**Deductive Reasoning:**
Deductive reasoning is a basic form of valid reasoning. Deductive reasoning, or deduction, starts out with a general statement, or hypothesis, and examines the possibilities to reach a specific, logical conclusion.
"In deductive inference, a theory is taken and based on it a prediction of its consequences is made. That is, we predict what the observations should be if the theory were correct. We go from the general — the theory — to the specific — the observation."

❖ **From general to Specific**
➢ All dolphins are mammals, all mammals have kidneys; therefore, all dolphins have kidneys.
➢ All numbers ending in 0 or 5 are divisible by 5. The number 35 ends with a 5, so it must be divisible by 5.
➢ All cats have a keen sense of smell. Fluffy is a cat, so Fluffy has a keen sense of smell.

**Inductive Reasoning:**
Inductive reasoning is the opposite of deductive reasoning. Inductive reasoning makes broad generalizations from specific observations. Basically, there is data, then conclusions are drawn from the data.
"Inductive inference is from the specific to the general. Observations are made, pattern is drawn, a generalization is made, and theory is explained"

❖ **From Specific to General**

**Convergent and Divergent Reasoning:**
**Convergent:**
- The process of figuring out a concrete solution to any problem is called Convergent Thinking.
- It’s a straight forward process that focuses on figuring out the most effective answer to a problem.
- Characteristics include: Speed, Accuracy, Logic
- Also called: Critical Thinking, Vertical Thinking, Analytical Thinking, Linear Thinking

**Divergent:**
- Divergent thinking is the process of thinking that explores multiple possible solutions in order to generate creative ideas.
- In contrast, divergent thinking refers to opening the mind in various directions and trying out multiple solutions for a problem.
- Characteristics include Spontaneous, Free-flowing, Non-linear
- Also called: Creative Thinking or Horizontal Thinking
Conceptual Generalization:

Conceptual generalization is an investigation whereby the researcher uses other researchers’ experimental findings in conjunction with his or her own process of conceptualization in order to generalize and identify a pattern.

This contrasts with empirical generalization, where the researcher investigates a phenomenon or problem that is apparent in the empirical data, and only thereafter generalizes in the light of his or her own findings.

Reasoning Types:

- **Deductive Reasoning**
- **Inductive Reasoning**
- **Abductive Reasoning**: Seeks theories to explain observations. Less rigorous and allows best guesses. Typically used in the context of uncertainty. Associated with decision making and Trouble-Shooting.
- **Backward Induction**: Top-down approach that starts with theories or end states and works backwards to explain them. Commonly used in Artificial Intelligence. [The way computer plays chess by considering game end-states and work backward to evaluate moves.]
- **Critical Thinking**: rational thought to draw conclusion in an objective, thorough and informed manner. Product of human thought and influenced by factors like culture and language. Can also examine complexities like emotions.
• **Counterfactual Thinking**: Considering things that are known to be impossible. (Evaluating past decisions) Considering how past decisions worked can improve decision making.

• **Intuition**: Judgments made by mind that are perceived by the unconscious. Exhibit intelligence but the processes by which they are generated aren’t well understood.

### 21st Century Skills:

21st Century skills are 12 abilities that today’s students need to succeed in their careers during the Information Age.

- **Critical thinking**: [Finding solutions to problems]
- **Creativity**: [Thinking outside the box]
- **Collaboration**: [Working with others]
- **Communication**: [Talking to others]
- **Information literacy**: [Understanding facts, figures, statistics, and data]
- **Media literacy**: [Understanding the methods and outlets in which information is published]
- **Technology literacy**: [Understanding the machines that make the Information Age possible]
- **Flexibility**: [Deviating from plans as needed]
- **Leadership**: [Motivating a team to accomplish a goal]
- **Initiative**: [Starting projects, strategies, and plans on one’s own]
- **Productivity**: [Maintaining efficiency in an age of distractions]
- **Social skills**: [Meeting and networking with others for mutual benefit]

Each 21st Century skill is fitted into one of three categories:

- **Learning skills**: (the 4 c’s) - Critical thinking, Creativity, Collaboration, Communication
- **Literacy skills**: (IMT) – Information Literacy, Media Literacy and Technology Literacy.
- **Life skills**: (FLIPS) – Flexibility, Initiative, Productivity and Social Skills.
Intellectual Flexibility:

Intellectual flexibility is the ability to assess and adapt to changing circumstances rapidly, draw inferences and conclusions, and to utilize multiple creative solutions. To be intellectually flexible one must strive to be creative, innovative, and independent in thought.

Self-Efficacy:

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997). Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment.

Learned helplessness:

➢ Learned helplessness is a state that occurs after a person has experienced a stressful situation repeatedly. They come to believe that they are unable to control or change the situation, so they do not try — even when opportunities for change become available.
➢ Often begins in Childhood, when caretakers do not respond appropriately to the child’s need for help.

Characteristics:

✓ low self-esteem
✓ low motivation
✓ low expectations of success
✓ less persistence
✓ not asking for help
✓ ascribing a lack of success to a lack of ability
✓ ascribing success to factors beyond their control, such as luck

How to overcome?

The most common treatment is therapy, especially cognitive behavioral therapy (CBT). CBT helps people overcome these types of challenges by changing how they think and act.

