B.Ed (1.5 / 2.5 YEAR)

HUMAN DEVELOPMENT
AND LEARNING

Course Code: 8610          Units: 1–9

EARLY CHILDHOOD EDUCATION AND
ELEMENTARY
TEACHER EDUCATION DEPARTMENT
FACULTY OF EDUCATION
ALLAMA IQBAL OPEN UNIVERSITY
ISLAMABAD
COURSE TEAM

Chairman: Prof. Dr. Nasir Mahmood
Dean, Faculty of Education, AIOU, Islamabad.

Course Coordinator: Dr. Fazal ur Rahman
Associate Professor, AIOU, Islamabad.

Members:
1. Dr. Fazal ur Rahman
   Associate Professor, AIOU, Islamabad.
2. Dr. Muhammad Athar Hussain
   Assistant Professor, AIOU, Islamabad.
3. Dr. Rahmat Ullah Bhatti
   Assistant Professor, AIOU, Islamabad.
4. Ms. Mubesha Tufail
   Lecturer, AIOU, Islamabad.
5. Dr. Effat Alvi
   Assistant Professor
   University of the Punjab
6. Dr. Shaista Khalid
   Assistant Professor
   University of Sargodha
7. Mr. M. Rizwan
   University of Sargodha
8. Dr. Shamaila Shahzad
   University of Sargodha
9. Dr. Mehar Bano
10. Mr. Ishaq. S. Amin

Reviewers:
1. Naveed Mussarat
   (Senior Manager Children’s Global Network)
2. Samina Javed, Project Manager Parwaan
3. Mr. Farhat Riaz, ECD Consultant
ACKNOWLEDGEMENT

Various reforms in teacher education have been introduced to improve the quality of teacher training programs in the country. Higher Education Commission of Pakistan (HEC) also prepared new road map for teacher education. The new road map of the HEC included new programs. The BEd (1.5 years) is a step forward in this direction. The aim of this program is to equip the trainee teachers with knowledge pedagogical skills and disposition necessary for a good teacher. Some important features of the program included teaching practice, research project and enhanced eligibility criteria for admission in the program.

We are grateful to authors of this book for producing high quality, succinct and compact material for use of trainee teachers. We are also indebted to expert team of reviewers for their invaluable input. It is worth mentioning that course coordinator, Dr. Fazal ur Rehman, has very skillfully mediated the whole process of book development, kept the course team engaged and adhered to timeline. The composing and formatting of the scripts was very laborious work requiring extend hours of sitting. Mr. Zahid Bajwa has very efficiently completed the task in short time.

Thanks to our Vice-Chancellor Prof. Dr. Shahid Siddiqui for his vision, support, guidance and motivating work environment for all of us to focus on academic excellence at university.

Prof. Dr. Nasir Mahmood
Dean, Faculty of Education
Allama Iqbal Open University
Islamabad
INTRODUCTION OF THE COURSE

Human development is the stages of physical, social, mental and linguistic growth that occur from birth through age eight. The teachers need to know knowledge and understanding of young children characteristics and needs. Thus knowledge of child development is fundamental for all early age teachers and teacher educators. It enables teacher to implement developmentally appropriate practices with all children. This requires multiple areas of children’s development and learning including physical, cognitive, social, emotional, language and aesthetic domains. The course has been designed to include all these areas. Efforts were made to highlight all the important aspects of human development.

Unit-1 provides an overview of growth and development. It further clarifies that how the educational psychology has relevance for the classroom teacher in a number of ways. Unit-2 related to the information regarding human development. Unit-3 highlights different aspects of intellectual development. Social development discussed in unit 4. While unit 5 deals with emotional development. Moral development is also an important area of human development and this has been discussed in unit 6.

Language development is also very important in child development and unit 7 of the course dealt with in detail. Human learning and classroom environment discussed in unit 8. Areas of individual differences, causes of individual difference and measurement of individual differences discussed in Unit 9 of the course.

This is the first edition of the course of human development and learning. The readers are requested to provide feedback to the department so that it could be revised/improved accordingly.

(Dr. Fazal Ur Rahman)
Course Coordinator/Program Coordinator
OBJECTIVES OF THE COURSE

After successful completion of the course, the students will be able to:

1. Differentiate between growth and development
2. Explain different stages of growth and development
3. Explain the process of human development
4. Describe theories of intellectual development
5. Highlight different factors affecting emotional development of child
6. Explain different theories of moral development
7. Describe stages of language development
8. Create an classroom environment that promotes learning
9. Highlight the role of individual differences in learning and teaching.
## CONTENTS

<table>
<thead>
<tr>
<th>Unit-1: Introduction to Growth &amp; Development (Dr. Effat Alvi)</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Objectives ..................................................................</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Overview ....................................................................</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Overview of Growth and Development ..............................</td>
<td>3</td>
</tr>
<tr>
<td>1.3.1 Growth ....................................................................</td>
<td>3</td>
</tr>
<tr>
<td>1.3.2 Development ........................................................</td>
<td>6</td>
</tr>
<tr>
<td>1.4 General Principles of Child Development ......................</td>
<td>6</td>
</tr>
<tr>
<td>1.4.1 Development is Life-Long ........................................</td>
<td>6</td>
</tr>
<tr>
<td>1.4.2 Development is Both Multidimensional and Multidirectional</td>
<td>6</td>
</tr>
<tr>
<td>1.4.3 Development Involves Both Gains and Losses ..................</td>
<td>6</td>
</tr>
<tr>
<td>1.4.4 Development is Plastic ...........................................</td>
<td>6</td>
</tr>
<tr>
<td>1.4.5 Development is Situated in Context and History ..............</td>
<td>6</td>
</tr>
<tr>
<td>1.4.6 Development is Multidisciplinary ................................</td>
<td>6</td>
</tr>
<tr>
<td>1.5 Issues/Controversies in Child Development .....................</td>
<td>8</td>
</tr>
<tr>
<td>1.5.1 Continuous or Discontinuous ....................................</td>
<td>8</td>
</tr>
<tr>
<td>1.5.2 Single or Multiple Courses ......................................</td>
<td>8</td>
</tr>
<tr>
<td>1.5.3 Nature of Nurture (stability vs. plasticity) ..................</td>
<td>8</td>
</tr>
<tr>
<td>1.6 Factors Influencing Child Development ..........................</td>
<td>10</td>
</tr>
<tr>
<td>1.6.1 Biological Factors ..............................................</td>
<td>10</td>
</tr>
<tr>
<td>1.6.2 Environmental Factors ..........................................</td>
<td>10</td>
</tr>
<tr>
<td>1.6.3 Interpersonal Relationships .....................................</td>
<td>10</td>
</tr>
<tr>
<td>1.6.4 Early environment and experiences ..............................</td>
<td>10</td>
</tr>
<tr>
<td>1.7 Self-Assessment Questions ...........................................</td>
<td>11</td>
</tr>
<tr>
<td>1.8 Bibliography ..................................................................</td>
<td>12</td>
</tr>
</tbody>
</table>

<p>| Unit-2: Physical Development (Dr. Effat Alvi) .......................... | 13       |
| 2.1 Objectives .................................................................... | 13       |
| 2.2 Overview ..................................................................... | 13       |
| 2.3 The ABCs of Genetics .................................................. | 13       |
| 2.3.1 Genetic Inheritance ............................................... | 13       |
| 2.3.2 Genes and Environments .......................................... | 14       |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>Life Before Birth – Prenatal Development</td>
<td>15</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Environmental Risks Teratogens</td>
<td>16</td>
</tr>
<tr>
<td>2.5</td>
<td>Physical Development in Childhood</td>
<td>17</td>
</tr>
<tr>
<td>2.5.1</td>
<td>The course of Physical Growth</td>
<td>17</td>
</tr>
<tr>
<td>2.5.2</td>
<td>Environmental Factors in Physical Development</td>
<td>18</td>
</tr>
<tr>
<td>2.6</td>
<td>Physical Characteristics of Learners</td>
<td>19</td>
</tr>
<tr>
<td>2.6.1</td>
<td>Children need to move</td>
<td>19</td>
</tr>
<tr>
<td>2.6.2</td>
<td>Improved Eye-Hand Coordination</td>
<td>19</td>
</tr>
<tr>
<td>2.6.3</td>
<td>Improved Body Coordination</td>
<td>20</td>
</tr>
<tr>
<td>2.6.4</td>
<td>Improved Perceptual Abilities</td>
<td>20</td>
</tr>
<tr>
<td>2.6.5</td>
<td>Improved Gross and Fine Motor Skills</td>
<td>20</td>
</tr>
<tr>
<td>2.7</td>
<td>Activities in Schools</td>
<td>20</td>
</tr>
<tr>
<td>2.7.1</td>
<td>Preschool and Kindergarten</td>
<td>20</td>
</tr>
<tr>
<td>2.7.2</td>
<td>Elementary Level</td>
<td>21</td>
</tr>
<tr>
<td>2.8</td>
<td>Self-Assessment Questions</td>
<td>22</td>
</tr>
<tr>
<td>2.9</td>
<td>References</td>
<td>22</td>
</tr>
</tbody>
</table>

**Unit-3: Intellectual Development** (Dr. Effat Alvi) ............................................. 23

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Objectives</td>
<td>23</td>
</tr>
<tr>
<td>3.2</td>
<td>Overview</td>
<td>23</td>
</tr>
<tr>
<td>3.3</td>
<td>Definition of Intelligence</td>
<td>24</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Theoretical Positions</td>
<td>24</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Issues and Controversies</td>
<td>26</td>
</tr>
<tr>
<td>3.4</td>
<td>Measurement of Intelligence</td>
<td>27</td>
</tr>
<tr>
<td>3.4.1</td>
<td>Individual intelligence tests</td>
<td>27</td>
</tr>
<tr>
<td>3.4.2</td>
<td>Group intelligence Tests</td>
<td>28</td>
</tr>
<tr>
<td>3.5</td>
<td>Intellectual Development from Infancy to Childhood</td>
<td>29</td>
</tr>
<tr>
<td>3.5.1</td>
<td>Piaget’s Theory of Cognitive Development</td>
<td>29</td>
</tr>
<tr>
<td>3.5.2</td>
<td>Vygotsky’s Socio-Cultural Theory</td>
<td>30</td>
</tr>
<tr>
<td>3.5.3</td>
<td>Information Processing Approach</td>
<td>31</td>
</tr>
<tr>
<td>3.6.1</td>
<td>Organization of Relevant Activities in the Classroom at the following levels Preschool and Kindergarten</td>
<td>32</td>
</tr>
<tr>
<td>3.6.2</td>
<td>Elementary Level</td>
<td>32</td>
</tr>
<tr>
<td>3.6</td>
<td>Self-Assessment Questions</td>
<td>33</td>
</tr>
<tr>
<td>3.7</td>
<td>References</td>
<td>33</td>
</tr>
</tbody>
</table>
Unit-6: Moral Development (Dr. Shaista Khan) .............................................................. 64

6.1 Objectives ............................................................................................................... 64
6.2 Overview .................................................................................................................. 64
6.3 Moral Development ................................................................................................ 64
6.4 Moral Components .................................................................................................. 65
   6.4.1 Factors Affecting Moral Development ................................................................. 65
   6.4.2 What is the Importance of Moral Development? ................................................. 66
6.5 Theories Related to Moral Development .............................................................. 67
   6.5.1 Lawrence Kohlberg’s Theory (1927-1987) ......................................................... 68
   6.5.2 Criticism on Kohlberg’s Theory: Gilligan’s Theory ............................................ 70
6.6 Moral Characteristics of Learners .......................................................................... 72
   6.6.1 Characteristics of Learners at Kindergarten ......................................................... 72
   6.6.2 Classroom Activities to develop Morality ......................................................... 72
   6.6.3 Characteristics of Elementary Learners ............................................................. 73
   6.6.4 Classroom Activities for Elementary Level ....................................................... 74
6.7 Exercise .................................................................................................................... 75
6.8 References .............................................................................................................. 75

Unit-7: Language Development (Dr. Shamaila Shahzad & Muhammad Rizwan) 76

7.1 Objectives ............................................................................................................... 76
7.2 Overview .................................................................................................................. 76
7.3 What is Language? .................................................................................................. 76
7.4 What is Language Development? ......................................................................... 77
   7.4.1 Referential Language Development ................................................................. 78
   7.4.2 Expressive Language Development ................................................................. 78
   7.4.3 Transition in Language Development .............................................................. 78
   7.4.4 Key Signs of Language Development .............................................................. 79
7.5 Theories of Language Development ...................................................................... 80
   7.5.1 The Learning Perspective ................................................................................. 80
   7.5.2 The Nativist Perspective ................................................................................... 81
   7.5.3 Inter-Actionist Perspective .............................................................................. 81
7.6 Components of Language ...................................................................................... 82
   7.6.1 Phoneme ........................................................................................................... 82
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.6.2</td>
<td>Phonology</td>
<td>82</td>
</tr>
<tr>
<td>7.6.3</td>
<td>Morphology</td>
<td>83</td>
</tr>
<tr>
<td>7.6.4</td>
<td>Syntax</td>
<td>84</td>
</tr>
<tr>
<td>7.6.5</td>
<td>Semantics</td>
<td>84</td>
</tr>
<tr>
<td>7.6.6</td>
<td>Pragmatics</td>
<td>84</td>
</tr>
<tr>
<td>7.7</td>
<td>Environmental Influences on Language</td>
<td>86</td>
</tr>
<tr>
<td>7.7.1</td>
<td>Information Processing Perspective of Language Development</td>
<td>86</td>
</tr>
<tr>
<td>7.7.2</td>
<td>Social interaction Perspective of Language Development</td>
<td>86</td>
</tr>
<tr>
<td>7.8</td>
<td>Language Development at Preschool and Kindergarten Level</td>
<td>87</td>
</tr>
<tr>
<td>7.9</td>
<td>Language Development at Elementary Level</td>
<td>90</td>
</tr>
<tr>
<td>7.9.1</td>
<td>Vocabulary and Grammar</td>
<td>90</td>
</tr>
<tr>
<td>7.9.2</td>
<td>Meta-Linguistic Awareness</td>
<td>90</td>
</tr>
<tr>
<td>7.10</td>
<td>Exercise</td>
<td>92</td>
</tr>
<tr>
<td>7.11</td>
<td>References</td>
<td>93</td>
</tr>
</tbody>
</table>

**Unit-8: Human Learning & Classroom Teaching**

(Dr. Fazal ur Rahman & Dr. Mehar Bano)

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>Objectives</td>
<td>94</td>
</tr>
<tr>
<td>8.2</td>
<td>Overview</td>
<td>94</td>
</tr>
<tr>
<td>8.3</td>
<td>Meaning and Nature of Learning</td>
<td>94</td>
</tr>
<tr>
<td>8.3.1</td>
<td>Learning Defined</td>
<td>96</td>
</tr>
<tr>
<td>8.3.2</td>
<td>General Characteristics of Learning</td>
<td>98</td>
</tr>
<tr>
<td>8.3.3</td>
<td>Laws of Learning</td>
<td>99</td>
</tr>
<tr>
<td>8.3.4</td>
<td>Learning as Modification of Behaviour</td>
<td>101</td>
</tr>
<tr>
<td>8.3.5</td>
<td>Conditions of Learning</td>
<td>103</td>
</tr>
<tr>
<td>8.3.6</td>
<td>Imitation in Learning</td>
<td>105</td>
</tr>
<tr>
<td>8.3.7</td>
<td>Summary</td>
<td>106</td>
</tr>
<tr>
<td>8.4</td>
<td>Associative Theories of Learning</td>
<td>107</td>
</tr>
<tr>
<td>8.4.1</td>
<td>Associationism</td>
<td>107</td>
</tr>
<tr>
<td>8.4.2</td>
<td>Conditioning</td>
<td>108</td>
</tr>
<tr>
<td>8.4.3</td>
<td>Classical Conditioning</td>
<td>108</td>
</tr>
<tr>
<td>8.4.4</td>
<td>Extinction and Recovery</td>
<td>109</td>
</tr>
<tr>
<td>8.4.5</td>
<td>Conditioning Paradigms</td>
<td>109</td>
</tr>
</tbody>
</table>
8.4.6 Connectionism Theory by E. L. Thorndike ................................. 110
8.4.7 Edwin Guthrie: Behaviourist Associationist ............................... 111
8.5 Cognitive Theories of Learning .................................................. 112
  8.5.1 Max Wertheinmer: gestalt Psychology ..................................... 112
  8.5.2 Wolfgang Kohler: Learning by Insight ..................................... 112
  8.5.3 Summary ............................................................................. 113
  8.5.4 Activities ........................................................................... 114
  8.5.5 Self-Assessment Questions .................................................... 115
8.6 Bibliography ............................................................................. 115

Unit-9: Individual Differences (Ishaq S. Amin) .................................... 116
9.1 Objectives .................................................................................. 116
9.2 Overview ................................................................................... 116
9.3 Nature and Concept of Individual Differences ............................... 116
  9.3.1 Areas of individual Differences .............................................. 117
  9.3.2 Causes of Individual Differences .......................................... 122
  9.3.3 Educational Provisions .......................................................... 125
  9.3.4 General Provisions ............................................................... 125
  9.3.5 Special Provisions ................................................................. 129
9.4 Measurement of individual Differences ........................................ 135
  9.4.1 Tests of General Intelligence .................................................. 136
  9.4.2 Tests of Aptitude ................................................................. 136
  9.4.3 Interest Inventories ............................................................... 136
  9.4.4 Test of Personality ............................................................... 136
  9.4.5 Competence Based Tests ..................................................... 136
  9.4.6 Multiple Choice Tests or Essays .......................................... 137
  9.4.7 Computer Assisted Testing (CAT) .......................................... 137
  9.4.8 The Portfolio Approach ........................................................ 137
  9.4.9 Grade Equivalent Scores ...................................................... 138
  9.4.10 Curriculum Testing ............................................................ 138
9.5 Summary .................................................................................... 139
9.6 Self-Assessment Questions .......................................................... 140
9.7 References ................................................................................ 140
Unit-1

INTRODUCTION TO GROWTH AND DEVELOPMENT

1.1 OBJECTIVES
At the end of the unit, trainee students will be able to:
1. Differentiate between growth and development
2. Explain different domains and stages of development
3. Articulate the principles of a life-span developmental approach
4. Discuss the basic issues involved in child development
5. Identify the factors that influence child development

1.2 OVERVIEW
Development is a process that entails the entire life-span of an individual, from conception to death. Some of us are intrigued to understand how does development evolve over the years, what are the changes that occur and how do they occur during the life-span? A study of all changes throughout the life-span of an individual is referred to as developmental psychology, developmental science or human development (Keenan & Evans, 2009). However, when we focus our attention to understand the growth, changes and consistencies, on a rather narrower portion of life-span, from conception through adolescence, we are referring to the study of child development.

