The term **growth and development** both refers to dynamic process. Often used interchangeably, these terms have different meanings.

**Growth and development** are interdependent, interrelated process.

**Growth** generally takes place during the first 20 years of life.; **development** continues after that.

**Growth:**

1. Is physical change and increase in size.
2. It can be measured quantitatively.
3. Indicators of growth includes height, weight, bone size, and dentition.
4. **Growth** rates vary during different stages of growth and development.
5. The growth rate is rapid during the prenatal, neonatal, infancy and adolescent stages and slows during childhood.
6. Physical growth is minimal during adulthood.

**Development:**

1. Is an increase in the complexity of function and skill progression.
2. It is the capacity and skill of a person to adapt to the environment.
3. Development is the behavioral aspect of growth.

1- **Biological development:**

- **Sperm fertilizing an egg**

Development begins with fertilization, the process by which the male gamete, the sperm cell, and the female gamete, the egg, fuse to produce a zygote.

- **In pregnancy the 3 stages are commonly referred as Z.E.F.**
- meaning Zygote, Embryo, Fetus.
- Fertilization then implantation(nidation) are the processes which mark the beginnings of a new pregnancy.
- Fertilization is when a sperm cell enters an ovum and forms a viable zygote. The zygote then becomes implanted in the endometrium of a woman's uterus. This forms a placenta.
- The new being receives essential nutrients through the uterus wall.
- The umbilical cord in an unborn child helps get the nutrients to the child and helps get rid of the waste from the child.
- Before the placenta is developed the blastocyst receives its nutrients from the yolk sac, which is contained within the blastocyst.
- The zygote undergoes rapid cell divisions with no significant growth
(a process known as cleavage) and cellular differentiation, leading to development of an embryo.

- Childbirth is the process in which the baby is born.
- Age is defined relative to this event in most cultures

**Physical stages of human life**

There are no universal definitions for terms of age-related physical development stages, but following are some approximate age ranges:

- **Prenatal** (fertilization - birth)
  - **Embryo** - (fertilization - 8 weeks of gestational phase)
    - Zygote, the point of conception, fertilization
    - Blastocyst the period between conception and embryonic stages
    - Embryo; the embryonic period starts at three weeks and continues until the end of the 8th week of pregnancy
  - **Fetus** (8 weeks of gestational phase - birth)

- **Child** (Childbirth)(0 - 12)
  - Neonate (newborn) (0 – 30 days)
  - Infant (baby) (1 month - 12 months)
  - Toddler (1 – 3 years)
  - Play age (4–5 years)
  - Primary school age (also called prepubescence) (4-12)
    - Elementary school age (also called middle childhood) (4-9)
    - Preadolescence (preteen, or late childhood. The child in this and the previous phase are called schoolchild (schoolboy or schoolgirl), when still of primary school age.) (10 – 12 years)

- **Adolescence** and puberty (13 – 19 years)
  - Peripuberty (8-10 until 15-17)
• **Adult** (20+ years)
  o **Early adulthood** (20 – 39 years)
  o **Middle adulthood** (40 – 59 years)
  o **Advanced adulthood/Senior citizen** (60+ years)

• **Death** (occurs at various ages, depending on person)
  o **Decomposition** (breakdown of the body after death)

**Factors that influence growth and development:**

1- **Heredity**: An individual's genetic makeup determines not only physical characteristics such as skin color, facial features, hair texture, and body structure, but also a predisposition to certain disease(sickle cell anemia).

2- **Health status**: Achievement of developmental milestones can be delayed by illness or disability.

3- **Life experiences**: A child whose family has few resources for food, shelter, and health care has a higher risk of lagging in physical and mental growth and development than a child whose family has plenty of resources.

4- **Culture**: Individuals are expected to master certain skills at each developmental period, but the age for master id determined partly by culture.

**Dimensions of human development**

5- **Physiological dimension of growth and development**:

  **Consist of**:
  
  1- Genetic predisposing
  2- Nutrition.
6- Psychological Dimension:

**Consist of**: feeling and interpersonal relationships

1- **Positive self-concept** (body image, self-esteem, ideal self).

   Positive self-concept include:
   
   A- Self-confidence.
   B- Willing to take risks
   C- Able to accept criticism and not become defensive.
   D- Able to adapt to stressors.
   E- Has innovative problem-solving skills

➢ **Theories for personality development**:

1- Sigmund frauds' theory (called psychosexual theory).

2- Erikson theory (called psychosocial theory) he believed that each stages has a task to be mastered.

<table>
<thead>
<tr>
<th>Frauds stages of psychosexual development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>stage</strong></td>
</tr>
<tr>
<td>oral</td>
</tr>
<tr>
<td>Anal</td>
</tr>
<tr>
<td>phallic</td>
</tr>
<tr>
<td>Latency</td>
</tr>
</tbody>
</table>
Erikson stages of psychosocial development

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age</th>
<th>Task to master</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust vs. mistrust</td>
<td>Birth - 1 year</td>
<td>Establish a sense of trust</td>
</tr>
<tr>
<td>Autonomy vs. shame</td>
<td>1 year – 3 years</td>
<td>Do things for self</td>
</tr>
<tr>
<td>Initiative vs. guilt</td>
<td>3 years - 6 years</td>
<td>Initiate activities and moral responsibility</td>
</tr>
<tr>
<td>Industry vs. inferiority</td>
<td>6 years - 12 years</td>
<td>Develop scholastic and social skills and self-esteem</td>
</tr>
<tr>
<td>Identity vs. role confusion</td>
<td>12 years - 18 years</td>
<td>Seek sense of identity and values</td>
</tr>
<tr>
<td>Intimacy vs. isolation</td>
<td>18 years - 30 years</td>
<td>Develop intimate relationship and choose career</td>
</tr>
<tr>
<td>Generativity vs. stagnation</td>
<td>30 years - 65 years</td>
<td>Establish a family and become productive</td>
</tr>
<tr>
<td>Integrity vs. despair</td>
<td>65+ years</td>
<td>Accept one's life</td>
</tr>
</tbody>
</table>

3-cognitive Dimension:

- Basis of cognitive theory
The way a person thinks and understands the world shapes that person's perception, memory, attitude, action, and judgment.

Jean Piaget (1963) studied the differences in children's thinking pattern at various ages and how they used intelligence to answer questions and solve problems.

**Piagetian stages of cognitive development**

- children learn by actively constructing knowledge through hands-on experience.
- the adult's role in helping the child learn was to provide appropriate materials for the child to interact and construct.
- He would use Socratic questioning to get the children to reflect on what they were doing.
- He would try to get them to see contradictions in their explanations.

**4-Moral Dimension:**

- Is a person's value system, which helps one differentiate right and wrong.
- Moral maturity: the ability to independently decide for oneself what is right.
- Lawrence Kohlberg (1977) described a framework for understanding how the individual decide on a moral code.
- The six stages of moral development:

**Level I: preconvention (birth-9years)**

- Stage 1: punishment and obedience orientation.
- Stage 2: instrumental-relativist orientation

**Level II: conventional (9years-13years)**
Stage 3: interpersonal concordance

Stage 4: law and order orientation

**Level III: post conventional (13+years)**

Stage 5: social contract orientation

Stage 6: universal ethics orientation

**5-Spiritual Dimension**

- Spiritual dimension is described as a sense of personal meaning.
- The term spirit is derived from the Latin word meaning breath, air, and wind.
- Spirituality refers to relationships with one's self to person, others, and divine source or a higher power.
- Spirituality is developed throughout life.