Blended Learning:

“Blended learning is an approach to education that combines online educational materials and opportunities for interaction online with traditional place-based classroom methods. It requires
the physical presence of both teacher and student, with some elements of student control over time, place, path, or place.”

It is the formal education programme that’s made up of in-person classroom time as well as individual study online using e-learning software. It is a type of multichannel method that incorporates tutor-led activities, images, video, digital tasks and face-to-face discussion.

Courses that follow the blended learning model often take place in a real ‘brick and mortar’ classroom with a dedicated tutor, but offer additional learning opportunities by way of a digital platform. Digital learning elements are often open to self-pacing by each individual student and can usually be logged in to at any time and in any place.

**Advantages:**

A multichannel teaching method that offers the best of classroom and online learning all in one place.

Each student has a range of different strengths and requirements and a blended learning approach allows tutors to acknowledge this. When they are given the ability to use tools from both traditional and digital spheres, tutors are able to present necessary information in a range of different ways designed to suit the varying learning styles of their students.

**Technology Integration:** Technology integration is the use of technology tools in general content areas in education in order to allow students to apply computer and technology skills to learning and problem-solving. ... Technology integration is defined as the use of technology to enhance and support the educational environment.

**Equality vs Equity:**

- Equality is “the state or quality of being equal; correspondence in quantity, degree, value, rank, or ability”.
- Equity is “the quality of being fair or impartial; fairness; impartiality"

**In Educational Context:**

- In an equal learning environment, all learners would be given the resources they need, such as books and technology.
- In an equitable learning environment, learners would also be given the support they need to achieve. This probably means the teacher is
spending extra time with those learners who need it most. It might mean some learners have longer to complete assignments.

On the face of it, this does not appear equal, but it is equitable. What you are doing is creating an environment where all learners have equal access to success in learning. Equity is fair. It creates equality.

It’s important to know your learners, so that you will create equity in your learning environment.

**Conflict Management:**

- Anytime we gather large numbers of people together in the same space, there is potential for conflict. Different people have competing needs and interests, thus creating conflict. It is especially important for schools to teach students effective ways of conflict resolution to reduce potential problems arising from these competing interests.
- Conflict resolution education is targeted and explicit instruction about how to resolve differences peacefully, manage one’s emotional expressions, and de-escalate potentially explosive situations without violence. Students and teachers alike need this kind of education to minimize the challenges of gathering together in a small space with so many different personalities trying to get along.

The major goals of conflict resolution education (to better understand the school’s responsibility to students and to the community):

**Enhance Students' Social and Emotional Development**

✓ The social and emotional development of children is one of the primary functions of schooling. Schools teach children how to interact with other people who are not members of their own family.

**Creates a Safe Learning Environment**

✓ To have a functioning school, it is critical to create a safe learning environment for all students. If students are not safe in school, then they are unable to focus on their learning. Training school staff and students in conflict resolution strategies can provide them with the skills they need to maintain the school as a safe learning environment for everyone. When students feel safe, they are able to thrive in their school environment.

**Decreases Incidents of Violence**

✓ One of the issues schools face is fighting, bullying, harassment, and other forms of violence among students. Effective conflict management aims to decrease these incidents of violent bullying.

**Create a constructive learning Environment:**
✓ Incorporating conflict resolution education into the curriculum also helps to create a more constructive learning environment, as students and faculty are thinking philosophically how to interact with others more peacefully.

**Mind Map vs Concept Map:**

**Mind-Map:**
- primarily used for generating and exploring ideas, brainstorming, creative thinking and organizing information.
- Mind maps revolve around one main focus topic which branches out in nodes in a center-out hierarchical structure. Each different node represents a specific subtopic described with symbols and images, which can be further elaborated and branched. When mind mapping, aside from branching out the subtopics, it is possible to randomly add words or sentences as independent clouds.
- To some extent mind maps diagrams can be flexible, but they are always radial, i.e. they are radiating from a shared center.

**Concept Map:**
- Concept maps are primarily used for organizing and visualizing tacit knowledge, analyzing complex problems, identifying solutions and taking action.
- They encapsulate a larger and more complex amount of information and are also used for explaining how these complex concepts relate to each other.
- Concept maps are more factual as they identify more main concepts and the systematic and complex relationships between them.

One important difference between mind mapping and concept mapping is that concept maps include cross-connections between concepts that are described with ‘action verbs’ such as, contributes to, causes, requires, leads to, etc.

**Assessments:**

Assessment is the ongoing process of:
- Gathering, analyzing and interpreting evidence
- Reflecting on findings
- Making informed and consistent judgements to improve student learning.

Assessment for improved student learning and deep understanding requires a range of assessment practices to be used with three overarching purposes:
- **Assessment for learning:** Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners
are in their learning, where they need to go and how best to get there. Assessment for Learning is also known as formative assessment

- **Assessment as learning**: Assessment as Learning is the use of ongoing self-assessment by students in order to monitor their own learning, which is “characterized by students reflecting on their own learning and making adjustments so that they achieve deeper understanding.”
- **Assessment of learning**: occurs when teachers use evidence of student learning to make judgements on student achievement against goals and standards (summative assessment).

**Assessments – Validity, Reliability and Objectivity:**

**Validity in Assessment:**
- Validity generally refers to how accurately a conclusion, measurement, or concept corresponds to what is being tested. Validity is defined as the extent to which an assessment accurately measures what it is intended to measure.