The field of child development is multidisciplinary, which draws its knowledge from several other fields such as psychology, sociology, anthropology, biology and neuroscience to name a few (Berk, 2013). Likewise, it informs the practices of various experts who are keen to improve the lives of children. These include: educators, pediatricians, psychologists, child care service providers, social service professionals, and parents. In this way, the field of child development has both scientific as well as practical relevance and utility.

While the study of child development is important in its own right, it also informs us about the nature of human development. A better understanding of the growth, changes and stability in the earlier behaviors of life has the potential to inform later behavior, also referred to as adult behavior. As we focus on the growth and development of children in this unit, we draw upon the principles of life-span developmental psychology to inform our understanding.
1.3 OVERVIEW OF GROWTH AND DEVELOPMENT

This section provides an overview of two interrelated yet discrete concepts: growth and development. Child's growth and development are complex processes which are influenced by multiple factors and sources. This unit encompasses them in detail.

The terms *growth* and *development* are often used interchangeably or paired up in a rather similar way, which causes ambiguity over their meaning. It is, therefore, important to understand the difference between these two terms right at the outset.

1.3.1 Growth

The term *growth* implies an addition or increase in the bodily aspects that can be measured, for example, height, weight, size, muscles and length (Woolfolk, 2014). It is based on biological processes that naturally occur over a period of time and are relatively not or less influenced by context except for extreme illness or undernourishment. It eventually stops when the body parts reach the peak of their growth.

Overall, growth refers to the natural, spontaneous, specific, genetically programmed and measurable quantitative gains in a human body. Most of the child's physical gains fall within this category. Some of the developmental psychologists also refer to these changes as *maturation*.

1.3.2 Development

While growth refers to the physical changes that an individual undergoes, *development* refers to certain changes that occur within the life-span of an individual, that is, from conception till death (Keenan & Evans, 2009). It not only involves growth, but also entails disintegration and eventually decay (death). However, not all changes are considered as development. Rather, it applies to those changes that appear in orderly ways and are considerably permanent. Most of these changes are qualitative in nature and influenced by context, for example, changes in behavioral, social, moral and intellectual aspects of an individual. Overall, these changes result in better, adaptive, organized and complex human behaviors.

For further details, please refer to the following material:


Development has been described in different ways to highlight different aspects. These include: domains of development and stages of development. While the former emphasizes the processes that characterize development, the later focuses certain age
periods to manage the flow of time across child development. The following sections describe each of them in detail.

i Domains of development

The pattern of child development is generally divided into three broad categories including physical, cognitive and socio-emotional development (Berk, 2013). The physical domain involves biological changes that occur over time. These include changes in body size, proportions, appearance, motor skills, physical health etc. The cognitive domain includes changes in intellectual abilities and skills such as thinking, intelligence, creativity, attention, memory, language etc. Whereas, the socio-emotional domain highlights the processes that relate to the changes in a child’s relationships with others, feelings, emotions, values, beliefs, personality etc.

The process of child development is quite complex and requires an interaction of several processes including the physical, cognitive and socio-emotional domain. Overall, these domains are interrelated and overlapping (see Fig. 1). Development, itself is the result of this complex interaction. For example, an advancement in the physical domain (e.g., sitting, crawling, walking) contributes towards cognitive domain (e.g., infants’ understanding of their surrounding), which in turn, influences the emotional and social domain (e.g., adults celebrate their baby’s achievements/actions and feelings/bonds are formed). In this way, these domains influence and are influenced by each other.

![Figure 1. The domains of child development](source: Google image)

It is important to note that the domains of child and human development have been classified into a number of different aspects. For example, one classification of child development includes different domains such as the physical, cognitive, language, social
and emotional domain (Child Health Explanation, n.d.). Yet, another way to classify these domains involves physical, personal, social and cognitive (e.g., Woolfolk, 2014). Nevertheless, these domains are not mutually exclusive. For example, social and emotional development overlaps each other significantly and so, can be classified under socio-emotional development. Similarly, cognitive and language development can be grouped together due to their interwoven nature. This is why, we highlight the three broader domains of child development (See Fig. 1) (Berk, 2013). Yet, we are aware that even these three domains are not completely apart; rather, they overlap and interact with each other.

### ii Stages of development

It is believed that an interplay of various domains of development (as discussed in the above section) generate the different stages of child development. Some of the psychologists have used age periods to account for the new capacities, transitions and social expectations in children over the course of time (e.g., Berk, 2013). The most common classification of child development includes the age periods highlighted in Table 1.1.

#### Table 1.1

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age period</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Prenatal period | Conception till birth | ● Rapid changes  
● Transformation of a single cell into a human body |
| Infancy and toddlerhood | Birth up to 2 years | ● Extreme dependency  
● Beginning of intense physical, cognitive and socio-emotional development (e.g., symbolic thought, language development and social learning) |
| Early childhood / Preschool years | 2 to 6 years | ● Self-sufficient  
● Psychological and moral development  
● Considerable expansion in thought and language |
| Middle childhood / Elementary school years | 6 to 11 years | ● Increased responsibility  
● Improved thought processes and athletic abilities  
● Mastery of reading, writing and mathematical skills  
● Increased self and social awareness |
| Adolescence | 11 to 18 years | ● Transition to adulthood  
● Rapid physical changes  
● Increased autonomy, abstract thinking and reasoning  
● Development of a strong belief system |

For further details, please refer to the following material:
Check your knowledge/understanding

1. The study of child development focuses on the:
   a. changes that occur in larger groups of children
   b. growth, change, and stability
   c. biological changes
   d. changes from adolescence to adulthood

2. The three major domains of child development include:
   a. prenatal, cognitive and physical
   b. early childhood, adolescence and cognitive
   c. cognitive, socio-emotional and physical
   d. personality, physical and prenatal

3. Besides domains, child development is organized around certain stages.
   These stages are based on:
   a. biological events
   b. subjective changes
   c. maturation
   d. universal age periods

4. A course which covers infant and toddler development will focus on which of
   the following age range:
   a. 12 to 20 years
   b. 06 to 12 years
   c. 03 to 06 years
   d. birth to 02 years

5. Ayesha, a third-grade teacher, finds it interesting to observe how children's
   attention span and problem-solving abilities increase over the course of the
   school year. She is observing
   a. physical development
   b. social development
   c. cognitive development
   d. personality development

Answers: 1. (b) 2. (c) 3. (d) 4. (d) 5. (c)
1.4 GENERAL PRINCIPLES OF CHILD DEVELOPMENT

Paul Baltes' life-span developmental framework informs our understanding about the general principles of child development in a coherent way (Baltes, 1997). Baltes articulated the basic principles of life-span development which are applied as a coordinated whole to view the nature of human development. These include the following principles:

1.4.1 Development is life-long
The life-long view of development has two aspects. First, development extends throughout the life-span of an individual. Second, new processes and changes may spur throughout the constantly emerging nature of life-span development.

1.4.2 Development is both multidimensional and multidirectional
A healthy development involves multiple dimensions and directions. This implies that development is neither limited to a single criterion (e.g., an increase and decrease in the physical ability), nor is it restricted to a single direction (e.g., only increase or decrease). Rather, it involves multiple abilities which may change over time in multiple ways.

1.4.3 Development involves both gains and losses
According to Baltes, any type of developmental process comprises both, growth and decline. For example, a gain in cognitive abilities of a child during formal schooling also characterizes a loss of his creative abilities as a result of following the school's rules etc. However, the gains and losses should not be treated as equal since the balance between these two may change over time.

1.4.4 Development is plastic
Baltes suggested that the process of development is characterized by plasticity. This implies that human being are open to changes and modifications in response to influential experiences. For example, an infant's brain has the tendency to change, modify and/or pick up the functions of other parts of the brain as a result of injury. Yet, plasticity has certain limitations within various domains of human functioning.

1.4.5 Development is situated in context and history
Children grow up in different contexts which are characterized by their personal, social, and environmental circumstances. These varied circumstances influence the course of their development. In this way, development is situated in context and history. For example, two children growing in rural and urban areas have different types of influences and experiences which can result in different paths of developmental changes for both of them. Similarly, the historical time period in which children grow affects their development in significant ways.

1.4.6 Development is multidisciplinary
Baltes argued that the study of human development is multidisciplinary in nature. Therefore, a single perspective or methodology is not sufficient to develop a holistic understanding of the multiple processes involved in human development. For example, psychological methodologies are not sufficient to reveal the sociological processes
involved in development. In this way, multiple perspectives and approaches are needed to better understand the nature of human development.

**Check your knowledge/understanding**

6. The degree to which a developing behavior or physical structure is modifiable is referred to as:
   a. integral
   b. definitive
   c. critical
   d. plasticity

7. Many older people become wiser with age. Even then, they perform poorly on speed tests. This implies that development is:
   a. multidimensional
   b. multidirectional
   c. lifelong
   d. plastic

8. Differences in families, culture and historical time period in which we are brought up affect our development. This is because development is:
   a. multidimensional
   b. multidirectional
   c. context dependent
   d. plastic

9. Development characterizes different domains including cognitive, physical, and socio-emotional. This implies that development is:
   a. multidimensional
   b. multidirectional
   c. context dependent
   d. plastic

10. The principle that development involves both gains and losses also implies that development is:
    a. multidimensional
    b. multidirectional
    c. lifelong
    d. plastic

   **Answers:** 6. (d) 7. (a) 8. (c) 9. (a) 10. (b)
1.5 ISSUES/CONTROVERSIES IN CHILD DEVELOPMENT

A number of controversies exist in the field of child development due to its complex nature. Researchers vary in their opinion about how children change and develop over time, what are these changes like, and what are the similarities and differences etc (see Keenan & Evans, 2009). These varied perspectives advance the knowledge about child development and psychology by guiding research in diverse areas of child development (e.g., social, emotional, intellectual, and physical development) and contradicting and integrating different views. The following sections present the most recurrent issues in the study of child development.

1.5.1 Continuous or discontinuous

One of the puzzling issues in the study of child development is how to characterize the nature of changes that occur with time? Are they best viewed as a part of a continuous process or do they take place in discontinuous stages?

Some theorists believe that development is a smooth, continuous process in which rather simple knowledge, skills and behaviors are gradually accumulated to form complex knowledge, skills, and behaviors. This implies that the process of development proceeds in an organized and orderly way in which newer and complex behaviors are formed on the basis of previous abilities.

Contrary to this view, other theorists believe that development is a discontinuous process in which new skills and behaviors emerge in rather abrupt and disconnected ways. From this perspective, development takes place in stages and mostly involves a qualitative reorganization of knowledge, behaviors, skills and functioning.

It is important to note that how we choose to examine development (i.e., as a continuous or discontinuous process) affects our understanding and interpretation of the process as well. However, instead of focusing on development as a continuous or discontinuous process, developmental psychologists urge to focus on the sources of continuity or discontinuity. Overall, it is assumed that development has both continuous and discontinuous aspects.

1.5.2 Single or multiple courses

Another issue which concerns developmental psychologists is whether there is a single route of development or is there many? Stage theorists who believe that development occurs in a series of universal stages argue that the same sequence is followed everywhere. Yet, others acknowledge specific features of individuals and the distinct contextual factors in which they are brought up. They believe that child development is influenced by unique combinations of personal (e.g., heredity and biological factors) and environmental (e.g., home, school and community settings) circumstances, and thus, follows multiple and varied tracks.

Overall, researchers today, are more concerned about the contextual factors that influence the course of child development. Most of them acknowledge both universal factors as well as the unique personal and contextual features in the study of child development.

1.5.3 Nature or Nurture (stability vs. plasticity)
Perhaps one of the most controversial questions in the study of child development is about its underlying cause. How does development take place? What are the basic factors that influence development? The answer to these questions sparks a debate about the possible role of nature versus nurture in human development.

The term nature implies that the biological and hereditary traits that we receive from our parents are responsible for our development. The theorists who stress the role of heredity in human development also emphasize stability (i.e., the children who are genetically high or low in certain traits will also remain so in adulthood). Whereas, the term nurture suggests that the complex environmental and cultural influences are accountable for human development. Likewise, the theorists who emphasize nurture believe that development is substantially plastic and open to changes throughout the life-span. Thus, while the theorists attend to both nature and nurture in explaining human development, they vary in their emphasis.

However, the extreme positions on nature or nurture are no longer supported. Rather, it is argued that development is influenced by an interaction of both genetic and environmental factors. This interaction it view is becoming increasingly popular among the researchers as well as the general public, for example, parents. In turn, researchers are encouraged to study the interplay between these two factors in order to understand how development takes place.

Check your knowledge/understanding

11. Umar believes that development is a gradual process, or the result of __________ change, whereas Ali believes that development is a stage-like process, or the result of __________ change.
   a. quantitative, qualitative
   b. continuous, discontinuous
   c. qualitative, quantities
   d. discontinuous, continuous

12. Researchers who support the view that children's intelligence is influenced by the genes that they inherit from their parents believe that development is the result of:
   a. nature
   b. nurture
   c. continuous change
   d. discontinuous changes

13. As we evaluate the controversies in the field of child development, we should:
   a. assume that the majority is likely to be right
   b. apply universal principles regardless of the context
   c. only listen to the parental advice
   d. understand the difference between scientific and subjective data

Answers: 11. (b) 12. (a) 13. (d)
1.6 FACTORS INFLUENCING CHILD DEVELOPMENT

A number of factors affect child development at different levels. They range from personal and biological factors to wider influences such as economic and environmental features; social norms, culture etc (e.g., see Best Start, n.d.). Each factor may support or inhibit a child's development. They can be generally grouped into four categories. These are discussed in the following sections.

1.6.1 Biological factors

As discussed earlier, biological factors refer to the genetic features that individuals receive from their parents. These include gender, as well as general, physical and mental health, inherited traits etc. Boys and girls tend to develop differently. Similarly, general health of the child, for example, birth weight, and medical condition influence his/her development over time. Besides, maternal age, health, stress, and nutrition are likely to influence a child's development.

1.6.2 Environmental factors

Environmental influences including parenting, nutrition, housing, education, culture, income, employment, health services, safety etc affect a child's development. It is important that children are brought up in a safe, healthy and nurturing environment to positively influence their development.

