words, charts, pictures and numbers.

17. Interview students

Interview students who aren’t academically engaged or displaying prosocial behavior to **learn how to better manage them.**

While running learning stations or a large-group activity, pull each student aside for a few minutes. Ask about:

What helps them focus

Who they work well with

Their favorite types of lessons

Their favorite in-class activities

Which kinds of exercises help them remember key lesson points

Note their answers to come up with activities and approaches that engage them, thereby limiting classroom disruptions.

18. Address inappropriate or off-task behavior quickly

Avoid hesitation when you must address inappropriate or off-task behavior, especially when a student breaks a documented rule.

Acting sooner than later will help ensure that negative feelings -- whether between students or you and a student -- won't fester. Failure to act can result in more poor behavior, leading to needlessly-difficult conversations.

But keep in mind: It's usually **best to talk to the student in private.** Research shows that punishing students in front of peers has "limited value."

19. Consider peer teaching

Use peer teaching as a classroom management strategy if you feel your top performers can help engage and educate disruptive and struggling students.

Peer teaching activities, such as pairing students together as reading buddies, can be **especially beneficial for students who suffer from low confidence and poor interpersonal skills.**

Authoritative research states tutors improve self-esteem and interpersonal skills by giving feedback. Tutees realize benefits because they can ask questions and receive immediate clarification. A later study of at-risk students echoes these advantages. Although you should spend time teaching peer tutors how to properly communicate with tutees, you'll likely find the benefits are worth the work.

20. Gamify personal learning plans

Motivate students on personal learning plans by gamifying those plans, as studies — such as recent research from South Korea — indicate this will **continuously engage and incentivize them.**

Consider gamification strategies such as:

Adjusting your scoring system -- Give experience points (XP) -- along with traditional scores -- on tests and assignments, setting a goal for the student to reach a certain amount of XP per unit. For example, if a student scores 60% on a quiz, give him or her 6,000 XP. You can also award XP for completing extra assignments, participating in class or anything else that shows effort to learn.

Using stages -- Refer to topics and units as stages. The former terms have clear connotations for you, but students may not see how they fit together. If they're gamers, they'll understand that reaching the next stage requires overcoming precursory challenges. Emphasize this by framing certain tasks as prerequisites to reach the next learning stage.

If these strategies work especially well for individual students, you should see similar success by using them as class-wide student management techniques.