**Reliability in Assessment:**
- Reliability refers to the extent to which an assessment method or instrument measures consistently the performance of the student. Assessments are usually expected to produce comparable outcomes, with consistent standards over time and between different learners and examiners.

**Objectivity in Assessment:**
- Objectivity is the ability to see things without being influenced by personal feelings, emotions, or judgments. An objective assessment is based on evidence or facts. Assessments that are considered objective have a right and wrong answer that will be evaluated in the same way for every person assessed.

**Learning Difficulty vs Slow Learning:**

**Learning Difficulties:**
- A learning difficulty is a condition that can cause an individual to experience problems in a traditional classroom learning context.
- It may interfere with literacy skills development and math/maths and can also affect memory, ability to focus and organizational skills.
- A child or adult with a learning difficulty may require additional time to complete assignments at school and can often benefit from strategy instruction and classroom accommodations, such as material delivered in special fonts or the ability to use a computer to take notes.

**Slow learner:**
- A slow learner is a child of below average intelligence, whose thinking skills have developed significantly more slowly than the norm for his/her age. This child will go through the same basic developmental stages as other children, but will do so at a
significantly slower rate. However, this development, while being slower, nevertheless be relatively even.

**Classroom Layout:**
The way you should set up your desk arrangements and classroom layouts matters. It sets the scene and mood for your classroom.

1. **Table Groups Layout:**
   Best for:
   - Interactive hands-on lessons. Table groups encourage social interaction. This makes them ideal for group work and project-based learning.
   Worst For:
   - Managing student behavior. If you struggle controlling the flow and behavior of your students, consider using another table layout until you can trust your class to move into this more-free flowing classroom layout.

2. **Table Rows Layout:**
   Best for:
   - Individual student work and exams. Students face forward, keeping their concentration on their work on their desk, the board at the front of the room, and the teacher standing at the front.
   - This layout is also ideal for formal teacher-centered lessons in high school classrooms. Students all face directly to the front where the teacher stands.
   Worst for:
   - Social learning. It appears a deliberate design feature of this layout that students do not have shared desk space and have no peers directly facing them.

3. **Workstations:**
   - Closely associated with the ‘open learning spaces’ trend that has taken hold in the past decade.
   - Workstation classroom layouts are very flexible, loose, free-flowing environments, but have the in-built design intention for students to be working at different tasks depending on the station they are working at.
Best For:
- Project-based discovery learning. As each workstation has a different shape and structure, you can create projects with a variety of different foci that revolve around the day’s theme.

Worst For:
- Personal space. Students generally don’t get a permanent personal workspace in workstation environments. Some students who desire personal private space will struggle in this environment. In particular, I have had students with autism struggle in these spaces.

4. Horseshoe Desks:
- Common in university seminars, although are seen in just about any classroom format. The key characteristic of this design is that the students never have their backs to one another and all students have a clear unimpeded view of the central ‘stage’ area of the classroom.

Best For:
- Large group discussions. Students can see one another when speaking up, encouraging face-to-face dialogue. This makes the horseshoe the ideal college classroom layout (especially for college seminars).
- Also very good for guided practice which involves a lot of presentation and modelling from the teacher before students get to have a go themselves.

Worst For:
- I have found that students can be intimidated about speaking up in this environment. With shy groups, I prefer to pair them off in table groups to give students the courage to speak up in smaller group discussions.

5. Double-U Horseshoe Variation:
- Includes two rows in a horseshoe table layout.
- This variation is commonly used in large classes where students cannot fit in just one horseshoe shape.

Best for:
- The Double-U method is best for a teacher-centered passive learning classrooms. Students are all facing directly at a singular ‘action zone’ in the front center of the classroom.
- Guest speakers giving a lecture would be able to use this layout to talk to students and, potentially, keep the attention and eyes of all students.
- It is also a good layout for show-and-tell sessions where students can show-off the props they bring into class. The props can be passed down the line of the horseshoes.
Worst for:

- Small classrooms. This setup is not space efficient and may not be possible in a smaller classroom with minimal space.
- Active learning. There is not much open space for students to engage in active learning on the floor of the classroom.
- Group involvement. It is hard to work in both small and large groups in this layout because students have their backs to one another.

6. **Circle or ‘O-shape’ Layout:**

- desks in a complete closed circle so all students are facing one another.
- It is an uncommon desk layout for classrooms, but can be good for science demonstrations and student-curated performances in the middle space.

**Best for:**

- Whole-class discussions. Students are all facing one another, enabling discussion across the classroom. This discussion format is great for democratic style engaged learning spaces where there is no one person at the ‘head of the discussion.’
- The teacher can also stand in the middle of the circle and very easily move from student-to-student or give science demonstrations.

**Worst for:**

- Mobility. Make sure you have flexible and movable furniture such as desks on rolling wheels for this layout. Students are constantly wanting access to the middle area, requiring a desk to be pulled away to provide access.

7. **Rows and Columns:**

- This layout is designed to separate all students as much as possible so they cannot see or communicate with one another. It may help facilitate engaged learning as distractions are minimized.

**Best for:**

- Exams. Students find it very hard to communicate with one another and cannot look at each other’s work. This helps ensure students work in isolation and do not cheat.