1.6.3 Interpersonal relationships

Interpersonal relationships are critical for a child's learning and well-being. Healthy interpersonal relationships are characterized by attachment, positive parenting style and parental interactions with children, and supportive social networks.

1.6.4 Early environment and experiences

The most important early environment for an infant is provided by his/her primary caregiver. A child's relationship with his/her caregiver, and mutual effects on each other, lay the foundation for development. Consequently, a child's development of social, physical, emotional, language, and cognitive skills is largely influenced by the early environment and experiences gained through reciprocal social interactions with adults and caregivers.
1.7 SELF-ASSESSMENT QUESTIONS

1. What are some of the ways in which culture has influenced your development as a child? Elaborate with examples.

2. Compare and contrast your childhood with the childhood of children living in today’s world. Explain how historical time period influences the development of today’s children when compared with your childhood.

3. What are the major societal influences that determine development?

4. What are the key issues and questions in the field of child development? What is your stand on these issues? Explain with reasons.
1.8 REFERENCES


Unit–2

PHYSICAL DEVELOPMENT

2.1 OBJECTIVES
At the end of the unit, students will be able to:
1. Understand the genetic Foundations which affect child development.
2. Aware of prenatal development and relevant issues
3. Describe the developmental course of physical growth
4. Familiar with the physical characteristics of learners
5. Develop appropriate physical activities for pre and elementary school children

2.2 OVERVIEW
Physical development is one of the major topical areas in the study of child development. It focuses on the ways in which the overall body’s structure including the brain, nervous system, muscles, organs, senses and the bodily needs (e.g., hunger, thirst) determine an individual’s behavior and development. For example, a developmental psychologist might be interested to see how malnutrition affects the physical growth of a child.

However, physical development is not only specified to the biological and maturational changes that occur over time with little or no influence from the context. Rather, it is believed to occur within an environmental context, where factors such as nutrition, opportunities for play, cultural practices etc play a significant role.

2.3 THE ABCS OF GENETICS
A human body is composed of trillions of micro units, called cells. Each cell has a core control, named as the nucleus. The nucleus contains rod like structures which are known as chromosomes. The chromosomes come in 23 pairs (one from the father and one from the mother) and carry information about the size, shape and other genetic features inherited from the parents. Overall, they are responsible for the storage and transmission of genetic information from one generation to another.

2.3.1 Genetic inheritance
Chromosomes comprise of a series of proteins called deoxyribonucleic acid or DNA. DNA has a tendency to duplicate itself through a process, called mitosis. This feature enables chromosomes to copy themselves and produce new cells which have exactly the same pattern of genetic information. Each DNA carries thousands of genes across the length of the chromosomes (Berk, 2013). Genes are the basic units of hereditary transmission.
They trigger the production of proteins in response to environmental cues or other genes. These proteins lay the biological foundation for our physical characteristics. Since chromosomes come in pairs (one from each parent), the gene on one chromosome has an alternate or a partner on the corresponding chromosome. This alternate gene on the corresponding chromosome is referred to as an *allele*. The relationship between these alleles could be described as dominant or recessive depending on which of them is powerful than the other. The alleles of genes from both the parents and their interrelationship (i.e., when one allele gets dominant or recessive) determine the traits of the child. For example, the genes which regulate the color of the eyes may have dissimilar alleles specifying blue and brown eye color. However, if both the parents carry the blue-eyed allele, the dominant gene will express itself, resulting in the blue eyes of the child.

This implies that a combination of genes results in certain traits of the child. Luckily, many harmful traits are coded as recessive by the genes, which reduce the possibility of their genetic transmission (Berk, 2013). However, in cases, where both the parents carry the recessive allele for a certain harmful trait, it is likely that the child will carry that disorder. Yet, inheriting certain disorders from parents does not always lead to untreatable conditions. Rather, a supporting environment can play a significant role in helping the child to live a normal life.

### 2.3.2 Genes and environments

Contemporary researchers believe that genes (nature) and environment (nurture) interact to manipulate a child's development. This is because they often influence and get influenced from each other to form patterns of development (Keenan & Evans, 2009). For example, children's immediate environment is created by their parents. Since parents and children share rather similar genetic structure, it is likely that the environments which parents create for their children would support their genetic traits such as painting, playing soccer etc. Similarly, genes may have an evocative relationship with the environment which helps to reinforce certain inherited traits. For example, a socially active baby would draw positive attention from other people. As a result of these social exchanges, it is likely that the baby's genetic tendency is strengthened. Moreover, a child's genetic disposition urges him/her to find a compatible environment for himself/herself. For example, a child with a musical talent would be inclined to join the music/singing club at school etc. This tendency gets stronger as the child moves into adulthood and takes the charge of his/her own environment.

On the other hand, environment may also have a critical impact on genetic factors. For example, certain behavioral traits such as cognitive abilities etc change dramatically under supportive/unsupportive conditions. Similarly, different children react differently to their environmental circumstances (e.g., out of the two children coming from the
same deprived context, one child performs slightly better under supportive conditions, whereas the other one performs way better).

Overall, genes and environment continue to act upon each other to form behaviors and patterns of development. These influences are unique to each individual, caused by multiple factors and lead to multiple directions. This is why; even the identical twins living in the same context may develop some dissimilar traits.

### Check your knowledge/understanding

1. Which one of the following is the smallest unit?
   - a. chromosomes
   - b. DNA
   - c. genes
   - d. cells

2. Both of Ali’s parents have black hair. His hair is brown. How would you rationalize this difference?
   - a. mitosis
   - b. dominant-recessive genes
   - c. environmental factors
   - d. alleles

3. Contemporary researchers believe that the developmental behaviors are determined by:
   - a. biological factors
   - b. environmental factors
   - c. biological factors at birth and environmental factors throughout the life-span
   - d. a continuous interplay of biological and environmental factors

   **Answers:** 1. (c) 2. (b) 3. (d)

### 2.4 LIFE BEFORE BIRTH - PRENATAL DEVELOPMENT

Life before birth encompasses the time period between conception and birth. The development that takes place during this period is referred to as *prenatal development*. This time period has considerable influences on the well being of the child in later life. Generally, prenatal development comprises nine months which are further characterized by three periods including the zygote, embryo and fetus (Keenan & Evans, 2009).
The period of the zygote lasts for about the first two weeks of life before birth. It involves rapid multiplication of cells to form a complex being. The embryo marks the beginning of the third week and lasts until the end of the second month of pregnancy. It is characterized by the most rapid changes during prenatal period which set the stage for the development of body parts, structures and systems. The fetus is the longest prenatal period which starts from the ninth week and lasts till birth. It is characterized by immense physical growth and finishing. In particular, the brain's growth is at its peak.

Although the unborn baby has minimal contact with the outer world, a number of environmental factors may interfere with the prenatal development. These are discussed in the section below.

2.4.1 Environmental Risks - Teratogens
Any environmental agent which may affect and cause damage to the development of embryo or fetus during the prenatal period is referred to as teratogen (Berk, 2013). Teratogens involve a range of factors and vary in their severity. The possible damage caused by teratogens depends on different factors such as the amount and length of the exposure to a harmful agent, genetic structure and age of both the mother and the fetus, and other negative influences from the environment (Keenan & Evans, 2009). The possible effects of teratogens do not only include physical damages, but may also involve psychological consequences, developmental delays, and even death.

The most influential teratogens include a number of prescribed, non-prescribed and illegal drugs used during the prenatal period (Berk, 2013). An exposure to a prescribed or non-prescribed medication (e.g., aspirin) or illegal drugs (e.g., cocaine and heroin) during the prenatal period is a major threat to the embryo or fetus. It may result in physical deformities, system abnormalities, low birth weight, infant’s death around the time of birth, poor motor development and low intelligence levels.

Other critical teratogens include tobacco, alcohol or caffeine consumption by the expecting mothers. Their babies are at the risk of pre-mature birth, low birth weight and other physical defects. Besides, maternal health, diseases, age, exercise, nutrition, and emotional stress present prenatal complications which may have long-term negative consequences for the unborn child (Berk, 2013). Similarly, environmental pollution, and exposure to radiations and toxins etc can cause considerable harm to the developing fetus including physical deformities, brain damage, and cognitive deficits.

Overall, it is important for the expecting parents to evaluate and minimize the possible exposure to teratogens in order to ensure the safety of their unborn child.
Physical development in children is crucial since it provides them with the needed skills to explore and interact with the world around them. This section presents the course of physical growth and development in childhood. It also discusses the environmental factors which influence the physical development of children.

2.5.1 The course of physical growth
The course of physical growth includes changes in body size, proportions, muscle-fat makeup, and skeleton. It also includes gains in gross- and fine-motor skills (Berk, 2013).

i Changes in body size.
The most rapid changes in body size are observed during infancy. These changes are marked by an immense increase in the height and weight of the child. However, the growth rate slows down in early and middle childhood. While the first two years of life characterize rapid but decelerating annual growth trends, early and middle childhood follow slow but steady growth. A sharp increase in growth is again observed in early adolescence followed by a sudden decline when the adult growth is achieved.

ii Changes in body proportions.
As the body increases in size, different parts of the body grow at different rates and follow different patterns. Understanding these trends would help us to develop appropriate expectations of a child’s physical abilities at different age levels.

The first trend in the growth of the child highlights the ‘head to toe’ pattern. For example, a baby would learn to hold up his head way before he could walk. The next
pattern follows the 'inside to outside' or 'centre to outside' path. For example, the muscles around the trunk of the body grow stronger before the muscles in the hands, feet etc. Besides, growth also follows 'general to specific' and 'large to small' patterns of development during childhood.

**iii Changes in muscle-fat makeup.**
Muscle to fat ratio also changes during the course of physical development. While the body fat increases at a faster rate in infancy to help the baby keep a consistent body temperature, it is considerably reduced during early and middle childhood. Whereas, muscles build up at a much slower rate during infancy and childhood, when compared to the adolescence period, as they start to develop rapidly.

**iv Skeletal growth.**
Since children of the same age may grow and mature differently at different speeds, it becomes difficult to account for the causes and consequences of individual differences in physical development. Physical maturity is estimated by skeletal growth or age which specifies a measure of the development of body bones. It is based on the number of epiphyses (special growth centers which are present at each end of all long bones in the body) and the extent to which they are merged. This measure of an individual’s physical development helps to understand the causes and consequences of individual differences in physical development of children.

**v Changes in gross and fine motor skills.**
Gross motor involves all the big muscles in a human body. Gross-motor activities involve activities which require the use of big muscles and include crawling, walking, running, skipping and jumping. Children's gross motor skills experience considerable gains with the increase in body size, proportion, and muscle strength. The acquisition of motor skills is guided by the patterns similar to growth as described in section ii. For example, children will learn to move in a random fashion before they can make precise movements to achieve desired results (i.e., general to specific movement).

On the other hand, fine motor skills require a precise control of muscles and coordination of body movements to perform different activities such as drawing, writing, and cutting with scissors. With time and experience, children acquire a complex system of fine motor skills featuring a dynamic interplay of brain, body movement, motivational and contextual factors.

2.5.2 Environmental factors in physical development
Physical growth and development is dependent on both biological and environmental factors. While biological structure and hormonal influences play a central role in manipulating physical development; environmental influences such as nutritional intake, emotional well-being and cultural practices are also critical (Berk, 2013). Physical growth is highly dependent on nutritional intake, and opportunities for play and physical
activities. It is important that children do not only eat sufficient food, but also eat the right kind of food to maintain healthy physical growth and development. Besides, anxiety, fear and emotional deprivation may hinder physical development of children.

2.6 PHYSICAL CHARACTERISTICS OF LEARNERS
It is important to consider the physical characteristics of learners, since their physical needs influence the nature of instruction and learning environment. Although children who form an educational group at a school usually share similar physical attributes due to same age and rather similar socio-economic backgrounds, yet growth patterns and physical characteristics may vary with regards to gender and prior experiences. This section highlights the physical characteristics of the pre and elementary school children.

2.6.1 Children need to move
Children at the pre and elementary school level have an inherent need to move their bodies. It is, thus, difficult for them to remain static with little or no body movement while working on sedentary activities.

2.6.2 Improved eye-hand coordination
Eye-hand coordination, also referred to as visual motor integration skills, begin to develop during infancy. It controls the hand movement of a child guided by his/her vision. Although this coordination is not sophisticated during infancy, it reaches to the point of near independence during the pre-school years, and continues to improve through middle childhood.

Check your knowledge/understanding

6. An infant's ability to hold up his head before he could walk represents which of the following growth patterns?
   a. inside to outside
   b. general to specific
   c. large to small
   d. top to bottom

7. A dynamic system of motor skills indicates:
   a. an interplay of nature, nurture and motivational factors
   b. an interaction of genes and environment
   c. primarily genetic factors
   d. primarily environmental factors

Answers: 6. (d) 7. (a)
2.6.3 Improved body coordination
Balance and coordination are critical physical attributes which help the child to maintain a controlled body position while performing a task. While the pre and elementary school children show increased body coordination in high energy activities such as running, climbing etc, they can still fall easily. It is, thus, important to remain vigilant and ensure safety and injury prevention measures.

2.6.4 Improved perceptual abilities
Although the five basic senses are well-developed at birth, the child continues to develop perceptual abilities during pre and elementary school years. These improved abilities help the child to interact with the physical and social world in an effective way.

2.6.5 Improved gross and fine motor skills
The motor skill development follows the 'general to specific' growth pattern among children. Children tend to develop gross motors well in advance before they start to develop fine motor skills. Pre and elementary school children develop better upper body mobility and coordination. They continue to develop improved gross motor skills through age 7 and beyond. This results in refined fine motor skills for children which help them to manipulate sharp objects etc with greater precision. The development of fine motor skills is crucial for other activities which require increased physical controls and skills such as writing, painting, etc.

2.7 ACTIVITIES IN SCHOOLS
Physical activities play a critical role in developing the basic movement skills of children. Since it is difficult for children to work on sedentary activities for longer duration of time, this section presents some ideas about developing physical activities for children in the pre and elementary school years. These ideas can be modified and expanded in certain other ways to support the physical development of children.

2.7.1 Preschool and Kindergarten
Preschool children are generally aged between three to five years. At this age, children tend to develop sufficient control over their fine motor skills which help them to draw, write, copy shapes and engage in activities that require precise control of hand and body movement. Children at this age learn best through intrinsic interests and physical involvement.

Some traditional physical activities for this age level involve running, jumping, hopping, skipping, drawing, coloring, painting, cutting, pasting, gluing, using play dough, rollers, and shape cutters etc. However, teachers, caregivers or parents can certainly extend this network in some non-traditional ways. This may involve using outside play as a reward for children, free play days, dramatic play, role play, sand, wet mud or clay play, collage, cooking, building and relaxation (e.g., stretching, breathing in and breathing
out, closing eyes) activities etc. Besides, manipulative activities (e.g., lego, science experiment with magnets) and musical, group and movement activities (e.g., locomotors movements which involve children rapidly moving from place to place, non-locomotors movements which involve children performing while keeping stationary, and manipulative movements which involve children using their body parts to manipulate an object) may provide excellent opportunities for a healthy physical development.

Overall, physical activities that are meaningful and enjoyable are more likely to produce positive learning outcomes among young children. Such activities lay the foundation for many other skills such as literacy, numeracy, creativity, and emotional stability which are needed in later years.

2.7.2 Elementary Level

The school age children continue to develop their gross and fine motor skills. With this refinement, they become adept at activities which require precise hand and body control, for example, writing. Daily physical activities should be incorporated into the school routine of elementary school children to maintain active physical development. This can be done in different ways, for example, introducing health and physical education classes and integrating physical activities into other areas of curriculum.

Besides physical education classes, there are many other ways in which teachers can engage students in physical activities. These include, for example, allocating some time for physical activity on daily basis, incorporating concepts from other areas of curriculum into physical activity time and vice versa, and providing children with hands-on experiences as much as possible (e.g., rather than teaching them the concepts of living and non-living things within the four walls of classroom, taking them out on a school round and helping them understand the concept from their surroundings). Moreover, physical activities described in section 2.5.1 can also be effectively used for elementary school children by adding consistent yet realistic challenges. For example, the sequential patterns for locomotor movements can be made more complex as the child learns to coordinate and control his body movements.

The overall goal of such activities should be to make children move their bodies at a moderate or rigorous level of intensity for at least 20 minutes during the school time. Some educationists also argue that engaging students in effective physical activities at elementary school is likely to have a positive impact on their overall health and well-being during adulthood by incorporating a life-style change.
2.8 SELF-ASSESSMENT QUESTIONS

1. How do genes and environment act upon each other to form patterns of physical growth and development? Illustrate with examples.

