

Child Development

Physical
Development



Human Development

- Development tends to be referred to in terms of areas or domains.
- Development is also referred to in terms of periods.
- Physical, intellectual, social, language & emotional.
- Prenatal, infancy, childhood, adolescence, adulthood, old age.



General Development

- **Infant/toddler years (birth–2 years):** sees rapid physical development. By six months, birth-weight doubles, and it can triple by end of the first year.
- **Early childhood years (2–6 years):** children's physical and cognitive capabilities extend. They discover what their bodies are capable of.
- **Middle and late childhood years (6–11 years):** physical growth slows down. A time to consolidate the movement skills acquired in the early years and to prepare the body for the tumult of puberty.

Introduction to Physical Development

- Adults working with young children need to consider how children develop holistically to enable them to better support children's individual needs (White 2014).
- Understanding physical development is essential when studying holistic development.



Introduction to Physical Development

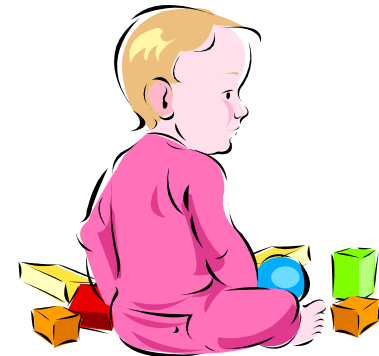
“ Physical development is essential for good posture and healthy lifestyle, which if enjoyed throughout the early years should provide children with the confidence to continue to engage in sports through their later years in school and socially as an adult”

(White, 2014:339)

Introduction to Physical Development

Children's growth and development enables them to:

- Explore their environment
- To make sense of their world
- To achieve new skills
- To change the ways others perceive them
- Helps their development of self



Nature/Nurture

- “Physical development has been described as ‘experience-expectant’ learning which means that the brain is wired in expectation of this development. If it doesn’t happen early it is more difficult to establish later on.” (Early Years Matters, 2022).
- Whilst the brains of children are pre-programmed to develop physical skills (nature), they need opportunities and support to develop them (nurture).

Introduction to Physical Development

- Child who successfully carries out various tasks
- Child who constantly fails or is given the impression that he is a failure
- Develops new skills and can achieve a positive self image
- Has difficulty in developing a positive sense of self

Physical Development

- Growth and development are continuous and proceed in a typical or expected pattern.
- Normal – describes a child of average height and weight who is developing typical characteristics for his age.

Growth and Physical Development

- Growth and physical development are closely linked.
- **Growth** is when cells divide to increase the size, weight and length of the body.
- Physical **development** is the ability of children to perform more complex activities involving their gross motor skills, fine motor skills and co-ordination. Skills are developed through muscle control.
- **Maturation** is the development of systems which form the human body i.e. nervous system, circulatory system and endocrine system.

The characteristics and capabilities of newborns

- Babies are well equipped for surviving close to their mother in their new life outside the womb.
- They arrive with a range of reflexes, psychological and behavioural capabilities, and a voracious appetite to do and to know.
- In many ways they are ready to meet the challenges ahead in new and very different surroundings.
- The basic five senses enable babies to make sense of and to react to the world around them.

Sensory Capabilities

- **Touch**

- The newborn's sense of touch is well developed at birth.
- Touch is an important way for a baby to communicate in the new surroundings.
- Sensitive areas on the palms, soles of the feet and in the mouth are linked to certain **reflexes**.
- Sensations against the skin provide comfort and security.
- Touch informs about temperature.
- Responses to pain are similar, there is some evidence that babies feel pain more than adults.

Sensory Capabilities

- **Smell**

- It is believed that some preferences for smell are **innate**.
- Smell and taste preferences are connected (Mennella, 2007 in Doherty & Hughes, 2009).
- Babies can identify pleasant smells; turn away from unpleasant ones.
- Mother's milk; early bonding.

Sensory Capabilities

- **Taste**

- Newborns have the capacity to experience all four taste sensations: salty, sour, bitter and sweet.
- They show a preference for sweet taste by licking and smiling.
- This may be important for their early survival as they respond well to the sweetness present in the mother's milk.