**Worst for:**

- Social learning. It is almost universally accepted that social interaction helps stimulate learning. This type of classroom setup is specifically designed to discourage social learning.

8. **Class Conference:**

- All desks in the room together to create one large, long ‘conference table’.
**Best for:**
- Big picture discussions. Students get together as a group of equals to discuss ‘big picture issues’ as if they are the decision-makers at a conference board.
- This layout can also be excellent for sharing resources. There is ample space in the middle of the conference table for resources to be pooled. Students can take resources from the middle as they need.

**Worst for:**
- Small children. Sometimes smaller children find it hard to communicate across large desks. Similarly, they may not be able to reach the resources in the middle of the table.
- A modelled teaching or teacher-centered teaching style may not suit this layout. Students are not all facing in the same direction making it hard to attract their attention.

9. **Pair Up:**
- flexible for educators. Some teachers may want ask students to be silent and work along, mimicking a rows and columns format (see above).
- However, this format also allows students to work with one peer to discuss their ideas and share resources.

**Best for:**
- Think-pair-share activities. The think-pair-share method involves getting students to work in isolation, then as a pair, then as a whole class.
- Pair-up activities feel very natural in this situation. The tables in this format are designed for students to sit alongside one other student.

**Worst for:**
- Free floor space. I often find it hard to free up room for free floor space in this layout. The desks tend to take up most of the area of the classroom, minimizing options for moving students to the floor for non-desk related activities.

10. **Perpendicular Runway:**
- Classroom has two rows of students facing one another.
- It is a method that is uncommon but can be useful for when you want to divide the class into two distinct and equal groups.

**Best for:**
- Debates. Get the students into ‘Team A’ and ‘Team B’. Have the students come up with ideas for their side of the debate then return to their desks. Zig-zag down the rows asking each student to present a thought defending their side of the debate.
Presentations. The long rows both look out over a ‘runway’ of free, open space for presentations. Have students use the free space in the middle of the class to present their content or have guests give their presentations in the middle space.

Teacher support. This layout is very easy for the teacher to access every student’s desk space quickly to provide tailored support.

Worst for:

Mobility. The long rows mean students are often tripping over each other’s chairs when trying to get in and out of their space. Consider the needs of children with mobility issues and physical disabilities when designing this space.

11. Stadium:

Best for:

Watching videos and presentations. Teachers who love to use videos in their teaching might consider this method. Similarly, if you commonly have students give front-of-class presentations, this might be a good environment for you.

Computer and laptop use. If you use a lot of laptops or tablets, this class might be good. Students will be able to collaborate with one another through messaging software. This may minimize the limitation of this layout, which is lack of ability to use group work.

Worst for:

Group Work. As students sit in rows, it’s hard to form groups to get students talking to one another. There are also many students who will be looking at other students’ heads, so you might find a lot of students pivoting to talk to one another.

12. Wall-Facing Desks (Computer Room Style):

Best for:

Computer use. Students each face their computer and away from others to help them to remain focused on the content. There are few opportunities for students to be distracted by other computer screens aside from those to their direct left and right.

Worst for:

Group discussions. Students are all looking away from each other. When I have used this method, I’ve had to ask all students to turn their monitors off and turn to face the rest of the class during the modeled instruction at the start of the lesson.

**Concept-Fact-Theory-Generalization-Idea**

Concept: an abstract or generic idea generalized from particular instances.

Fact: a piece of information presented as having objective reality.

Theory: a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained.

Generalization: a general statement or concept obtained by inference from specific cases.
Idea: a thought or suggestion as to a possible course of action.

**Curriculum Design:**
- Curriculum design is a term used to describe the purposeful, deliberate, and systematic organization of curriculum (instructional blocks) within a class or course.
- The ultimate goal is to improve student learning.

**Types of Curriculum Design:**
There are three basic types of curriculum design:
- Subject-centered design
- Learner-centered design
- Problem-centered design

**Subject-Centered Curriculum Design:**
- Subject-centered curriculum design revolves around a particular subject matter or discipline.
- Most common type of curriculum used in K-12 public schools.
- Describes what needs to be studied and how it should be studied.
- Core curriculum is an example of a subject-centered design that can be standardized across schools, states, and the country as a whole.
- Teachers are provided a pre-determined list of things that they need to teach their students, along with specific examples of how these things should be taught.

**Drawbacks:**
- The primary drawback of subject-centered curriculum design is that it is not student-centered.
- Constructed without taking into account the specific learning styles of the students.

**Learner-Centered Curriculum Design:**
- Takes each individual's needs, interests, and goals into consideration. In other words, it acknowledges that students are not uniform and adjust to those student needs.
- Meant to empower learners and allow them to shape their education through choices.
- Instructional plans in a learner-centered curriculum are differentiated, giving students the opportunity to choose assignments, learning experiences or activities.
- This can motivate students and help them stay engaged in the material that they are learning.

**Drawbacks:**
- The drawback to this form of curriculum design is that it is labor-intensive.
- Puts pressure on the teacher to create instruction and/or find materials that are conducive to each student's learning needs.
- Teachers may not have the time or may lack the experience or skills to create such a plan.
Problem-Centered Curriculum Design:
➢ Like learner-centered curriculum design, problem-centered curriculum design is also a form of student-centered design.
➢ Focus on teaching students how to look at a problem and come up with a solution to the problem.
➢ Students are thus exposed to real-life issues, which helps them develop skills that are transferable to the real world.
➢ increases the relevance of the curriculum and allows students to be creative and innovate as they are learning.