2. Create your own family medical or health tree to help you understand your genetic tendency toward certain diseases and traits. Consult internet to find out how to create a family medical or health tree (e.g., you may create an online 'My family health portrait' by accessing https://familyhistory.hhs.gov/FHH/html/index.html)

3. Make an exhaustive list of teratogens which may interfere with the prenatal development?

4. Discuss the course of physical growth in early childhood.

5. Design a physical education lesson plan for Grade 1 children. Your plan should include the following components: objectives (both general and specific), time allocated, materials/equipment needed, introduction/warm up, description of the physical activity, closure/cool down, and safety considerations.

2.9 BIBLIOGRAPHY


# Unit-3

## INTELLECTUAL DEVELOPMENT

### 3.1 OBJECTIVES

At the end of this unit, students will be able to:

1. discuss intelligence and how is it measured
2. discuss theories of multiple intelligences
3. review the controversies and issues in intelligence
4. understand the intellectual characteristics of learners
5. work out activities relevant to children's intellectual development at pre and elementary school level

### 3.2 OVERVIEW

Cognition is the study of the thought processes or activities of human mind which lead to the acquisition of new knowledge and skills. It includes all types of mental processes such as attending, thinking, visualizing, imaging, creating, and problem solving to name a few. Human cognition is an extensively large area of study which includes an array of topics such as memory, attention, social cognition, reasoning, and problem solving.

While cognition is the process of thought or knowing, intelligence refers to the process of applying that thought or knowledge into real life. In this way, intelligence involves both the process of assimilating knowledge (cognition) as well as the ability to apply knowledge. This is why some psychologists tend to encompass cognition within intelligence. However, the use of these terms varies across disciplines as well. For example, a cognitive scientist would refer to cognition from an information processing perspective, whereas a social psychologist would refer to the same process as social cognition. The terms cognition and intelligence are also used synonymously. However, although cognitive abilities (e.g., thinking, problem-solving) and intelligence are closely linked, they are not exactly the same. Cognitive abilities can be trained and improved under certain conditions, whereas intelligence generally refers to a relatively fixed and measurable trait. Overall, cognition emphasizes the mental processes, for example, thinking etc; whereas, intelligence refers to the product of mental processes.

This unit specifically focuses on intelligence and intellectual development in children. There are several explanations about how does cognitive development occur in children (e.g., Piaget's cognitive developmental theory, Vygotsky's socio-cultural theory, information processing approach), which emphasize the processes rather than the product of thinking. However, the psychometric approach to cognitive development emphasizes the products of mental processes, such as, intelligence and its scores.
This unit introduces us to the concept of human intelligence, how is it measured, and how does intellectual development occur from infancy to childhood. It also examines the intellectual characteristics of learners and float some ideas about how can we engage children in age-appropriate activities to support their intellectual development.

3.3 DEFINITION OF INTELLIGENCE

The term *intelligence* has been described differently by different experts with little agreement over what factors or dimensions comprise its structure (Berk, 2013; O'Donnell, Reeve, & Smith, 2012; Woolfolk, 2014). This is because it is an abstract and broad concept which is not directly measurable like some other human traits such as height, weight etc.

Generally, intelligence is thought of a combination of different attributes, for example, the ability to solve problems and adapt and learn from experiences, creativity, and interpersonal skills. Although many experts agree that intelligence has several characteristics, there is a little consensus about the nature of these characteristics. Similarly, some agree that these characteristics are closely related to each other; whereas others argue that they are distinct features. Besides, some view intelligence as a single capacity while other believes that it is a collection of loosely related abilities. These varied beliefs have influenced the theoretical positions as well as the measures of intelligence.

3.3.1 Theoretical positions

There is a continuous debate among psychologists about whether intelligence is composed of a single capacity or a number of specific capacities. Spearman suggested that there is a general ability or intelligence (*g*) which is responsible for an individual's overall success in different tasks. For example, people who have good memory and information processing mechanisms are likely to perform better at problem solving tasks. Overall, general intelligence includes abstract thinking or reasoning, the capacity to acquire new knowledge and problem solving ability. However, other theorists argue that individuals have more than one specific ability, and thus view intelligence as multifaceted.

i. **Triarchic theory of intelligence.**

Robert Sternberg proposed that intelligence is composed of three basic components including analytical, creative and practical components. The analytical component deals with a person's ability to solve problems by analyzing ideas and thinking critically. Creative intelligence refers to the ability to combine different ideas to form something novel by thinking outside of the box. Whereas, practical intelligence involves applying knowledge and skills into different kinds of environment. Based on the triarchic theory of intelligence, Sternberg further argued that successful intelligence brings success to one's life within one's own goals and contexts.
ii. **Gardner’s theory of multiple intelligence**

In contrast to the view that intelligence is composed of a single or a small number of overarching abilities, Howard Gardner suggests that an individual may exhibit several types of intelligences. He categorized these intelligences into eight identifiable forms and argues that there could be possibly more than these forms. His list of intelligences includes the following: logical-mathematical, linguistic, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal and naturalistic. This is further elaborated in Table 3.1 as follows.

**Table 3.1**

Gardner’s Multiple Intelligences

<table>
<thead>
<tr>
<th><strong>Intelligence</strong></th>
<th><strong>Characteristics</strong></th>
<th><strong>Related activities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical-mathematical</td>
<td>Ability to understand and use numerical patterns, mathematical operations, reasoning and logic</td>
<td>Experimenting, calculating, solving logical puzzles etc</td>
</tr>
<tr>
<td>Linguistic</td>
<td>Ability to acquire and use functions of language, express oneself and comprehend others</td>
<td>Reading, writing, playing word games, listening to and telling stories etc</td>
</tr>
<tr>
<td>Spatial</td>
<td>Ability to understand, recognize and manipulate patterns, spaces and objects</td>
<td>Navigating, designing, visualizing, drawing, solving jigsaw puzzles etc</td>
</tr>
<tr>
<td>Musical</td>
<td>Ability to appreciate and use the components of music</td>
<td>Singing, creating tunes, humming etc</td>
</tr>
</tbody>
</table>
Gardner's theory of multiple intelligence has been warmly received in the educational community since it gels well with the notions of individual differences among learners and teacher's experiences about how children learn (Woolfolk, 2014). However, it is criticized that there is a lack of a specific criterion as well as empirical evidence to support the conceptualization of intelligence by Gardner.

### iii. Emotional intelligence.
Both Gardner and Sternberg emphasize the abilities to understand one's own self and others (e.g., interpersonal, intrapersonal and practical intelligence). Contemporary theorists show considerable interest in students' emotional intelligence which enables them to understand emotions and emotional knowledge, express emotions appropriately, monitor their own and other's emotions and feelings, and allow emotions to guide their thinking and actions. However, they are criticized for broadening the concept of intelligence without adequate research based evidence.

#### 3.3.2 Issues and controversies
One of the greatest controversies in the area of educational and developmental psychology is whether intelligence is an inherited ability (nature) or whether it can be developed by an individual's personal and contextual experiences (nurture) (see O'Donnell, et al., 2012)? Early psychologists view intelligence as an inherent and fixed
capacity which cannot be altered. This view is referred to as an entity view of intelligence. However, others argue that context plays an important role in developing intelligence and it can be improved with practice and a supportive environment. This view is known as the incremental view of intelligence. The incremental view of intelligence is popular with the teachers and educationists, who believe that students' intelligence and performance can be improved under supportive circumstances.
3.4 MEASUREMENT OF INTELLIGENCE

A number of standardized tests have been used to measure intelligence. Although these tests give information about a rather narrow range of an individual's capabilities, they are popular with psychologists and educators because they provide a reasonably fair picture of future success. Generally, intelligence tests have been divided into two broad categories, including the individual and group intelligence tests (see Berk, 2013).

3.4.1 Individual intelligence tests

The Stanford-Binet test and the Wechsler scales are the two most commonly used individual tests to measure intelligence.

Alfred Binet constructed a measure of intelligence in response to the French government's call in 1904. He developed the concept of mental age (MA) which represents a child's mental development in relation to the other children. His test consisted of 30 items to assess mental processes and behaviors. Later, in 1912, William Stern introduced intelligence quotient (IQ), which represents an individual's mental age (MA) divided by chronological age (CA) multiplied by 100.

Binet's test has been revised and adapted several times. In 1916, it was adapted for use with the English speaking children at the Stanford University, and named as the Stanford-Binet Intelligence Scale. The latest version of Stanford-Binet Intelligence Scale takes into account general intelligence along with complex mental processes including fluid intelligence, knowledge, quantitative reasoning, visual-spatial processing and working memory. This test is successfully conducted with individual ranging from 2 years to adulthood. A special version of the test, named, the Stanford-Binet Intelligence Scales for Early Childhood, includes less items with verbal and non-verbal mode of testing for children aged between 2 to 7.3 years.

Another commonly employed intelligence test is called the Wechsler Intelligence Scale for Children IV (WISC-IV). It targets the children aged between 6 to 16 years and offers a measure of both general intelligence as well as other intellectual factors such as verbal reasoning, perceptual reasoning, working memory and processing speed. Besides, an age-appropriate version is also available for children aged between 2.6 years till 7.3 years, and is referred to as the Wechsler Preschool and Primary Scale of Intelligence- III (WPPSI-III).

Furthermore, aptitude and achievement tests are also used as indicators of an individual's intelligence. Aptitude tests refer to the person's potential to perform a particular task in future, whereas achievement tests assess the actual knowledge and skill of the person. While the above mentioned tests provide appropriate measures for children and adults, there are special tests which are designed to measure the infants' intelligence as well.
These include, for example, the Bayley Scales of Infant and Toddler Development. These scales are suitable for use with infants as young as one month old up to 3.5 years.

3.4.2 Group intelligence tests

A rather quick and cost-effective way of measuring students' intelligence is to conduct the test in a group. This helps to reduce the related expenses and saves time. There are tests that are specifically designed for this purpose, for example, the Lorge-Thorndike Intelligence Test and the Otis-Lennon School Ability Test (OLSAT).

However, group intelligence tests should be used with caution since they have certain limitations. For example, they do not allow the examiner to develop rapport and determine the students' level of anxiety. It is generally suggested that the scores obtained from group intelligence test should be supplemented with the information from other sources.

### Check your knowledge/understanding

1. The ability to adapt and learn from one's experiences is referred to as:
   a. wisdom
   b. intelligence
   c. creativity
   d. adaptability

2. Ali's mental age is 12, whereas his chronological age is 10. What would be his intelligence quotient IQ?
   a. 100
   b. 110
   c. 120
   d. 130

3. Both Sternberg and Gardner argue that:
   a. intelligence is a general ability
   b. there are three types of intelligence
   c. intelligence is exhibited by several specific abilities
   d. intelligence is composed of a single capacity

Answers. 1. (b) 2. (b) 3. (c)

### 3.5 INTELLECTUAL DEVELOPMENT FROM INFANCY TO CHILDHOOD

Children gain cognitive maturity as they age. With time and experience, they advance their thinking skills and make transitions from simple to complex cognitive processes which add to their intelligence as well. This section emphasizes the processes (cognition) rather than the products of mental activities (intelligence). It examines how
do children make cognitive and intellectual advancements from infancy to childhood. In doing so, it also highlights the cognitive characteristics of learners at different periods of time.

3.5.1 Piaget’s theory of cognitive development

Piaget believed that children’s cognitive development progresses through four stages which involve sensori-motor, preoperational, concrete operational, and formal operational periods. These stages are treated as fixed and universal and represent a general sequence which is observable in all types of cognitive change.

Piaget argued that children’s thinking and the ways through which they make sense of their experiences (schemes) change with age. The infancy period is marked by sensori-motor action patterns during which a child acts on the objects around him/her to form schemes. Soon, he/she begins to form mental images which help to transform thinking and experiences into meaningful, manageable and memorable patterns. This transformation in thinking is supported by two critical processes including adaptation and organization. Adaptation involves the process of developing schemes by directly working upon the environment through assimilation or accommodation. However, if the balance between these two is disturbed, it causes a cognitive conflict or disequilibrium within the minds of children. It is important to resolve the conflict through either assimilation or accommodation to bring the mind back to the equilibrium state. These resulted in developing more effective schemes that help the child to advance his/her thinking.

i. The sensori-motor stage.
The sensorimotor stage is characterized by the first two years of life during which infants think through their five senses. At the beginning of this stage, the sensory reflexes of the child serve to make up for his/her intelligence. The child engages in circular reactions (repeating chance behaviors) which help him/her to adapt to his/her surroundings. Later, the child deliberately employs intentional or goal directed behaviors by coordinating different schemes to solve simple problems. Object permanence (the ability to understand that objects exist even when they are not seen) emerges towards the end of this period which helps to set the stage for mental representations and engages the child in make-believe play.

ii. The preoperational stage.
As children grow, they enter in the preoperational stage (2 to 7 years) which characterizes their immense representational or symbolic capacities. Children make advancements in their mental representations as they develop more effective schemes. For example, as they get past the first two years of their life, their make-believe play gets more sophisticated. This cognitive change is seen when a child older than 2 years of age pretends to use an object (cup) in different ways, for example, using it to drink water as well as using it as a hat. Similarly, children’s drawings get more mature, realistic and detailed during the preschool years. However, their expanding cognitive capacities are limited by their inability to take into account someone else’s perspective, referred to as egocentrism.
iii. The concrete operational stage.
The *concrete operational stage* extends from 7 to 11 years. As the children enter the middle childhood, they accomplish a number of cognitive advancements. For example, children at this stage perform mental operations that follow logical rules. They are capable of thinking in more than one direction and are capable to see a problem from different angles (*decentration*). Consequently, they understand that certain characteristics remain the same even if they change the outward appearance (*conservation*). Their understanding of space is more precise when compared with the preschool children. They are capable of developing logical hierarchies and classification systems and can perform reversible actions which demonstrates that the children have now developed logical, flexible and organized schemes than before.

iv. The formal operational stage.
Children develop the capacity for an abstract and systematic thinking around 11 years of age. Piaget referred to this stage as *formal operational stage*. While the children can perform operations with the real objects at the concrete operational stage, they are now ready to perform mental, abstract operations without any concrete things or events. The main features of this stage include *hypothetical-deductive reasoning* and *propositional thought*. These abilities refer to the children's capacity to form and evaluate logical propositions without referring to the real world circumstances and systematically reaching a conclusion. Accompanying this stage, comes the individual's desire to get noticed, often referred to as *adolescent egocentrism*. This is a heightened self-consciousness phase in which the growing adolescents tend to believe that others are interested in them in the same way as they are themselves. This state causes irresponsible and uncontrolled behaviors often leading to suicide attempts, negative thoughts, and drug use etc.

Although Piaget's theory presents a comprehensive explanation of how does cognitive development occur in children as well as highlights the characteristics of learners at different stages of cognitive development, it has not gone without criticism. One of the major arguments raised against Piaget's theory is that he has underestimated the role of culture, language, and environmental influences while explaining children's cognitive development. The next section presents Vygotsky's socio-cultural approach which takes into account these important influences.

3.5.2 Vygotsky's socio-cultural theory
Lev Vygotsky's socio-cultural approach builds upon the role of language and cultural tools in shaping up human cognition and development. He believed that the cultural influences, such as language, instruction, and social interactions etc have a profound influence on children's cognitive advancements. He introduced the concepts of the *zone of proximal development* (ZPD) and *scaffolding* to demonstrate how do children move from one to another level of cognitive progress. ZPD refers to certain cognitive abilities that are in the process of developing, and that can be achieved with support from an adult or a capable peer. Whereas, scaffolding allows to adjust level of support according to the learner's needs and performances. While Piaget focused on the individual learners with a strong emphasis on the stages through which they pass during cognitive
development, Vygotsky argued that social interactions, cultural tools and collaborative processes set the stage for higher level cognitive processes.

### 3.5.3 Information processing approach

Information processing approach presents another major perspective which helps us to understand cognitive development. This approach views human brain as an active information processing system, like a computer machine. It examines how does information enter a human mind, and how is it stored, processed and retrieved when needed. It emphasizes two major cognitive processes including memory and thinking. Overall, it is argued that children develop and refine their mechanisms to acquire, process, store and work with increasingly complex information and skills over time. In doing so, they develop improved cognitive resources, that is, the capacity and speed of processing information. This improved ability is further linked to better memory and problem solving skills.