Sensory Capabilities

- **Vision**

- A newborn's vision is poor – approximately 20/400 – yet able to fulfil its functions.
- Slowly improves to 20/20 by age two years.
- **Visual acuity**: sharpness of vision limited to 20 cm and remains at that level for about three months.
- **Visual accommodation**: brings objects into focus but is poor; it improves over the first two months.
- Development of distance perception and visual awareness aids the acquisition of children's hand-eye co-ordination later on.

Sensory Capabilities

- **Hearing**

- Associated systems function well at birth.
- Newborns can distinguish the mother's voice from that of others (Barker & Newman, 2004 in Doherty & Hughes 2009).
- Newborns can distinguish between sound patterns, and are able to differentiate between different intonations.
- They prefer female voices because of their high pitch.
- They respond quickly to sounds around them by turning their heads.
- The ability to locate sound improves quickly.

Reflexes

- **Primitive reflexes** are automatic responses to stimulation. No conscious thinking is involved and they are not learned. Controlled by the lowest and most primitive part of the human brain, the brain stem.
- **Survival reflexes** are related to the baby's survival and further assists with mother-child attachment , e.g. sucking/swallowing and rooting.
- Reflexes are important indicators of normal development and health of the child's nervous system.
- Most disappear in the first 12 months.
- Retention can indicate a variety of problems.

(Doherty and Hughes, 2009)

Motor Development Reflexes

- Built-in reactions to stimuli which help the infant relate to environment.
 - **Sucking Reflex** - enables infants to get nourishment before they have associated a nipple with food.
 - **Rooting Reflex** - is when infant turns head toward side touched, again to gain nourishment. Both rooting and sucking reflexes disappear at 3 to 4 months of age.
 - **Moro Reflex** - neonatal startle response that occurs at sudden noise or movement, believed to be vestige from primate ancestry for survival value.
 - **Grasping Reflex** - is when infant responds to being touched on palms; it, too, disappears at end of the third month.

Physical Development

- The progress of children's control over their body.
 - Progress is characterised by an increase in skill and complexity of performance.
 - Process of muscular movement is referred to as motor development.
 - Motor movement is divided into two areas.
- (Neaum, 2016: 57)

Physical Development

- Gross motor skills
- Fine motor or fine manipulative skills
- Ability to move using whole body movements utilizing large muscles.
- Ability to perform finer skills that require hand eye co-ordination.

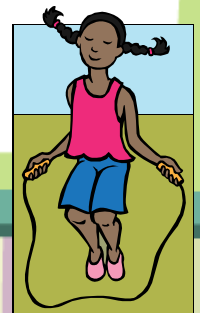
Fine Motor Skills

- This broadly describes the smaller movements. It can be further divided into two areas:
- Fine Manipulative Skills which include the skills needed for drawing, writing, threading etc.
- Fine Motor Skills which include the whole hand and wrist movements such as opening hands together.



Gross Motor Skills

- Gross Motor Skills describe the larger movements of the body and again can be split into two areas:
- Gross motor skills which are whole limb movements such as kicking a ball
- Locomotive skills are the movements children need when they are walking, running, skipping, jumping and so on.



Co-ordination

- This aspect of physical development involves the co-ordination of more than one type of movement or skill.
- As with the previous physical developmental areas, there are a number of different areas within co-ordination:
 - Hand-eye co-ordination (striking or catching a ball, writing, threading, fastening clothing),
 - Foot-eye co-ordination (climbing stairs, kicking a ball) and balance).

Quiz

- On the sheets provided, can you guess at what age babies can achieve these milestones?



Quiz

Can you guess a what age babies can do the following:

- Follow object or person with both eyes
- Hold head up when on tummy
- Hold head steady when sitting
- Laying on back bring hands together touching fingers
- Roll from back to tummy
- Sit with support
- 2 months
- 4 months
- 6 months

Quiz

Can you guess at what age babies can do the following:

- Begins to crawl
- Pulls to standing
- Bangs objects together
- Cruise around furniture
- Hold cup
- Walk with confidence
- Scribble with crayon
- 9 months
- 12 months
- 18 months

The development of gross and fine motor skills

Age	Gross motor skills	Fine motor skills
2 months	holds head up	control of eye movement; smiles
3 months	rolls over kicks vigorously	engages in finger play
5–8 months	sits without support if held standing, legs and feet bear weight	passes toy from hand to hand grasps a toy
9 months	beginning to crawl pulls to standing	bangs objects together beginning to point with index finger can grasp small object with finger and thumb (beginnings of a pincer grip)