Drawbacks:
▪ It does not always take learning styles into consideration.

Curriculum Design Tips:
• Identify the needs of stakeholders (i.e., students)
• Create a clear list of learning goals and outcomes (to focus on the intended purpose of the curriculum and allow you to plan instruction that can achieve the desired results.)
• Identify constraints (eg. Time)
• Consider creating a curriculum map (also known as a curriculum matrix) so that you can properly evaluate the sequence and coherence of instruction.
• Identify the instructional methods that will be used throughout the course and consider how they will work with student learning styles.
• Establish evaluation methods that will be used at the end and during the school year to assess learners, instructors, and the curriculum.
• Remember that curriculum design is not a one-step process; continuous improvement is a necessity.

Maslow’s Hierarchy of Needs
➢ Maslow wanted to understand what motivated people.
➢ He believed that individuals possessed a SET OF MOTIVATION SYSTEM unrelated to REWARDS or UNCONSCIOUS DESIRES.
➢ He stated that people are motivated to achieve certain NEEDS, and when one need is fulfilled, they seek to fulfill the next, and so on.
Maslow’s hierarchy of needs include five motivational needs and is depicted as hierarchical levels within a pyramid as given above.
- **Physiological needs**: Air, food, drinks, shelter, warmth, sex, sleep.
- **Safety Needs**: protection from elements, security, order, law, limits, stability, freedom from fear.
- **Social Needs**: Belongingness, affection and love from family, friends, work group and romantic relationships.
- **Esteem Needs**: Achievement, Mastery, independence, status, dominance, prestige, self-respect and respect from others
- **Self-Actualization**: Realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.

➢ These are the five **BASIC (OR DEFICIENCY) NEEDS**: (physiological, Safety, belonging, Self-esteem and self-actualization).
➢ These needs are said to motivate people when they are unmet.
➢ The need to fulfill such needs will grow stronger when the duration of denial is longer. (longer the denial, stronger the urge to fulfill the needs) Eg: The longer food is denied, stronger the hunger or need to eat.
➢ One must fulfill the basic level needs before progressing to the upper level needs.
➢ When these needs are reasonably satisfied, one might reach self-Actualization.
➢ Every person is capable to fulfill the needs, and also has the desire to do so, but failures disrupt the progress often. Life experiences and losses can cause fluctuations between the levels of hierarchy.

**Expanded Hierarchy Needs**: (Changes later made to the original 5 stage model)
1. Biological and Physiological needs - air, food, drink, shelter, warmth, sex, sleep, etc.
2. Safety needs - protection from elements, security, order, law, limits, stability, etc.
3. Social Needs - Belongingness and Love, - work group, family, affection, relationships, etc.
4. Esteem needs - self-esteem, achievement, mastery, independence, status, dominance, prestige, managerial responsibility, etc.
5. Cognitive needs - knowledge, meaning, etc.
6. Aesthetic needs - appreciation and search for beauty, balance, form, etc.
7. Self-Actualization needs - realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.
8. Transcendence needs - helping others to achieve self-actualization.
Piaget’s Theory of Cognitive Development:

The 4 Stages of Cognitive Development:

- Jean Piaget's theory of cognitive development suggests that children move through four different stages of mental development.
- His theory focuses not only on understanding how children acquire knowledge, but also on understanding the nature of intelligence.

Piaget's stages are:

- Sensorimotor stage: birth to 2 years
- Pre-operational stage: ages 2 to 7
- Concrete operational stage: ages 7 to 11
- Formal operational stage: ages 12 and up

✓ Piaget believed that children take an active role in the learning process, acting much like little scientists as they perform experiments, make observations, and learn about the world.

✓ As kids interact with the world around them, they continually add new knowledge, build upon existing knowledge, and adapt previously held ideas to accommodate new information.

The Sensorimotor Stage
Ages: Birth to 2 Years
Major Characteristics and Developmental Changes:

- The infant knows the world through their movements and sensations
- Children learn about the world through basic actions such as sucking, grasping, looking, and listening.
- Infants learn that things continue to exist even though they cannot be seen (object permanence)
- They are separate beings from the people and objects around them
- They realize that their actions can cause things to happen in the world around them

✓ Infants and toddlers acquire knowledge through sensory experiences and manipulating objects.
✓ A child's entire experience at the earliest period of this stage occurs through basic reflexes, senses, and motor responses.

The Preoperational Stage
Ages: 2 to 7 Years
Major Characteristics and Developmental Changes:

- Children begin to think symbolically and learn to use words and pictures to represent objects.
- Children at this stage tend to be egocentric and struggle to see things from the perspective of others.
- While they are getting better with language and thinking, they still tend to think about things in very concrete terms.

✓ At this stage, kids learn through pretend play but still struggle with logic and taking the point of view of other people.
✓ They also often struggle with understanding the idea of constancy.