#### Check your knowledge/understanding

4. According to Piaget, when do children start to exhibit object permanence?
   a. sensorimotor stage
   b. preoperational stage
   c. concrete operational stage
   d. formal operational stage

5. What distinguishes the concrete operational from the formal operational?
   a. The adolescents’ ability to differentiate b/w the real and possible
   b. The adolescents’ ability to represent something
   c. The adolescents’ ability to reverse his/her thinking
   d. The adolescents’ ability to conserve something

6. A teacher asks a class of fifth-graders to imagine how they would walk home if their usual route were blocked and they had to take another route. Students are asked to draw a map depicting how they would arrive home. This activity demonstrates students’ ability to:
   a. seriate
   b. reverse their thinking
   c. classify events
   d. test hypothesis

7. Which of the following is the best example of scaffolding?
   a. giving a detailed lecture
   b. asking students to write a research paper
   c. providing students with a variety of equipments to learn
   d. reminding students of important steps during problem solving

Answers: 4. (a) 5. (a) 6. (b) 7. (d)

### 3.6 ORGANIZATION OF RELEVANT ACTIVITIES IN THE CLASSROOM AT THE FOLLOWING LEVELS

A variety of experiences affect the development of cognition among children. This section reviews some activities that can be used to support children’s cognitive development.
3.6.1 Preschool and Kindergarten
The preschool and kindergarten children have more flexible action patterns. Play, at this stage supports the cognitive development of children. Preschool and children up to the first or second grade at school can be engaged in different types of play to support their cognitive development. These include, for example, object play (e.g., building objects with blocks), pretend play (role plays e.g., teacher), social play (e.g., using different objects for different purposes), and locomotor play (e.g., playing tag in which children run after each other). Besides, hands-on activities (e.g., cutting out alphabets, conducting simple science experiments, counting with the paddle-pop sticks) are critical in developing advanced thinking and cognition. It is important to frequently use concrete props or visual aids with the preschool and kindergarten children to help them learn. Overall, children's learning experiences should include a variety of opportunities including both in-class and out of class activities to facilitate the process of cognitive change.

3.6.2 Elementary Level
Children's cognitive development undergoes rapid changes during the early years of school. A number of activities and strategies may help the elementary school child to make cognitive progress at this stage. These include, for example, allowing children to experiment, encouraging discovery learning, reading with the children, encouraging them to share ideas and opinions, asking them to make comparisons, classify and categorize objects, things or events, engaging them in the drama and role playing, and asking them to justify their answers and actions. Moreover, since children have different intellectual demands, it is important to engage them in individual or small group activities according to their interests, for example, a portfolio or a group project.

3.7 SELF-ASSESSMENT QUESTIONS

1. Are you intelligent by nature or is your intelligence influenced from nurture? Justify your opinion with reasons.

2. What are the limitations of using group intelligence tests?

3. How does children's logical thinking develop across the following stages of Piaget's theory: preoperational, concrete operational and formal operational stage?

4. What would you do to help the preoperational child with his egocentrism?

5. Have you ever taught someone (e.g., a younger sibling or a nephew/niece)? How did you provide social guidance and scaffolding to him/her? How is the scaffolding provided by you similar or different to the one explained by Vygotsky?
3.8 REFERENCES

Unit–4

SOCIAL DEVELOPMENT

4.1 OBJECTIVES
After reading the unit the students will be able to:
1. Define social development
2. Describe the meaning, nature and importance of social development
3. Explain various social development theories
4. Describe the characteristics of learners at preschool, kindergarten and elementary level
5. Describe various learning activities which can be provided at preschool, kindergarten and elementary level

4.2 OVERVIEW
In this unit you will learn about social development and various theories related to it. You will also learn the characteristics of learners from preschool to elementary level and variety of classroom activities, which can be held by the teacher to promote social skills among the learners.

This is important to note that social development is closely associated with emotional development and these two aspects of development are frequently termed as socio-emotional development. It means that both of the developments occur simultaneously. In present unit we will discuss the social development and the next unit will provide a review of emotional development.

4.3 CONCEPT OF SOCIAL DEVELOPMENT
Social development is an important aspect of child development. It is the ability to form positive and pleasing relationships with others (Cohen and others 2005). Social development includes learning the values, knowledge and skills that enable children to relate to others effectively and to contribute in positive ways to family, school and the community. This kind of learning is delivered on to children by three means: directly by parents and teachers; indirectly through social relationships within the family or with friends, and through children’s participation in the culture around them. Through their relationships with others and their developing awareness of social norms, values and expectations, children construct a sense of identity (who they are). As children develop socially, they not only learn how to react appropriately in variety of situations but also play role in shaping their relationships.
The development of the social and emotional health of a child is important for the development of his appropriate (right) behavior, understanding of life and shift to adulthood. Social emotional development helps shape a child into what he will become later in life by teaching proper reactions to emotional matters. Social skills are all about a child's ability to cooperate and play with others, paying attention to adults and teachers, and making reasonable transitions from activity to activity. Emotional development is the process of learning how to understand and control emotions.

Before we move further, stop for a while and think:

| What is my definition of social development? |

### 4.3.1 Social Development: Why is it important?

Human beings are naturally social. Developing skills in this domain increases child’s capacity to be successful at school and in social life. Development in social skills enhances mental health, success at work, and the ability to be a useful citizen.

Social skills include various abilities such as communication, problem-solving, decision making, self-management, and peer relations. These skills enable an individual to build and maintain positive social relationships with others. Extreme social behaviors interfere with learning, teaching, and the classroom’s organization. Social competence is related to peer acceptance, teacher acceptance, present success, and future (post school) success.

If a child does not display appropriate social skills, other children don't like him and will not make friends with him. Sometimes children work hard to display the new and better behaviors they've been told to show, but are still excluded by others, perhaps due to past reputation or maybe because others don't like the newly learned behaviors which don't seem "natural." At other times, students may still fail because they have difficulty monitoring and controlling their behavior when unexpected reactions occur. Teachers can help students how to cope with such social problems and develop adjustment ability in the circle.

The social contexts in which children live have important influences on their development. According to Bronfenbrenner, three of the contexts in which children spend much of their time are families, peers, and schools.

Dear students please reflect:

| How your contexts have influenced your social development? Describe |
4.4  THEORIES RELATED TO SOCIAL DEVELOPMENT

There are various theorists who have given an insight into social development. In the following section you will have a brief introduction of the theories related to the socio-emotional aspect of child development.

Attachment theory by John Bowlby (1907-1990)

Edward John Mostyn Bowlby was a British psychologist, psychiatrist, and psychoanalyst, renowned for his interest in child development and for his innovative work in attachment theory. According to Bowlby’s Attachment Theory, attachment is a psychological bond between humans. It lasts for a long period of time. To Bowlby, because of attachment a baby remains connected to his mother. An infant’s attachment to a caregiver works as the basis for all future social development (Gilovich, Keltner & Nisbett, 2006).

Mary Ainsworth (1913-1999)

Mary Dinsmore Salter Ainsworth was an American child development psychologist. She is known for her work on emotional attachment of infants to their caregiver. She worked with John Bowlby in development of Attachment Theory. Ainsworth found four different categories of attachment: securely attached, avoidant-insecurely attached, anxious-ambivalently attached and disorganized-disoriented attached. According to Ainsworth, the attachment patterns which are developed in infancy and toddlerhood remains fairly established throughout the lifetime. So it is important for parents and teachers to focus on the attachment aspect in order to help child to develop
positive social relations in future.

**Erik Erikson (1902 - 1994)**

Erikson provided another important theory related to social development. His psychosocial theory of personality development has eight stages starting from infancy to old age. Erikson emphasized the relationship between the social and emotional domains. He highlighted the importance of interpersonal relationships which play an important role in an individual's life in resolving a series of conflicts. In infancy, the conflict is Trust versus Mistrust. Erikson hypothesized that an infant will develop trust through interaction with a warm, accessible, and responsive caregiver or the infant will develop mistrust through interaction with a negative or unresponsive and unavailable caregiver. Consequently, it is this development of trust in infancy that helps an individual to succeed in the next stage of toddlerhood called Autonomy versus Shame and Doubt. If he has the base of trust in a caregiver developed in the first stage, the child is more likely to develop a sense of his independence and control over his own behavior and environment. The next two stages, the development of Initiative versus Guilt and Industry versus Inferiority are particularly critical for teachers. Early childhood is often the age when children first begin their participation in formal education. Children must learn to integrate their interest in personal exploration and the use of their imaginations with working with others involved in the same task. For elementary aged children, the task of integrating personal interests and needs with those of others becomes even more complex. They must learn to follow rules and “get things right”. Moreover, they have to learn to understand the perspective of others and work with others in group projects. Deficiencies at any of these stages may lead to inability of children to take action on their own and/or developing a sense of inferiority, unproductiveness, and feelings of incompetence in regards to their peers and their social roles and abilities.

**Early Social & Moral Development**

![Erikson's Stage Theory in its Final Version](image-url)
Lev Semyonovich Vygotsky (1896 - 1934)

Lev Semyonovich Vygotsky was born in Western Russia (Belorussia) in 1896. He is a well-known theorist in the areas of social development and education. He claimed that cognitive functions are linked to the external (or social) world. Adults and more competent peers guide a child into the social world. Vygotsky explained that children learn in a systematic and logical way as a result of dialogue and interaction with a skilled helper within a zone of proximal development (ZPD). It has two boundaries. The lower boundary of the ZPD is activities the learner can do independently without the help of a teacher or guide. Similarly, the upper limit of the ZPD is those learning outcomes that the learner could not achieve at this time even with the assistance of a competent teacher or mentor.

Scaffolding is another concept for guiding learning presented by Vygotsky. Scaffolding is the process by which the teacher continuously changes the level of support given to the learner as the learning needs change. A teacher who is engaged in scaffolding has to be involved at every step of instruction. Teacher gradually decreases the support provided to the child while learning a skill. As he observes that the child can perform the skill independently, he stops assisting the child. Both of these concepts are important in describing how a child becomes socially competent.

Albert Bandura (1925)

Albert Bandura was born on December 4, 1925 in the province of Alberta, Canada. He has done a great deal of work on social learning and is famous for his "Social Learning Theory" (renamed as "Social Cognitive Theory"). According to Bandura, development of social competence depends on three kinds of factors: (1) Behaviors children and adults observe within their home or society (2) mental factors such as a student’s own expectations of success, and (3) social factors such as classroom and school climate. Bandura’s reciprocal determinism model indicated that
these three factors are mutually related. Each factor affects others equally and changes in one factor will result in changes in the others. In the classroom, for example, a child's beliefs about himself and his competence (self-efficacy) can affect social behavior which, in turn, will have an impact on the classroom environment. At the same time, changes in the classroom that lead to a change in competence will have an impact on self-efficacy.

**Urie Bronfenbrenner (1917-2005)**

A Russian American psychologist, Urie Bronfenbrenner was born on April 29, 1917. He is well-known for his Ecological System Theory which presented view about the impact of the environment on human development.

---

**BRENOWNBRENNER'S (1979) ENVIRONMENTAL ECOLOGICAL THEORY**


**Source:** [https://blogg.hioa.no/rmmalambo/2012/03/21/a-holistic-approach/](https://blogg.hioa.no/rmmalambo/2012/03/21/a-holistic-approach/)
Ecological theory stated that people develop within a series of environmental systems. At the base is Micro-system, which includes home, family, neighborhood and school where the individual spends a large part of his time. According to Bronfenbrenner, the school and the classroom represent an important micro-system of social development for children. Meso-system functions as interconnections between the micro-systems. Exo-system involves links between a social setting in which the individual does not have an active role and the individual’s immediate context. For example, a child’s experience at home may be influenced by the parents’ experiences at work. Macro-system describes the culture in which individuals live. Cultural contexts include developing and industrialized countries, socioeconomic status, poverty, and ethnicity. Chrono-system is the deriving of environmental events and changes over the life course, as well as socio-historical conditions.

Bronfenbrenner’s work advocates the importance of communication and partnership between the family and school in a child’s social development.

4.5 MAIN POINTS
Dear student in this section you have been introduced to various theories of social development. We can summarize:

Social development of child depends upon many factors; attachment to mother or caregiver, development of healthy interpersonal relationships, interaction between child and some competent adult, observation and internalization of social behaviors and various ecological systems surrounding the child.

A teacher must have the knowledge of all such factors which affect the socio emotional development of a child.

After reading the topic, think and reflect:

What is your observation of social development at various stages of life?

4.6 CHARACTERISTICS OF LEARNERS AND CLASSROOM ACTIVITIES TO PROMOTE SOCIAL SKILL
This section will deal with description of salient features of learners at various stages and the classroom activities a teacher can use to develop social skills at particular level. Learners possess certain characteristics at a particular stage of social development. It is important for a teacher to have knowledge of learners’ characteristics in order to deal effectively with them. Teacher can facilitate the students to adjust in their social circle by teaching them social skills essential to build positive relationships.
First of all we will discuss what social skills are.

4.6.1 What Are Social Skills?
Social skills are ways of dealing with others that create healthy and positive interactions. Children who have social skills can communicate clearly, calmly, and respectfully. They show consideration for the feelings and interests of their peers. They take responsibility for their actions, are able to control themselves, and are able to assert themselves when needed. Children learn social skills through experiences with peers, examples and instructions from their parents, and time with adults.

It is important for children to use social skills because they are the route to creating and developing relationships. They are needed for enriching social experiences, and they lessen the chance for negative interactions. Being the building blocks for friendships, social skills give children the chance to learn from their peers and learn how to be considerate with those they meet in the future. By having a positive impact on life experiences, social skills also give children a sense of confidence and mastery over their environment.

The following section presents features of social development possessed by the learners at different levels.

4.6.2 Social Characteristics of children at various stages of development
A young child’s social life evolves in relatively predictable ways. The social network grows from an intimate relationship with parents or other guardians to include other family members, nonrelated adults and peers, social interaction extends from home to neighborhood and from nursery school to formal school.

Becoming familiar with the way children grow and develop and the basic characteristics of children of different ages permit a teacher to better understand and plan for their growth. In the following section social characteristics and hallmarks of children from preschool to elementary are summarized.

4.6.3 Social characteristics of Preschool children
At this age, kids do not have the ability to understand other people’s emotions or perceptions. They are in their own world and the world is seen only through their eyes alone. They are egocentric; however, the adults in their lives still have a major influence on them. They are beginning to show their independence and capabilities. At this age, they are also eager to meet and play with new kids but may not know how to approach them due to shyness or fear of rejection. There are preschoolers who prefer to play on their own, which is why parents and teachers need to encourage them to make an effort to play in a group with other kids of their age.
Social characteristics of preschoolers can be summarized as:
- Becoming more social
- Moving from parallel play to associative play. Does joint activities
- Helpful mainly because of interest in matching words to actions
- Beginning of independence
- By four growing sense of initiative and self-reliance
- Becoming aware of basic gender identity
- Imaginary play mates not uncommon

**Factors effecting social development at preschool level**

Research findings indicate that there are various factors, which contribute towards socio-emotional development during the preschool years. These factors are discussed in the following section:

1. **Peer relationships**

   During the preschool years, peers (other children who are a child’s equal) begin to play an important role in children’s social and cognitive development. Children’s relationship with other peers differs in several ways from their interactions with adults. Peer play allows children to interact with other individuals whose level of development is similar to their own. When peers have dispute among themselves, they must make a concessions and must cooperate in resolving them if the play is to continue; in a peer dispute no one can claim to have ultimate authority. Peer conflicts also let children see that others have thoughts, feelings and viewpoints that are different from their own. Conflicts also heighten children’s sensitivity to the effects of their behavior on others. In this way peer relationships help young children to overcome the geocentricism that Piaget described as being characteristic of preoperational thinking.

2. **Pro-social behavior**

   Pro-social behaviors are voluntary actions towards others such as caring, sharing, comforting and cooperation. Research on the roots of pro-social behavior has contributed to our knowledge of children’s moral as well as social development. Several factors seem to be associated with the development of pro-social behaviors (Eisenberg & Mussen, 1989). These include the following:
   - Parental disciplinary techniques that stress the consequences of the child’s behavior for others and that are applied within a warm, responsive parent-child relationship. (Hoffman, 1993)
   - Contact with adults who indicate they expect concern for others, who let children know that aggressive solutions to problems are unacceptable, and who provide acceptable alternatives. (Konig, 1995)
   - Contact with adults who attribute positive characteristic to children when they do well (Grusec & Goodnow, 1994)
iii. Play

Most of a preschooler’s interaction with peers occurs during play. However, the degree to which play involves other children increases over the preschool years. In a classic study of preschoolers, Mildred Parten (1932) identified four categories of play that reflect increasing levels of social interaction and sophistication. **Solitary play** is play that occurs alone, often with toys, and is independent of what other children are doing. **Parallel Play involves** children engaged in the same activity side by side but with very little interaction or mutual influence. **Associative Play** is much like parallel play but with increased levels of interaction in that form of sharing, turn taking, and general interest in what others are doing. **Cooperative play** occurs when children join together to achieve a common goal, such as building a large castle with each child building a part of the structure. Children engage in more complex forms of play as they grow older, advancing from simple forms of play to complex pretend play in which children cooperate in planning and carrying out activities.