Source: Adapted from Sheridan, 1997; Keenan, 2002; Slater and Lewis, 2002; Bukato and Daehler, 2004, (in Johnston, & Nahmad-Williams, 2009)

Age	Gross motor skills	Fine motor skills
12 months	'cruises' around furniture - shuffles on bottom, crawls proficiently - may walk - may stand alone	- holds own cup - picks up fine objects with a pincer grasp - points at objects of interest
18 months	- walks confidently - pushes and pulls large toys - carries toys while moving	- holds crayon, will scribble with gusto - using to and fro motion - makes dots on page - might show preference for using one hand
2 years	- throws ball overhand - beginning to kick a ball - runs - squats to play and rises without difficulty	- turns pages of a book - can unwrap objects - eats with spoon - picks up and returns objects to resting place with ease - holds pencil using thumb and two fingers
3 years	- walks upstairs using alternating feet; jumps - climbs on small apparatus (small slides, climbing frames) - kicks with ease - sits with crossed legs - rides a tricycle with confidence and uses the pedals	- builds a tower of nine cubes - cuts paper with scissors - threads beads - uses lines to form boundaries of objects when drawing pictures - draws 'kisses' (cross) with pencil held in preferred hand near its point

Aspects of Physical Development

- Moving and Handling
- Health and Self-care
- (Early Years Matters, 2022)
- <https://www.earlyyearsmatters.co.uk/our-services/school-and-nursery-support/early-years-adviser/physical-development/>

Discussion

- What kinds of activities and opportunities help children to develop and achieve their physical milestones?

Human Development

- Development is determined by genotype.
- Child is also influenced by various external factors.
- Resulting in each child having his or her own personal phenotype .



Human Development

- Genotype (Nature)
 - Refers to child's genetic make up which is hereditary
- Phenotype (Nurture)
 - Refers to various external factors influencing a child's development, enabling them to develop into a unique person



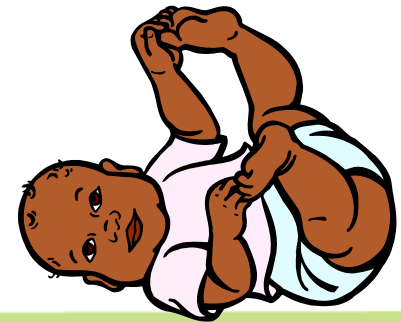
Human Development

- Try rolling your tongue by bringing the sides of your tongue together like a straw.
- The ability to do this is an inherited one!



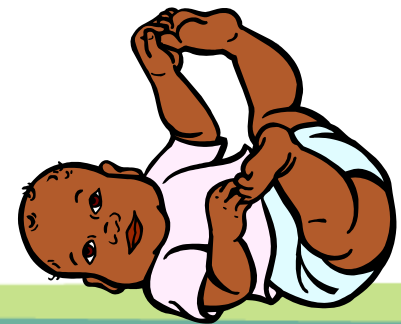
Human Development

- In the past this has been studied from a compartmentalised perspective.
- This tends to lead to an unbalanced idea of the developmental process.



Human Development

- Students tend to concentrate on only one area of development to the detriment of the others.
- Each area of development impacts on the others, and each stage of development leads to the following one.



Holistic Development

“A holistic or whole child approach stresses the importance of thinking about and behaving towards children as entire individuals, that all their skills are important and support their whole development.”

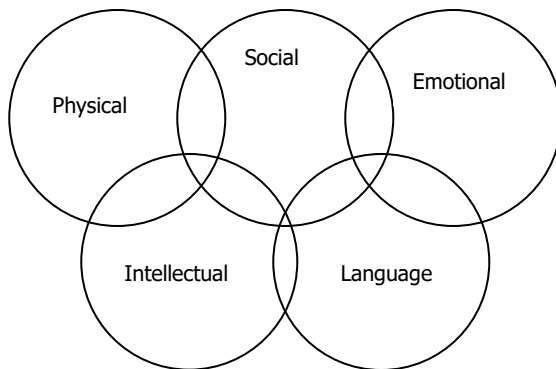
(Lindon, 2005:10)