**The Concrete Operational Stage**

**Ages: 7 to 11 Years**

Major Characteristics and Developmental Changes:

- During this stage, children begin to thinking logically about concrete events
- They begin to understand the concept of conservation; that the amount of liquid in a short, wide cup is equal to that in a tall, skinny glass, for example
- Their thinking becomes more logical and organized, but still very concrete
- Children begin using inductive logic, or reasoning from specific information to a general principle

✓ While thinking becomes much more logical during the concrete operational state, it can also be very rigid.
✓ Kids at this point in development tend to struggle with abstract and hypothetical concepts.
✓ During this stage, children also become less egocentric and begin to think about how other people might think and feel.
✓ Kids in the concrete operational stage also begin to understand that their thoughts are unique to them and that not everyone else necessarily shares their thoughts, feelings, and opinions.
The Formal Operational Stage
Ages: 12 and Up
Major Characteristics and Developmental Changes:

- At this stage, the adolescent or young adult begins to think abstractly and reason about hypothetical problems
- Abstract thought emerges
- Teens begin to think more about moral, philosophical, ethical, social, and political issues that require theoretical and abstract reasoning
- Begin to use deductive logic, or reasoning from a general principle to specific information

✓ Involves an increase in logic, the ability to use deductive reasoning, and an understanding of abstract ideas.
✓ The ability to thinking about abstract ideas and situations is the key hallmark of the formal operational stage of cognitive development.
✓ The ability to systematically plan for the future and reason about hypothetical situations are also critical abilities that emerge during this stage.

Positive Learning Environment:

- Classrooms that are caring, supportive, safe, challenging, and academically robust define a positive learning environment.
- A well-managed, safe, and orderly environment that is conducive to learning and encourages respect for all.
- Students learn better when they view the learning environment as positive and supportive.
- A positive environment is one in which students feel a sense of belonging, trust others, and feel encouraged to tackle challenges, take risks, and ask questions.
- Such an environment provides relevant content, clear learning goals and feedback, opportunities to build social skills, and strategies to help students succeed.

Four Elements for Creating a Positive Learning Environment:

1. Safety:
   Before students can succeed academically, they must feel safe, both physically and mentally.

2. Engagement:
   as students move through the K–12 education system, they become increasingly less engaged. This is mainly because students’ individual learning needs are not being met
and that students are not learning the knowledge and skills they need to succeed in the real world. Personalized Learning is one instructional approach that could reverse these trends. This student-centered approach to learning tailors instruction to students’ unique strengths and needs and engages them in challenging, standards-based academic content.

3. **Connectedness:**
   Students must feel connected to teachers, staff, and other students. Schools can nurture these connections by focusing on students’ social and emotional learning (SEL).

4. **Support:**
   Students must feel supported by all those connected to their learning experience. This includes teachers, classmates, administrators, family, and community members. These parties should share an understanding of what positive school climate at the school and classroom looks like so they can work together toward this common goal.

10 Ways to Create a Positive learning Environment:

1. **Address Student Needs**
   Remember that students, like adults, have not only physical needs but also important psychological needs for security and order, love and belonging, personal power and competence, freedom and novelty, and fun.

2. **Create a Sense of Order**
   All students need structure and want to know that their teacher not only knows his content area, but also knows how to manage his classroom.

3. **Greet Students at the Door Every Day**
   As students enter your classroom, greet each one at the door. Explain that you want students to make eye contact with you, give you a verbal greeting, and—depending on the age of the students—a high five, fist bump, or handshake. This way, every student has had positive human contact at least once that day.

4. **Let Students Get to Know You**
   Students come in to the classroom with preconceived perceptions of teachers. Sometimes it’s good, sometimes it can be an obstacle. Help your students to perceive you as a trustworthy, three-dimensional human being rather than as the two-dimensional perception of an “(subject) teacher” that they may already have.

5. **Get to Know Your Students**
   The more you know about your students’ cultures, interests, extracurricular activities, personalities, learning styles, goals, and mindsets, the better you can reach them and teach them.

6. **Avoid Rewarding to Control**
   Over 50 years of research has shown that incentives, gold stars, stickers, monetary rewards, A’s, and other bribes only serve to undermine students’ intrinsic motivation,
create relationship problems, and lead to students doing nothing without a promised reward.

7. Avoid Judging
   When students feel like they are being judged, pigeonholed, and/or labeled, they distrust the person judging them.

8. Employ Class-Building Games and Activities
   It’s important to develop positive relationships with your students; it’s equally important to develop positive relationships among them. One of the best ways to break down the cliques within a classroom and help shy or new students feel a sense of belonging is to engage students in noncompetitive games and cooperative learning structures.

9. Be Vulnerable
   Being vulnerable develops trust faster than any other approach. Admitting your mistakes shows that you are human and makes you more approachable. It also sends the message that it’s okay to make mistakes in this classroom. That’s how we learn. Vulnerability and public self-evaluation also help develop a growth mindset culture: We embrace mistakes rather than try to avoid them at all costs. We learn from those mistakes and grow.

10. Celebrate Success
    At first this may seem to contradict strategy six about avoiding rewards. It doesn’t. A celebration is a spontaneous event meant to recognize an achievement. It is not hinted at or promised ahead of time like an “if-you-do-this-then-you-get-that” reward. Instead, you might set a class goal, such as the whole class achieving 80 percent or higher on an assessment. Chart students’ progress on a wall chart (percentages, not individual names). After each assessment, discuss the strategies, processes, or study habits that students used to be successful and what they learned and might do to improve on the next assessment.