Play is most important for children because it exercises their linguistic, cognitive, and social skills and contributes to their general personality development. Children use their minds when playing, because they are thinking and acting as if they were another person. When they make such a transformation they are taking a step toward abstract thinking in that they are freeing their thoughts from a focus on concrete objects. Play is also associated with creativity; especially the ability to be less literal and more flexible in one's thinking. Play has an important role in Vygotsky’s theories of development because it allows children to freely explore ways of thinking and acting that are above their current level of functioning. Vygotsky wrote, “in play a child is always above his average age, above his daily behavior; in play it is as though he were a head taller than his self”.

Preschoolers’ play appears to be influenced by a variety of factors. For instance, preschoolers’ interactions with peers are related to how they interact with their parents. Three year old who have a warmed nurturing relationships with parents are more likely to engage in social pretend play and resolve conflicts with peers than are children with less secure relationships with their parents. Children also play better with familiar peers and same sex peers. Providing age appropriate toys and play activities can also support the development of play and peer interaction skills.

**Summary:**

Dear students, in this section we have discussed the types and importance of play in social development of children. We can summarize:

- Play is important for healthy development of children.
- Solitary play is play that occurs alone, often with toys, and is independent of what other children are doing.
- Parallel Play involves children engaged in the same activity side by side but with very little interaction or mutual influence.
• Associative Play is much like parallel play but with increased levels of interaction in the form of sharing, turn taking, and general interest in what others are doing.
• Cooperative play occurs when children join together to achieve a common goal.
• Provision of age appropriate play activities and toys helps in development of social skills.

Activity for students:

Watch children in your surrounding while play and record your observations to find out various types of play children engage in.

Following section presents some of the activities you can use in classroom to develop social skills among students at different level.

Activities to develop social skills among preschoolers
Children who display perplexing behaviors have not yet learned to react appropriately in certain situations. It is our job as parents and teachers to be aware of the skills each child needs in order to get to the next level of social development.

Children need to be taught to negotiate compromise and cooperate with each other. Conflict resolution is a great helper for teaching social skills to young children who are constantly experiencing social problems during play.

There are many preschool socialization activities that teachers can use in their classroom that develop and promote friendships in young children. Some ideas to use are listed below:

• Games
Choose games that require children to work in pairs or small groups.
• "Row, Row, Row Your Boat": Sit children facing each other with legs crossed and holding hands. Have them rock back and forth as they sing. Allow children to select a partner, or select children to work together to promote new friendships. Let the children that struggle with friendships to choose first.
• Promote positive physical interactions: Have the children draw with their finger on the back of a peer as they say this poem “Draw a snake upon your back, put two eyes and paint it black, which finger did I use last?” The other child then guesses which finger was correct. The "artist" should tap with different fingers during the last sentence in additional plays to make the game more challenging.

Name Song
Using this "Name Song" helps classmates learn everyone's names in a fun way. Use any tune you wish:
“I know what my name is, I wonder if you know, My name is ....”(Point to a child who calls out their name), Then all sing, “hello, hello, hello, hello, hello, hello, hello." Have the children wave to the child who has said their name.

Books
Many children’s books feature different friendships and relationships. Point these differences out to children as you read.

Developing friendships can be a difficult task especially for a child with a silent and more reserved personality. Do not drive children if they are not ready. Help them to develop social skills needed to begin friendships and assist the friendships in developing over time. Teachers make wonderful role models and children learn from example. Make a point of speaking positively about all the children and share with them the positive qualities that they individually bring to friendships.

Activity for students:

Prepare a list of activities you can use in classrooms a preschool teacher, for social development of children
Tools for Promoting Social Learning

The High Scope approach gives adults the tools they need to help children develop strong and positive relationships with adults and peers. Teachers learn how to create a positive climate in the classroom as a foundation for social learning. The social skills children develop in High Scope programs contribute to their readiness for school and their ability to meet a variety of challenges throughout their lives.

i. Nurturing Social Environment

Creating a warm and nurturing environment in preschool not only helps children form trusting relationships with others but also promotes learning in all areas. Surrounded by a positive and supportive classroom climate, children are likely to become engaged and motivated learners. Within this environment, activities and interactions are planned around the key developmental indicators (KDIs) in social Learning to Resolve Conflicts. Helping children manage frustrations and resolve social conflicts is an area of social learning that is often particularly important to teachers. Teachers find that High Scope’s six-step conflict resolution process is especially useful.

ii. Conflict Resolution Steps

- Approach calmly, stopping any hurtful actions. Place yourself between the children, on their level; use a calm voice and gentle touch; remain neutral rather than take sides.
- Acknowledge children's feelings. Say something simple such as “You look really upset;” let children know you need to hold any object in question.
- Gather information. Ask “What's the problem?” Do not ask “why” questions as young children focus on that what the problem is rather than understanding the reasons behind it.
- Restate the problem: “So the problem is...” Use and extend the children’s vocabulary, substituting neutral words for hurtful or judgmental ones (such as “stupid”) if needed.
- Ask for solutions and choose one together. Ask “What can we do to solve this problem?” Encourage children to think of a solution but offer options if the children are unable to at first.
- Be prepared to give follow-up support. Acknowledge children’s accomplishments, e.g., “You solved the problem!” Stay nearby in case anyone is not happy with the solution and the process needs repeating.
- Adults respect children’s ideas for solving problems, even if the options they offer don’t seem fair to adults. What’s important is that children agree on the solution and see themselves as competent problem-solvers.

(http://www.highscope.org)
4.6.4 Social characteristics of learners at kindergarten/ early primary (five and six year olds)

These included:

i. Very social; visit friends on one’s own.
ii. Very self sufficient
iii. Persists longer at task. Can plan and carry out activities and return to project next day
iv. Plays with two or three friends often just a short time only and then switches play group
v. Beginning to conform. Is very helpful
vi. By six becoming very assertive. Often bossy, dominating a situation and ready with advice.

vii. Needs to be first; has difficulty losing
viii. Possessive and boastful
ix. Craves affection. Often has a love/hate relationship with parents

x. Gender roles becoming more refined. Has tendency to gender type.

xi. Becomes clothes-conscious

i. Activities to promote social development at kindergarten/ early primary

Social play—particularly pretend social play—functions as a safe testing ground in which children can learn appropriate social behaviors (Pellegrini et al 2007).

Pretend social play also involves “mind reading” skills—the capacity to decode each other’s intentions and anticipate each other’s actions (Spinka et al 2001; Pellegrini and Bjorkland 2004).

But kids need more than free time and pretense to master social skills. They also need guidance about which social behaviors to emulate. The following activities can be helpful for developing social skills at kindergarten:

The name game
Researchers Sandra Sandy and Kathleen Cochran note that young children need to learn the importance of getting someone’s attention before you speak. They’ve invented this little game for teaching social skills: Have kids sit in a circle and give one kid a ball. Then ask him to name another child in the circle and roll the ball to that child. The recipient then takes his turn—naming a child and rolling the ball—and so on.

Follow the leader
Ask the children to line up behind a leader and follow him over a hurdle path. Children must stay in line, and take turns as they pass through each section of the course.

Activity for students:
Search for some more classroom activities to enhance social skills among children.

4.6.5 Social characteristics of learners at late kindergarten/primary level (seven and eight year olds)

Learners at late kindergarten/primary level possess the following characteristics:

i. Beginning to prefer own gender; has less boy/girl interaction
ii. Peer groups begin to form
iii. Security in gender identification
iv. Self-absorption
v. Begins to play and work independently
vi. Can be argumentative
vii. Seven still not a good loser and often a tattletale
viii. By eight play games better and intent to winning
ix. Conscientious; can take responsibility for routine chores
x. Less selfish
xi. Able to share. Wants to please
xii. Still enjoys and engages in fantasy plays

i. Activities at primary level to develop social skills

As a teacher you can use the following activities in classroom to develop social skills among students:

**Asking Questions**

Learning Objective: To understand the importance of asking questions during a conversation

Skill: Social communication.

Tell the group: Asking questions is the best way to get as much information about a subject as possible. When you ask questions you show that you are interested in other people and you keep the talk going. You will also learn things from people’s answers that will make you a better friend. For practice, have the children turn to the person on their right. One of the two people secretly focuses on something in the room (e.g., the clock) and gives a clue, such as, “I’m thinking of something on the wall.” The other person asks questions (e.g., “What color is it?” or “Which wall is it on?”) until she guesses the object.

**ii. Sharing**

Learning Objective: To teach children to understand the value of sharing with others

Skill: Empathy, social interaction.

Ask the group to think and give their ideas about sharing. Write down all of their ideas on the board.

Tell the children:

Learning to share is difficult for many children, because it means to lose something. But it also means being generous and thinking about the needs of others. When you share, you feel good because you are being nice to someone else. When someone shares with you, you feel good because they are being kind to you.
Present the following examples to the group, one at a time. After each, ask the children whether it would be easy or difficult for them to share in the situation. Encourage them to talk about what they would do, and why.

- The whole group is reading a book, and there are no enough copies for everyone.
- There is only one brownie left on the plate.
- Three people are sitting on a sofa, and the fourth person has nowhere to sit.

Ask the group to think of other examples when sharing is necessary.

Dear students,

In this section you learnt about the characteristics of learners at primary level. You also learnt some classroom activities to develop social skills like sharing, asking questions and caring for other’s needs.

Activity for students:

| What are other social skills a child at primary level may need to learn? |

4.6.6 Social characteristics of learners at elementary level

- At this level students may exhibit the following characteristics:
- The elementary children want to expand social relationships beyond the home environment.
- Peers become extremely important to elementary aged children; they are constantly building relationships.
- They naturally form groups; they want to be with their friends. Their constant talking is really evidence of this focus on building relationships.
- These children want to be like their friends, and to be accepted by the group is extremely important.
- There is a cooperative, joint focus as opposed to a competitive one. This too is a sign that children are learning to build community.
- Elementary children are looking for people to admire. They may be inspired by older children, a family member or their teachers.

4.6.6.i Social skills at elementary level

Teachers play an important role at every level of schooling, including elementary schools (Mashburn & others, 2008; Pianta & others, 2008). In a series of studies from infancy through third grade, positive teacher-child relationships were linked to a number of positive child outcomes (Howes & Ritchie, 2002). Children who have warm, positive relationships with their teachers have a more positive attitude toward school, are more enthusiastic about learning, and achieve more in school (Thompson & Goodman, 2009).

Group skills are particularly important in a classroom setting. Studies suggest that children’s behavior in the classroom is as important to their school success as their
intellectual ability is. Studies tell us that children typically do better in groups that consist of peers who share common characteristics. Helping children identify their interests (such as computers, the environment, community service, animals, etc.) is the first step in guiding them toward joining a group of children who are more like them.

**ii. Classroom activities to develop Social skills**

Following section will present classroom activities which can be used by a teacher to develop social skills among children at elementary level.

**Active listening**

The most important social skill needed at all levels is listening.

Active listeners show speakers that they are paying attention. They do this through body language (offering appropriate eye contact, turning the body in the direction of the speaker, remaining quiet) and verbal feedback (restating, in their own words, what the speaker is trying to communicate).

One popular method of teaching active listening assigns people to one of three roles: A speaker, a listener, and an observer. The speaker is instructed to talk for a few minutes about something important to him. The listener attends quietly, providing cues to the speaker that she is paying attention. When the speaker is finished talking, the listener also repeats back, in her own words, the speaker’s points.

The observer’s job is to evaluate the speaker and listener. Did the speaker stay on topic? How did the listener indicate that she was paying attention?

After the observer shares his observations with the others, the players change roles and try again.

**The blindfolded walk**

To play this game, create path with hurdles. Then assign players to one of two roles. Blinded players will wear blindfolds. Leaders will take blinded players by the hand and attempt to lead them through the course. Talking is encouraged, and, when they are finished, players should reverse their roles.

**Joining a group**

*Learning Objective:* To help children find ways to reach others who have similar interests; to increase group inclusion.

*Skill: Making Friends:* Ask the children to think of ways to find groups they might like to join. Suggest that they focus on their individual interests. Brainstorm ideas and write them on the blackboard or a large sheet of paper.

*Tell them:* Throughout their lives, people participate in many different kinds of social groups: scout troops, sports teams and many more. A class is also a kind of group. Your classmates are part of your group experience every day at school. A child’s life is filled with different kinds of groups.
Distribute Activity Sheet: Children can write the answers or raise their hands and answer the questions aloud. Use their responses as the basis for a discussion about the different aspects of joining a group.

Joining a Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
</table>

Ahmad is a new student at school. He is sitting near a group of children who are planning some activities for the weekend. He wants to be included but doesn't know what to do.

What could Ahmad do to become part of the group?

Do you think Ahmad should speak first or wait until someone in the group speaks to him?

What could Ahmad say to start a conversation? Should the group invite Ahmad to join them? Why or why not?

Tell about a time when you had a difficulty in connecting with people in a group. How did you feel? What did you do?

Dear students we have presented some of the activities you can use in classroom for promotion of some important social skills such as sharing, taking initiatives, empathy, asking questions etc. you should think and try to device some more activities for the promotion of social skills.

Activity for students:

Design at least one activity for promotion of a particular social skill at each level from preschool to elementary.

4.7 EXERCISE

1. Why social development is an important aspect of child development? Elaborate with reasons.

2. What are social skills? Why learning various social skill is important?

3. Extend your reading of various theories of social development and prepare a summary n your own words.

4. Prepare a glossary of the terms related to social development.
5. Which of the social development Strategies will be the most difficult for you to implement in classroom and why?

6. Which of the theorists discussed in this section best reflects your beliefs on how children socially develop and why?
4.8 BIBLIOGRAPHY


Unit–5

EMOTIONAL DEVELOPMENT

5.1 OBJECTIVES
After reading the unit students will be able to:
1. Define emotional development
2. Describe the meaning, nature and importance of emotional development
3. Explain theories of emotional development
4. Describe characteristics of learners at various stages of development from preschool to elementary level
5. Describe various activities provided at certain stages for the learning purpose

5.2 OVERVIEW
Dear students in last unit you have studied social development. In this unit you will learn about emotional development. We cannot separate emotional and social development because emotional development occurs in social context. Moreover both of the aspects of development influence other developmental processes. Healthy social – emotional development is closely related to the healthy cognitive development of children and it serves as the foundation for future academic, social and emotional success. A teacher must have the knowledge of all dimensions of emotional development to deal effectively with the students at various levels.

5.3 WHAT IS EMOTIONAL DEVELOPMENT?
Emotional development is the beginning of a child's experience, understanding, expression, and management of emotions from birth to late adolescence. It also includes how growth and changes in these processes related to emotions take place.

How do children start to understand who they are, what they are feeling, what they expect to receive from others? These concepts are the bases of their social-emotional development. They play important part in a child’s self-confidence and empathy, his ability to develop significant and long-term friendships and partnerships, and his sense of importance and value to those around her. Children’s social-emotional development influences all other areas of development: Cognitive, motor, and language development are all greatly affected by how a child feels about himself and how he is able to express ideas and emotions.

Professionals sometimes define healthy social-emotional development in young children as early childhood mental health. Healthy social-emotional development includes the ability to:

bullet Form and sustain positive relationships
• Experience, manage, and express emotions
• Explore and engage with the environment

Children having well-developed social-emotional skills are also able to:
• Express their ideas and feelings
• Show empathy towards others
• Manage their feelings of frustration and displeasure more easily
• Feel self-confident
• More easily make and develop friendships
• Succeed in school

Summary
Dear students you have learnt the concept of emotional development. To conclude we can say that emotional development starts with very first experience of a child in this world through late adulthood. An individual having well developed socio-emotional skill can express as well as control his emotions and feelings according to the situation. He has the ability to build healthy and long life relationships. Most importantly emotional development is associated with all other dimensions of child development.

5.4 WHY EMOTIONAL DEVELOPMENT IS IMPORTANT?
Dear students we have learnt what is meant by emotional development. Now we are going to seek out the need and importance of emotional development.