Holistic Development

- All aspects of children's development are interrelated, inseparable and interdependent.
- Development in different areas, occurs simultaneously and each area is affected by development in other areas.
- Children develop through a complex interplay of biological (nature) and social (nurture) factors.
- The sequence in all areas remains predictable, regardless of the pace of progress – walking come before running, single words before sentences.
- Each stage builds on a previous stage and children need time and experience to go through each stage. (Neaum, 2016:54-55)

Holistic Development

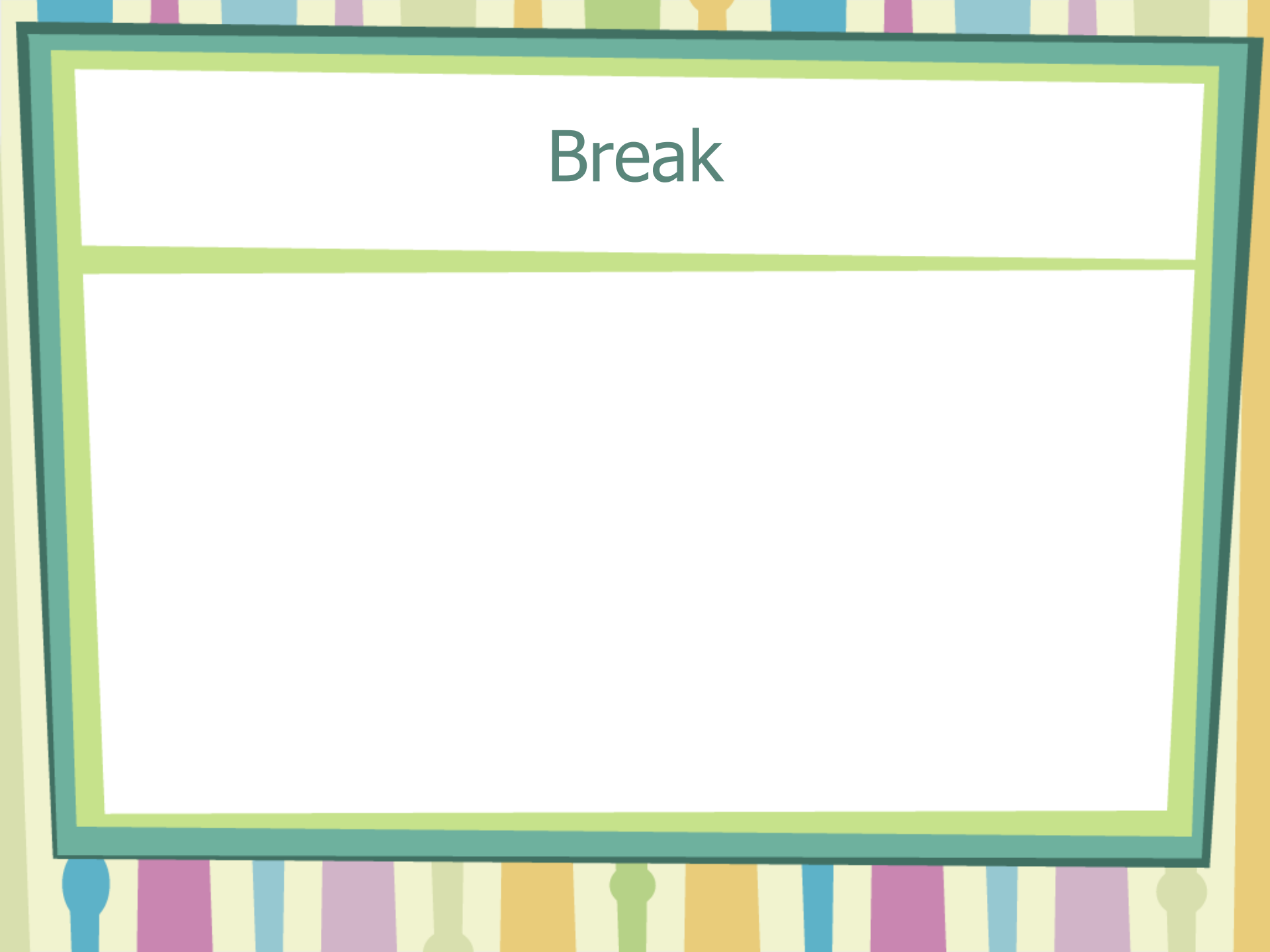
- Interaction between the areas of development.