Tips for Creating A Positive Learning Environment in Your Classroom:

1. Always build classroom rules and procedures collaboratively and in the positive.
   Begin by have a discussion with your students about how they learn best and then fashion your rules accordingly. If some students say they need a quiet area to work in at times, try a sign like, “Quiet Area, Brains at Work.” Also, if your classroom rule says “We don’t use cellphones in class.” the students shouldn’t see their teacher texting someone. Classroom rules should apply to everyone equally.

2. Continually let your students know you believe in them.
   Saying “I know you can get this” rather than “You need to try harder” for example is an indication of your belief in them rather than an accusatory statement. Saying, “We talked about this yesterday. Did you forget?” is laying blame on the student. Instead a statement
like, “You had this so well yesterday. I know you can get it today.” reminds the student of their past success. These are both subtle differences in language that can make a big difference in your students’ perception of your faith in their as learners.

3. **Examine your own mindset:**

   Do you believe in your own ability to learn and grow? Do you believe it is your obligation as a teacher to model learning and growing? Look at this graphic on an educator’s mindset and do a little self-reflection.

4. **Show students that they are learning for their own benefit, not yours.**

   Avoid saying “What I need you to do for me…”. This tells the student they are doing a task for the benefit and approval of the teacher. Just eliminate that part of the direction and begin with, “The first thing you need to do to learn this is…” The learning has to be for the benefit of the learner, not the teacher.

5. **Be honest in your feedback.**

   Good feedback tells the learner what they did correctly, where they may have missed the mark, and what specifically they need to do next. Undeserved praise lessens the impact or praise when it is truly earned.

6. **When dealing with a student conflict or behavioral issue, be objective rather than accusatory.**

   For example, rather than say, “Why did you take Jacob’s pencil?” begin by asking what happened. Asking why a student did something will likely provoke a defensive comment. “I took is pencil because he called me a name.” This leads to the inevitable “No I didn’t, yes you did” cycle. Asking what happened will allow both students to tell their story, moderated by the teacher. Give prompts like, “How did you think that make Jacob feel?” – “How else do you think you might have reacted?” – “What might you try next time?”

**Bullying:**

- Bullying is an ongoing and deliberate misuse of power in relationships through repeated verbal, physical and/or social behavior that intends to cause physical, social and/or psychological harm.
- It can involve an individual or a group misusing their power, or perceived power, over one or more persons who feel unable to stop it from happening.
- Bullying can happen in person or online, via various digital platforms and devices and it can be obvious (overt) or hidden (covert). Bullying behavior is repeated, or has the potential to be repeated, over time (for example, through sharing of digital records).
- Bullying of any form or for any reason can have immediate, medium and long-term effects on those involved, including bystanders.
➢ Single incidents and conflict or fights between equals, whether in person or online, are not defined as bullying.

What is NOT Bullying?
• Single episodes of social rejection or dislike.
• Single episode acts of nastiness or spite.
• Random acts of aggression or intimidation.
• Mutual arguments, disagreements or fights.

These actions can cause great distress. However, they do not fit the definition of bullying and they’re not examples of bullying unless someone is deliberately and repeatedly doing them.

Child Abuse:

What is child abuse?
➢ Child abuse is when a parent or caregiver, whether through action or failing to act, causes injury, death, emotional harm or risk of serious harm to a child.
➢ There are many forms of child maltreatment, including neglect, physical abuse, sexual abuse, exploitation and emotional abuse.

Different kinds of child abuse and their signs:

Physical Abuse
➢ Physical abuse of a child is when a parent or caregiver causes any non-accidental physical injury to a child.
➢ There are many signs of physical abuse. If you see any of the following signs, please get help right away.

Physical abuse can result in:
• Bruises, blisters, burns, cuts and scratches
• Internal injuries, brain damage
• Broken bones, sprains, dislocated joints
• Emotional and psychological harm
• Lifelong injury, death

Signs of physical abuse in parent or caregiver:
• Can’t or won’t explain injury of child, or explains it in a way that doesn’t make sense
• Displays aggression to child or is overly anxious about child’s behavior
• Indicates child is not trustworthy, a liar, evil, a troublemaker
• Delays or prevents medical care for child
• Takes child to different doctors or hospitals
• Keeps child from school, church, clubs
- Has history of violence and/or abuse

**Signs of physical abuse in a child:**

**Physical:**
- Any injury to a child who is not crawling yet
- Visible and severe injuries
- Injuries at different stages of healing
- On different surfaces of the body
- Unexplained or explained in a way that doesn’t make sense
- Distinctive shape
- Frequency, timing and history of injuries (frequent, after weekends, vacations, school absences)

**Behavioral:**
- Aggression toward peers, pets, other animals
- Seems afraid of parents or other adults
- Fear, withdrawal, depression, anxiety
- Wears long sleeves out of season
- Violent themes in fantasy, art, etc.
- Nightmares, insomnia
- Reports injury, severe discipline
- Immaturity, acting out, emotional and behavior extremes
- Self-destructive behavior or attitudes

**Sexual Abuse**
- Sexual abuse occurs when an adult uses a child for sexual purposes or involves a child in sexual acts.
- It also includes when a child who is older or more powerful uses another child for sexual gratification or excitement.