Social-emotional development provides the basis for how we feel about ourselves and how we experience others. This foundation starts from the day we are born and continues to develop throughout our lifespan.

The quality of the relationships a child develops with his mother or primary caregivers has the greatest influence on his later socio-emotional development. In previous unit you have studied attachment theories which present and support this idea.

Positive and nurturing early experiences and relationships have a significant impact on a child’s social-emotional development. They also influence how the young child’s brain develops. An attachment relationship is adorable one. It develops during the first few years of the child’s life. It is built upon repeated interactions between the infant and the primary caregiver (can be a mother or any other person). These interactions mainly involve efforts by the infant to achieve physical and emotional intimacy and the caregiver’s reactions to these efforts. They have a long-lasting influence on how the child feels about himself, how he thinks and interacts with his world, and what does he expect from others.

Children’s responses to the different feelings they experience every day have a major impact on their choices, their behavior, and on how well they handle and enjoy life.
Emotional development involves:
- Understanding how and why emotions appear
- Recognizing one’s own feelings and those of others, and
- Developing effective ways of managing them.

As children grow and are open to different situations their emotional lives also become more complex. Developing skills for managing a variety of emotions is therefore very important for their emotional health. Parents, family members or other care givers have an important role to play in supporting children’s emotional development. They do this through answering effectively to children’s emotions, through providing examples of how they manage feelings, and through talking with children about feelings and how to manage them. Similarly, the teachers can provide significant care for children’s emotional development.

5.5 ASPECTS OF SOCIAL EMOTIONAL DEVELOPMENT
There are some core dimensions of emotional development for instance caring environment, knowledge and regulation of emotions, social understanding, relationship management and social responsibility. These dimensions are discussed in the following section:

i. Caring environment
Developing kind, trusting, relationships with responsive caregivers in early childhood settings are essential. These relationships provide the child with an internal working model of positive social relationships (Denham & Weissberg, 2004).

ii. Emotional knowledge and emotional regulation
The ability to identify emotions in one self and others and to delay reaction to emotions while directing these feelings into socially acceptable behaviors is central to social competency.

In the early stages of social emotional development infants and toddlers experience emotions and react to them on an affective level. With the beginning of language and other cognitive skills, such as attention maintenance, and reasoning, children are able to respond to the emotional stimulation by using their new cognitive skills to think in advance and create alternate plans for action.

The act of labeling an emotion helps to move it to the language/cognitive part of brain. This creates a space between feeling and action which ultimately helps children to process feelings in a matter that is more cognitive than reactive. (Greenberg, Kusch, & Mihalic, 1998).

Children at very early age are capable of recognizing basic emotions particularly happy and sad; however they often confuse anger with fear. Between ages four to seven children begin to understand more complex dimensions of emotions. For instance, they can
recognize that people may experience diverse emotions, or that different people can feel differently about the same event (Denham & Weissberg, 2004).

iii. Social Understanding
Generally around age four children begin to understand that others have internal worlds where they keep feelings and thoughts, and that certain events/actions are causes for certain emotional reactions. This major developmental stage allows for perspective-taking – the ability "to be in someone else's shoes" which leads to the ability to empathize.

iv. Relationship management
The knowledge of social norms influences the interaction between children. For example, it helps a child how to express emotions effectively or to respond to problems.

v. Social responsibility
Knowing about emotions is not enough. The goal of social emotional education is to enable children to be internally motivated to act kindly; and to develop a system of ethical values directed toward feeling for others.

Activity for students:

Dear students you have studied key dimensions of emotional development. In order to assess your understanding please summarize the main points in your own words.

5.6 FACTORS AFFECTING EMOTIONAL DEVELOPMENT
Environmental and personal problems can hinder social and emotional development. As you have studied earlier, infants and young children need constant interaction and provision of basic needs and nurturing in order to develop well and healthily. Every child develops at his or her own pace. There are many factors, both internal and external, which impact a child's level of emotional development. Let’s explore what these factors are.

Internally, temperament (the genetic part of an individual's personality) can affect how children respond to the world emotionally. Children who have more tolerant and relaxed temperaments incline towards easier learning of emotional management. They can also positively understand and respond to other people’s emotion. Children who have difficult temperaments have a tendency to make efforts in order to regulate their own emotions. They will usually react to other people's strong emotions by becoming unhappy themselves.

Externally, the environment and role models will also impact how children react to the world emotionally. In previous unit you have studied Bronfenbrenner’s ecological theory which provides insight into the effect of various environments on social and emotional development of a child.
Summary
Dear students in this section you have learnt about the internal and external factors which influence the emotional and social development of a child. Internally, the temperament of child and externally, the variety of environments affect a child’s expression of emotions and his reactions to others emotion.

Activity for students:

Draw a sketch of Bronfenbrenner’s ecological systems and putting yourself in center, point out the influences from various environments which shaped your personality.

5.7 ERIK ERIKSON’S THEORY OF SOCIO-EMOTIONAL DEVELOPMENT
Dear students as you have already learnt, emotional development does not occur in isolation. Cognitive, behavioral and social developments work together with emotional development. In this process context also play a role. Various emotional development theories are offered, but there is general agreement on age-related milestones in emotional development.

In unit 4 you have studied eight stages of Erik Erikson’s socio-emotional theory. In this section only first four relevant to early childhood age are presented. Let’s have a glance:

<table>
<thead>
<tr>
<th>Erikson’s First Four Stages of Social-Emotional Development Stage</th>
<th>Approximate Age</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic trust vs. basic mistrust</td>
<td>Birth to 12-18 months</td>
<td>Infants need loving and trusting relationships with parents and other caregivers to develop a sense of trust. Infants who do not receive consistent and nurturing care are at risk for developing a sense of mistrust.</td>
</tr>
<tr>
<td>Autonomy vs. Shame/Doubt</td>
<td>18 months to 3 years</td>
<td>During this stage the child becomes more independent, learning to walk, run, climb, build, draw and talk. Toilet learning is a key skill for this stage. Children who are supported and supervised by adults as they develop new skills and independence feel responsible and capable. Children who receive negative messages from parents and caregivers may begin to doubt their abilities and lose self-confidence.</td>
</tr>
</tbody>
</table>
### Initiative vs. Guilt

**Preschool children need a safe environment that encourages making choices.**

**3 to 6 years**

At this age children become more independent, assertive and take more initiative. Teachers and other adults need to provide an environment that supports the child’s efforts but also helps guide their activities to prevent “unhappy” endings that may create feelings of guilt.

### Industry vs. Inferiority

**School age children need an environment with encouraging adults that provides opportunities to develop and create their own ideas.**

**6 to 12 years**

School age children are learning to develop more complex social and academic skills.

Children who experience success discover that being productive is satisfying. On the other hand, children who fail in school or other settings may begin to feel inferior and inadequate. Adult guidance that deemphasizes mistakes and focuses on problem solving helps focus the child on accomplishments.

---

**i. Why is this important?**

Healthy socio-emotional wellbeing of a child depends on the types of interactions he has with caregivers. Erickson’s theory helps ECE teachers identify the types of teacher–child interactions essential for healthy social and emotional development. Erickson’s theory helps people who work with young children understand the importance of providing particular types of interactions and environments to indorse positive social-emotional development for young children.

**ii. Summary**

Dear students you have learnt that emotional development is associated with all other aspects of development. It occurs as a result of healthy and positive interaction between the child and his caregiver. Erik Erikson’s socio-emotional theory also advocates the importance of healthy interactions.

**Activity for students:**

Keeping in view Erikson’s theory, write down the possible outcomes of interaction between a child and caregiver.
5.8 EMOTIONAL CHARACTERISTICS OF LEARNERS AT PRESCHOOL LEVEL

Emotions of preschool children are largely on surface. Children at this level exhibit following characteristics:

- Children laugh when adults laugh or on an odd event. It shows expansion of humor
- Less negativism
- Commencement of phobias and fears that may prolong to age five
- At four years intentional lying may begin

Activities for Social and Emotional Development at Preschool level

Following section presents some classroom activities a teacher can use to develop socio-emotional skills. You can get the idea and design your own innovative activities according to the level of learners and accessible sources.

I Can Help

It will be difficult for children of preschool age to fully grasp emotional concepts, especially complex emotions. Therefore teacher should focus on basic emotions such as happy, sad, angry, and hurt.

Materials:

- Large pieces of chart paper/poster board
- Markers

What to do:

1. Draw a happy face on top of the chart paper and ask the child what he sees and what it means.
2. Ask him to tell things that make him happy.
3. Ask what he can do to feel happy.
4. Draw an unhappy face and repeat the process. Also ask the child what he can do if he sees a friend who is unhappy.
5. Draw an angry face as well as someone who is upset.

Variation:

Talking about emotions with a child can be made easier by using books. Find out some books in Urdu language or in mother tongue, which are written and designed for children of this age.

5.9 EMOTIONAL CHARACTERISTICS OF LEARNERS AT KINDERGARTEN LEVEL

At age five children begin to control emotions and try to express them in socially acceptable ways.

- Frequent quarrels among children but these quarrels are of short duration.
- At six there is change in emotions and child seems to be in emotional confusion. New kind of worries arise by joining school.
• Anger outburst (explosion; expression of anger) may appear
• Development of conscience (sense of right and wrong) at five starts
• At six acceptance of rules develops and often there is rigid insistence on obeying the rules in all conditions.

i. Activities to develop emotional skills at kindergarten
Making a Train
Group projects help young children by providing them with the opportunity to share and work together to achieve some goal.

Materials:
• Cardboard boxes
• Paint
• Crayons
• Markers

What to do:
1. Arrange cardboard boxes for the children to make a train together.
2. Ask children to decorate the boxes and then put them together like a train (or any other object that might be interesting to them).
3. Have limited supplies available to support children in sharing the materials as they make the train together.
4. Talk about sharing while the children are building and decorating the train. Give praise comments or acknowledgement when children share.

Ask them how they feel when they have to wait to use the thing that they want.

Ask them to list things they can do while they wait their turn and share the materials (work on another part of the box, use crayons while they wait for markers, make streamers for the train).

iii. Pass the Hat
This activity provides children with the chance to practice different feelings in a safe environment.

Materials:
• Pictures representing various feeling faces
• Hat, basket, or large envelope

What to do?
1. Cut out pictures which represent various feeling faces and place them in a hat, basket or large envelope.
2. Pass the hat among the playmates and play music.
3. Stop the music. The child holding the hat picks a picture of an emotion.
4. Ask the child to identify it, show facial expressions. The child can also describe a time when he felt that way.

5. Continue passing the hat until all children get a chance to participate.

v. Variation:
   • Have the children look through magazines and newspapers to find various feeling faces. They can cut them out and make a feeling-face collection. Adults can help the children label the different feeling faces.

5.10 CHARACTERISTICS OF LEARNERS AT ELEMENTARY LEVEL
Learners at elementary level may exhibit the following characteristics:
• Difficulty in starting things but will continue to end
• Worries related to school performance
• Beginning of empathy sees others viewpoint
• Sense of humor expressed in riddles, practical jokes, and nonsense words
• Discrimination between good and bad but still immature
• Is sensitive and gets hurt easily
• Has sense of possession and takes care of possession (makes collections)

Activities to promote emotional health at elementary level
A teacher can promote social-emotional development in classroom if he is sensitive to children’s needs, helps them feel secure and confident, and acts as a model for effective social behavior.

Following activities can be used to develop emotional skills among learners:

Tone of voice
Learning Objective: To help children recognize that how things are said can be just as important as what is said

Skill: Emotional communication, self-awareness
Ask the students what they think “tone of voice” means. Write down all of the ideas on board. Give examples of different tones of voice.

Explain to the students:
The tone of your voice—how you are actually saying something—communicates what you feel. Often, your tone of voice can give stronger message than your words. Sometimes, how you say something can change the meaning of what you are saying. It can even give the message that you don’t really mean what you are saying.
Ask the children to sit in a circle. Going around the circle, ask them to give examples of voice tone that can change the meaning of what’s being said or communicate the wrong feeling.

Example 1: The first child in the circle says, “I love ice cream” in a bored voice. The next child then says, “I love ice cream” as though she really does love it.

Example 2: The next child says, “I have to do so much homework!” in a happy voice. The next child says the same sentence in a tone he thinks appropriate, such as unhappy or angry.

Provide every child a chance to participate in the activity.

### i. Facial expressions

**Learning Objective:** To teach children the difference between facial expressions; to identify possible causes for these expressions

**Skill:** Emotional communication, self-awareness

Ask the children, “When you look at people’s faces, what do their expression tell you?” Brainstorm ideas and write them on the board.

**Tell them:**

People’s facial expressions show how they feel. The way their faces look can tell you more than what they are saying. You can often tell whether a person is angry, sad, or happy, even if you can’t hear her words.

When someone is talking to you, it’s important for you to use an appropriate facial expression. If she is saying something funny, you would probably smile; sad, you might look serious; fearful. If you look bored, that person probably will not continue talking with you.

**What to do:**

Distribute an activity sheet to students which displays various facial expressions.

- Happy
- Disappointed
- Confused
- Angry
- Surprised
- Proud
- Uncertain
- Satisfied
- Shocked

Ask children to make their guess about the facial expressions and raise hand to answer. Support the concept that they can tell how each child is feeling even without any words being said. When asked the reason for each child’s feelings, children can invent situations by themselves.
Talking about your feelings

Learning Objective: To teach children that stating their feelings can help in dealing with them

Skill: Emotional communication

Tell your students:
It is important to recognize how you are feeling at different times. Moreover, you should express your feelings appropriately. If you are angry, it is better to tell someone than to keep it secret. If you are feeling happy, share your excitement with others.

Expressing your feelings will help you deal with them. If you tell someone your feelings, it always makes you feel better. When you know about your feeling, it is usually easier for you to deal with others.

Ask the children to tell how they would feel in the situations below, and why:
- If your mother gets angry because you came late from park
- If you got a bad grade on a test even after working very hard
- If you got a bad grade on a test you hadn’t studied for
- If you got 100% on a test
- If your best friend couldn’t come to your birthday party
- If you lost your pocket money in school
- If your teacher asked you a question, and you didn’t know the answer

Then, have the children think of their own examples, and again tell how they would feel, and why.

Summary
Dear students you have learnt some activities you can use in classroom to develop identification of various emotions through the use of body language. You also learnt how you can help students in dealing with their emotions by sharing them with others.

Activity for students:

Construct a few questions you can ask a student to help him identifying the cause of a certain emotion.
5.11 EXERCISE

1. What is meant by emotional development?
2. “Emotional development does not occur in isolation” explain with examples
3. What are various dimensions of emotional development?
4. Highlight the importance of Erik Erikson’s socio-emotional theory for providing useful insight to ECE teacher
5. Describe emotional characteristics of learners at preschool and elementary level. Also include your own observation to support or refute.
6. Design at least two classroom activities to promote emotional development at each level.

5.12 BIBLIOGRAPHY


James Hymes’ Understanding Your Child by Kadija Johnston, LCSW


lxxix

Unit-6

MORAL DEVELOPMENT

6.1 OBJECTIVES
After reading the unit, students will be able to:
1. Define moral development
2. Explain morality within the context of nature and nurture
3. Describe moral characteristics of learners from infancy to childhood
4. Describe various activities from preschool to elementary level to inculcate moral values among learners

6.2 OVERVIEW
Dear students this unit deals with moral development. You will learn the meaning and nature of moral development, its importance and need in child’s personal and social life. Moral development has a significant role in shaping the personality of a child. In order to know the student, teacher must have the knowledge of various patterns of morality which appear at different phases of child’s development. Moral development like other aspects of development occurs along with the social, emotional and cognitive aspects of development.

6.3 MORAL DEVELOPMENT
Moral development relates to an individual’s sense of right and wrong. It focuses on the beginning, understanding and change of morality from infancy through old age. What do we mean by morality? According to one definition, morality refers to “a set of principles or ideals that help the individual to distinguish right from wrong and to act on this distinction” (Shaffer, 1993). Morality principles guide how people should treat one another, with respect to justice, others’ rights and welfare.

Morality is the sense of right and wrong

lxxxi
Moral development includes:
Learning the difference between right and wrong;
To use this knowledge to reach at proper decisions in complex choices; and
Possessing strength and freedom to act according to the right decision. It can be referred to do the right thing even in difficult situations.

Morality is shaped by several factors like children's experiences of interaction with family, friends, and other adults. Some other factors as their physical growth, cognitive, emotional and social skills combine to influence moral development.