- Development needs to be viewed holistically.
- None of the areas develop in isolation.
- All areas influence and interact with each other.
- There is continuous interaction between the individual's genotype and his or her environment.

Holistic Development

- As children's bodies grow and mature their ability to acquire skills and movement increases.
- Development progress tends to be steady but can also be very rapid, plateau or even decline.
- Progress is dependent on other aspects of development e.g. social, emotional, linguistic and cognitive development.
- These other areas of development can hinder or increase the likelihood of children meeting milestones earlier or later than expected. (White, 2014)



Break

Physical Development in Adolescents

- Brain development
- Still not reached adult maturity.
- Changes are less about adding anything new but more about streamlining and reorganising existing structure and functions to allow higher level of cognition and behaviour.
- High production of synapses similar to infancy.

Physical Development in Adolescents

- This can lead to inefficiency of thought.
- Pruning of the synapse increases efficiency of thought and performance. This occurs earlier in some parts of the brain than others.
- Area of the brain which controls judgement and impulse and emotions develops later into adolescence or adulthood.

Physical Development in Adolescents

- Adolescents' emotional responses are less influenced by reasoning than in adults
- Adolescents act on their emotions without thinking the situation through.
- Some brain disorders such as schizophrenia do not appear until late adolescence or early adulthood.
- In rare cases children and younger teens can develop early-onset schizophrenia.

(Levine and Munsch 2016)

Physical Development in Adolescents

- Puberty
- Physical change occurs rapidly.
- Adolescents experience growth spurts, and the size, weight and shape of their bodies change as they begin to take on the appearance of adult males and females.
- Puberty moves young people towards sexual maturity.

Physical Development in Adolescents

- Pubertal growth spurt in girls begins around 9 -10 years, in boys it is about 2 years later, but they grow faster than girls.
- Growth spurt end around 15 years for girls and 16 or 17 for boys.
- The sequence of events in puberty is fixed but the timing varies depending on factors such as health, diet, body type, heredity socio-economic background and ethnic background.
- Some cultures celebrate puberty with rights of passage to mark the transition from childhood to adulthood.

(Levine and Munsch 2016)

Physical Development in Adolescents

- Teens and Sexuality
- Sexuality can develop before adolescence but the increase in hormones during puberty increases sexual feelings.
- Teens learn about sex from friends, parents and the media.
- An important part of sexual development is sexual orientation or preferences.
- Most adolescents are attracted to the opposite sex but some find themselves attracted to the same sex.

(Levine and Munsch 2016)

Human Development

Development is continuous,
beginning at conception
and only ceases when a person dies.



(MacLeod-Brudenell, 2004)

Further Reading

- Chapter 5 Physical Development in Infancy and Toddlerhood
- Chapter 8 Physical Development in Early Childhood
- Chapter 14 : Physical Development in Adolescents
- Chapter 11 Physical Development in Middle Childhood
- Levine, L.E. and Munsch, J. (2016) *Child Development from Infancy to Adolescence: An Active Learning Approach*. London: Sage

Further Reading

- Chapter 5 : Children and Young People's Development
- Edmond, N. and Price, M. Integrated Working (2012) *Integrated Working with Children and Young People: Supporting Development Birth to 19*. London: Sage
- Chapter 8: Adolescence
- Zwozdiak-Myers, P. (2007) *Childhood and Youth Studies*. Exeter: Learning Matters

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- Johnston, J. & Nahmad-Williams, L. (2009) *Early Childhood Studies*, London: Pearson Education Ltd
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- MacLeod-Brudenell I (2004) *Advanced Early Years Care and Education for Levels 4 & 5*, Oxford: Heinemann.
- Neaum, S. (2016) *Child Development: For Early Years Students and Practitioners*. 3rd Ed. London: Learning Matters.
- White, R. (2014) Physical Development and the Role of the Physical Environment in Mukherji, P. And Dryden, L. (Eds) *Foundations of Early Childhood: Principles and Practice*, London: Sage