**Sexual abuse of children includes:**
- Non-contact abuse
- Making a child view a sex act
- Making a child view or show sex organs
- Inappropriate sexual talk
- Contact abuse
- Fondling and oral sex
- Penetration
- Making children perform a sex act
- Exploitation
- Child prostitution and child pornography
Signs of sexual abuse in parent or caregiver:

- Parent fails to supervise child
- Unstable adult presence
- Jealous/possessive parent
- Sexual relationships troubled or dysfunctional
- Parent relies on child for emotional support
- Signs of sexual abuse in a child:

Physical:

- Difficulty sitting, walking, bowel problems
- Torn, stained, bloody undergarments
- Bleeding, bruises, pain, swelling, itching of genital area
- Frequent urinary tract infections or yeast infections
- Any sexually transmitted disease or related symptoms

Behavioral:

- Doesn’t want to change clothes (e.g., for P.E.)
- Withdrawn, depressed, anxious
- Eating disorders, preoccupation with body
- Aggression, delinquency, poor peer relationships
- Poor self-image, poor self-care, lack of confidence
- Sudden absenteeism, decline in school performance
- Substance abuse, running away, recklessness, suicide attempts
- Sleep disturbance, fear of bedtime, nightmares, bed wetting (at advanced age)
- Sexual acting out, excessive masturbation
- Unusual or repetitive soothing behaviors (hand-washing, pacing, rocking, etc.)
- Sexual behavior or knowledge that is advanced or unusual
- Reports sexual abuse

Emotional Abuse

- When a parent or caregiver harms a child’s mental and social development, or causes severe emotional harm, it is considered emotional abuse.
- While a single incident may be abuse, most often emotional abuse is a pattern of behavior that causes damage over time.

Emotional abuse can include:

- Rejecting or ignoring: telling a child he or she is unwanted or unloved, showing little interest in child, not initiating or returning affection, not listening to the child, not validating the child’s feelings, breaking promises, cutting child off in conversation
• Shaming or humiliating: calling a child names, criticizing, belittling, demeaning, berating, mocking, using language or taking action that takes aim at child’s feelings of self-worth
• Terrorizing: accusing, blaming, insulting, punishing with or threatening abandonment, harm or death, setting a child up for failure, manipulating, taking advantage of a child’s weakness or reliance on adults, slandering, screaming, yelling
• Isolating: keeping child from peers and positive activities, confining child to small area, forbidding play or other stimulating experiences
• Corrupting: engaging child in criminal acts, telling lies to justify actions or ideas, encouraging misbehavior

Signs of emotional abuse in parent or caregiver:
• Routinely ignores, criticizes, yells at or blames child
• Plays favorites with one sibling over another
• Poor anger management or emotional self-regulation
• Stormy relationships with other adults, disrespect for authority
• History of violence or abuse
• Untreated mental illness, alcoholism or substance abuse

Signs of emotional abuse in a child:

Physical:
• Delays in development
• Wetting bed, pants
• Speech disorders
• Health problems like ulcers, skin disorders
• Obesity and weight fluctuation

Behavioral:
• Habits like sucking, biting, rocking
• Learning disabilities and developmental delays
• Overly compliant or defensive
• Extreme emotions, aggression, withdrawal
• Anxieties, phobias, sleep disorders
• Destructive or anti-social behaviors (violence, cruelty, vandalism, stealing, cheating, lying)
• Behavior that is inappropriate for age (too adult, too infantile)
• Suicidal thoughts and behaviors

Child Neglect
➢ Child neglect is when a parent or caregiver does not give the care, supervision, affection and support needed for a child’s health, safety and well-being.
Child neglect includes:

➢ **Physical neglect and inadequate supervision**
   - Deserting a child or refusing to take custody of a child who is under your care
   - Repeatedly leaving a child in another’s custody for days or weeks at a time
   - Failing to provide enough healthy food and drink
   - Failing to provide clothes that are appropriate to the weather
   - Failing to ensure adequate personal hygiene
   - Not supervising a child appropriately
   - Leaving the child with an inappropriate caregiver
   - Exposing a child to unsafe/unsanitary environments or situations

➢ **Emotional neglect**
   - Ignoring a child’s need for attention, affection and emotional support
   - Exposing a child to extreme or frequent violence, especially domestic violence
   - Permitting a child to use drugs, use alcohol, or engage in crime
   - Keeping a child isolated from friends and loved ones

➢ **Medical neglect**
   - Not taking child to hospital or appropriate medical professional for serious illness or injury
   - Keeping a child from getting needed treatment
   - Not providing preventative medical and dental care
   - Failing to follow medical recommendations for a child

➢ **Educational neglect**
   - Allowing a child to miss too much school
   - Not enrolling a child in school (or not providing comparable home-based education)
   - Keeping a child from needed special education services

**Signs in Child**

➢ While a single indicator may not be cause for alarm, children who are neglected often show that they need help:
   - Clothing that is the wrong size, in disrepair, dirty, or not right for the weather
   - Often hungry, stockpiles food, seeks food, may even show signs of malnutrition (like distended belly, protruding bones)
   - Very low body weight, height for age
   - Often tired, sleepy, listless
   - Hygiene problems, body odor
   - Talks about caring for younger siblings, not having a caregiver at home
   - Untreated medical and dental problems, incomplete immunizations
• Truancy, frequently incomplete homework, frequent changes of school