6.4 MORAL COMPONENTS
There are three moral components according to Shaffer (1993):
First Cognitive component relates to the thinking about moral issues and making decisions about right and wrong. Second Emotional component is linked to the feelings associated with moral thoughts and decisions. These feelings include guilt, shame and pride. Third is behavioral component. This is concerned with the ways we behave (act) and includes the limit to which we steal, lie, cheat and behave nobly.

6.4.1 Factors affecting moral development
There are various factors which affect moral development of an individual. Let’s have a look:

i. Family
Family plays an important role in a child's moral development. Parents show acceptance or rejection of child's actions. And set the meanings of right and wrong for the child. The actions which are approved by the parents are viewed as good and those rejected by them are viewed as bad. This makes his first orientation to morality.

ii. School
School, too, has an important part in making moral concepts. The child gets influenced by the concepts of the good and the bad as a result of his relationship with his classmates, teachers, and senior students. Children take many actions which they see their seniors doing in the school. Most of what has been learnt at home from parents and family is rejected. School can play a positive role by providing special teaching and training for moral development.

iii. Peer Group
Friends and playmates affect a child’s perception of good and bad. Child accepts the ideas of his companions.

iv. Society and Culture
The common social environment also affects the moral development of the individual. Due to the fact, the moral behavior of individuals from cultured societies is distinctly changed from that of individuals belonging to uncivilized societies.

v. Age
Age is an important source in making moral concepts and moral behaviors. As the individual develops from infancy to adolescence, he becomes more open-minded towards certain ideals which sometimes do not fit with what he thinks is good. In later adolescence he approves many things which he had earlier rejected.

vi. Gender
Another important factor in moral development is gender. Girls are held with the sense of guilt and shame if their behavior does not match with the accepted moral code. They try to be less critical of the moral tone set by their elders. Boys, on the other hand, are more aggressive than the girls. Often they set their own standards of moral behavior and put effort to follow them.

To conclude we can say that moral development is a complicated process in which an individual’s interaction with people and objects in his surrounding, play an important role.

6.4.2 What is the importance of moral development?
Society cannot work in a proper way in the absence of ethical and moral principles on what is right and what is wrong.
Moral education starts from early childhood and continues during childhood and adolescence. Impact of moral development will be reflected through individual’s personality, behavior and attitudes. The quality of inter personal relations depends on the quality of manners and behaviors people act upon. Starting from individual level, morality spreads out to society and is an important element for peace and unity. Thus, teaching positive values such as honesty, courage, responsibility, compassion, integrity, self-discipline, self-reliance, kindness, friendliness, tolerance, respect, love, justice and mercy becomes essential.

**Summary**

Dear students in this section you learnt the meaning of moral development and the factors which affect an individual's concept of right and wrong. Three components i.e. cognitive, emotional and behavioral are essential to moral development. A child’s home and family play important role in shaping his thinking. School, peers, age, society and gender are other influencing factors on moral development. Society cannot work properly in the absence of moral principles on right and wrong.

Activity for the students

Enlist the factors which have influenced your concept of morality.

### 6.5 THEORIES RELATED TO MORAL DEVELOPMENT

Psychologists have studied morality in various ways. In the following section we will present an introduction of the two major theories related to moral development.

**Jean Piaget's Theory**

Jean Piaget (1896–1980) focused specially on the moral lives of children. He studied the way children play games in order to understand their moral development.

#### Jean Piaget’s Theory of Moral Development

1. **Autonomous Morality**
   - (7-12 yrs. Old)
   - Child's moral reasoning is based on the intent and not on the basis of the action alone

2. **Heteronomous Morality**
   - (2-7 yrs. Old)
   - Action is more important than intention
learn about children’s beliefs about right and wrong. He watched children play marbles to learn how they used and thought about the game’s rules. He also asked children questions about moral issues like: theft; lies; punishment; justice.

Through his studies, Piaget concluded those children, depending on their developmental maturity, thinking two unique ways about morality. He termed the ways as Heteronymous and Autonomous morality.

Source: http://www.slideshare.net/leehan16/moral-development

**Heteronymous Morality**
This is the first stage of moral development in Piaget’s theory. It arises from 2 to 7 years of age. Here, justice and rules are considered of as unchangeable things of the world which are beyond control of people.

**Autonomous Morality**
This is exhibited by older children (about 10 years of age and older). The child becomes aware that rules and laws are created by people and that, in judging an action, one should consider the actor’s intentions as well as the consequences.

Dear students, you will recall Piaget’s theory of cognitive development. His explanations support our understanding on the process through which the child continues to understand the world and how he adds rules and values and takes moral decisions.

**Activity for students**

Summarize the important points of Piaget’s theory of moral development.

We shall now study another important theory, that of Kohlberg.

**6.5.1 Lawrence Kohlberg’s Theory (1927-1987)**

Lawrence Kohlberg started as a developmental psychologist and then moved on to the field of moral education. Through his studies, Kohlberg displayed that people developed in their moral reasoning through a series of stages. He believed that there were six identifiable stages of moral reasoning. These stages can be clustered into three levels of complexity. They are:

**Level I - Pre-Conventional Reasoning**

Ixxxv
At this level, the child cannot understand the concept of moral values. Moral reasoning is controlled by external rewards and punishments.

**Stage 1: Punishment and Obedience**
Moral thinking is based on punishment. Children obey because adults tell them to obey. Whatever is rewarded is good; whatever is punished is bad.

**Stage 2: Individualism and Purpose**
Moral thinking is based on rewards and self-interest. Children obey when they want to obey and when it is in their best interests to obey. What is right is what feels good and what is rewarding.

I’ll do something good for you if you do something good for me.

**Level 2 - Conventional Reasoning**
At this level, internalization is transitional. The child abides by certain standards (internal). However, these are the standards of others (external) such as parents or the laws of society.

*Source: Google image*

**Stage 3: Interpersonal Norms**
Children give importance to trust, caring and faithfulness to others as the basis of moral judgment. At this stage, children often adopt their parents’ moral standards. They make efforts to be considered by parents as a “good boy” or a “good girl. This impression is rewarding for children.

**Stage 4: Social System Morality**
Moral judgments are based on understanding the social order, law, justice and duty. For example, a child might say that it is always wrong to steal because laws that have been developed are for the benefit of society.

Good is defined by laws of society, by doing one’s duty. A law should be obeyed even if it is not fair.

**Level 3 - Post-Conventional Reasoning**
At this level morality is completely internalized (adopted) by the individual and is not based on others’ standards. The adolescent identifies alternative moral ways, searches for the choices and then decides on personal moral codes.
Stage 5: Community Rights versus Individual Rights
The adolescent understands that values and laws are not absolute but relative. He also knows that standards may differ from one person to another. The person recognizes that laws are important for society but knows that laws can be changed. He believes that some values, such as liberty, are more important than the law. Values and laws are relative and standards may vary from one person to another.

Good is understood in terms of abstract (mental) principles that the society has settled down. An unfair law ought to be changed.

Stage 6: Universal Ethical Principles
At this stage individual has developed a moral standard based on universal human rights. When faced with a conflict between law and conscience, the person will follow conscience, even though the decision might involve personal risks. Good is understood in terms of abstract principles. The emphasis is on human rights without caring for the approval of society.

Kohlberg’s theory shows us that moral reasoning is a complex process and the child needs guidance throughout his developmental stages.

In the pre-school age, you will be dealing with children of the first two stages and in the long run the third stage, but it is important for you to understand the whole process of moral development according to the perspective of Lawrence Kohlberg.


Activity for students

Dear students observe children from your surrounding and compare
6.5.2 Criticism on Kohlberg’s theory: Gilligan’s theory
Carol Gilligan was born on November 28, 1936, in New York. In 1970 she became a research assistant for Lawrence Kohlberg.

Gilligan felt her teacher’s theory did not sufficiently address the gender differences of moral development due to two reasons: Kohlberg conducted this study on males and because his theory did not include the caring perspective. Gilligan claimed that males and females are often socialized differently, and females are more appropriate than males to worry about interpersonal relationships and take responsibility for the well-being of others. Gilligan suggested this difference is due to the child’s relationship with the mother and that females are traditionally taught a moral perspective that focuses on community and caring about personal relationships. She presented the following stages of moral development:

**Pre Conventional**
- Person only cares for himself in order to safeguard existence
- This is how everyone is as children
In this transitional phase, the individual’s attitude is considered selfish on one hand, and on the other hand the person sees the connection between themselves and others.

**Conventional**
- Responsibility
- More care shown for other people.
- Gilligan says this is shown in the role of mother & wife
- Situation sometimes carries on to ignoring needs of self.

In this transitional phase, tensions between responsibility of caring for others and caring for self are faced.

**Post Conventional**
- Acceptance of the principle of care for self and others is shown.
- Some people never reach this level.
Gilligan argued that boys develop the *morality of justice*, in which they focus on the use of laws and rules of moral principles in order to ensure that justice is served. In contrast, girls develop the *morality of care* in which their main focus is on human well-being and on compassion for others.

**Summary**

Moral development concerns the integration of rules and values that are endorsed by one’s social environment. This is learnt through social interactions starting as early as infancy while observing important adults (parents, teachers, ideal personality). In this section, we have studied the meaning of morality and analyzed through the theories of two eminent psychologists, Jean Piaget and Lawrence Kohlberg and how children proceed in their moral development. Two perspectives are proposed by Piaget’s Heteronomous and Autonomous morality. Kohlberg refers to three levels of reasoning: Pre-Conventional Reasoning, Conventional Reasoning and Post-Conventional Reasoning. Gilligan presented the ideas of morality of justice and morality of care based on gender differences.

Research shows that the roots of moral functioning appear early in life, in infancy, and depend on the affective quality of family and community support.

**Activity for students:**

Compare theories of moral development you have studied in this section and prepare a list of similar and different ideas presented.

6.6 **MORAL CHARACTERISTICS OF LEARNERS**

Preschool years mark child’s transition from egocentricity (self-interest) to empathy—or at least the potential for empathy.

Child becomes increasingly helpful and caring of others. When forced to choose between her own self-interest and empathy, a four-year-old will still perhaps choose self-interest.

Preschoolers tend to think of right and wrong in black and white terms. That is, an act is always right or always wrong. There are no shades of gray and there is no room to negotiate. People are good or people are bad. Good people are always good and bad people are always bad.

At the age of preschool some more features emerge as:
- Strict equality
- Reciprocity (mutuality); merit, deserving
6.6.1 Characteristics of learners at kindergarten

Young children think of right and wrong in following terms:

**Absolutes.** Things are always good or always bad. It is unimportant whether an act was intentional or unintentional.

**How much physical damage was done?** Greater the damage worse is perception of the act.

**Whether an act will evoke punishment.** If an act will be punished then it is wrong.

**Rules.** Rules should never be broken. Breaking rules is viewed as wrong.

**Their own perspective:** Children have difficulty taking another person’s view of an issue.

6.6.2 Classroom activities to develop morality

Majority of childhood education experts agree that building a child’s character must begin at preschool age. During this period, children can be easily molded and guided to learn about what is right and what is wrong, and to learn to live a value-filled life. They can easily absorb and follow what they see and hear from the adults in their surroundings.

Thus, teaching positive values such as honesty, courage, responsibility, sympathy, honesty, self-discipline, self-reliance, kindness, friendliness, tolerance, respect, love, justice and pity will likely be more effective when the youngsters are at preschool age than when they are at adolescent age.

At this level teacher can use the following classroom activities to promote moral development.

1. **Telling and Reading Stories:**
   All children enjoy listening to and reading folk tales, fairy tales, and stories where animals are the main characters. Teachers can select such story books in Urdu or in mother tongue.

2. **Learning and Singing Songs:**
   Most children love learning and singing songs. Adolescents and adults also like songs and singing, especially if they can identify with the music. Through poems and songs moral values can be indorsed.

3. **Role-playing a Story**
   Majority of children like to wear particular dress and acting out the roles of different characters. For teaching the value of hard work, truth, empathy teacher can use role playing in classroom.
6.6.3 Characteristics of elementary learners
In elementary school child can easily put himself in another person’s shoes; can show empathy.

Children are able to take need as an important reason for kindness.

Children try to reason things out and increase their moral understanding. They often shout “it’s not fair.

It should be noted that elementary children will test boundaries as part of their moral development. They are exploring where the line falls. This requires the adults in their world to follow rules which are put in place. Failure to do so results in moral ambiguity which the elementary child quickly picks up on, learning that we don’t really mean what we say. Not ideal when these children are forming their sense of morality.

6.6.4 Classroom activities for elementary level
Teacher can help in moral development of students by inculcating moral values through classroom activities. Some of the ideas are presented here; you can innovate your own ways.

Thinking about rules
Objective: To teach children that some rules are inflexible, while other rules can be changed.

Skill: Respect, creating agreement

Ask the group, “What does it mean to follow rules? What would happen if people didn’t follow them?” Write down their answers on the board or a large sheet of paper.

Tell them:
Rules tell us how to behave. Some rules should always be followed so that people don’t get unhappy or have something bad happen. “Don’t steal,” “Don’t cheat,” and “Tell the truth” are all rules that should always be followed. In a group like this one, there are certain rules that we follow so that everyone can participate. Some of the rules are: don’t disturb others, don’t use bad language, and don’t say things that will be unkind to others. If we didn’t have these rules, it would be very difficult for us to live together in a society.
Other rules are more flexible. If you sleep time is fixed, your mother might change the rule and allow you to stay awake later sometimes. Rules can only be changed only if no one gets hurt.

Ask the children which of the following rules must always be kept and which can be changed sometimes. Also ask them the reasons for their answer.
• Don’t hit anyone in anger.
• Eat a balanced meal.
• Keep your room neat.
• Don’t talk behind people’s backs.
• Listen to the teacher.

Children can offer other rules from home and school, and tell why these rules should always be kept or can sometimes be bent.

**Role model**
Learning Objective: To identify positive qualities of role models

Skill: Self-awareness
Ask, “What is a ‘role model’?” Brainstorm ideas and write them on the board or a large sheet of paper.

Tell the group:
Role models are people you admire. You may like their values, the way they live their lives, and the things that are important to them. You may want to copy their style.

Most people’s role models are famous people—celebrities, sports stars, politicians, and so on. In this activity, try to think of someone you know personally who is really great. It could be a parent, teacher, or friend. Ask students to talk about their role models. Encourage them by asking these questions:

• What has that person done to become your role model?
• Does your role model help others? How?
• What’s the most important quality a role model should have?
• What could you do to be like your role model?

**Dear students**
You have got an orientation to classroom activities which can be used for the development of moral values at various levels. You can innovate new activities and mold these according to your class level.

**Activity for students:**

Design three different activities to develop the value of truth, kindness and empathy among elementary students.

6.7 EXERCISE

1. What do you understand by moral development?

2. Why the development of morality is essential for an individual's success in society?
3. Summarize the main ideas presented in theories of moral development. Why this knowledge is important for an ECE teacher?

4. Extend your reading on theories of moral development and prepare a list of salient features of moral development prescribed by each theory.

5. Design two activities each to promote moral development at preschool, kindergarten and elementary level.

6. Look at the picture given below. How can you use it for developing moral values in your kindergarten class?

6.8 BIBLIOGRAPHY


http://life.familyeducation.com/morality/toddler/53832.html#ixzz3rZKvsQTv
Unit-7

LANGUAGE DEVELOPMENT

7.1 OBJECTIVES
After the study of this unit the students shall be able to:
1. Describe what is language and how it develops?
2. Different theories regarding the development of language.
3. Explain diverse components involved in the development of language.
4. Describe how environment effects the development of language.
5. Explain development of language at preschool and Kindergarten level.
6. Development of language at elementary level.

7.2 OVERVIEW
Language is a system of communication used by many of us to communicate our feelings, information and expression to our fellow beings. Language is a system of communication based upon symbols, words, phrases and sentences. It is language that differentiates humans from non human creatures. Language may be described as being ordered collection of standardized signals and structures according to set rules which are used as the means to communication. The process by which children communicate and understand the language is called Language development.

More than other different aspects of development, it mirrors the expansion and maturity of mind. Children initially express single words and subsequently join words together i.e. join two words to form sentences and later three-words to form sentences. Children everywhere throughout the world pursue alike model of language development. They produce different sounds from birth to attract the attention, recognize sounds, utter single words, then many words and then go on to phrases and sentences. Many different theorists developed different theories regarding language development like Skinner, Chomsky and Vygotsky.

This unit explains language and its development as well as transitions and key signs of language development. It also includes theories of language development and components of language. Besides, it also takes into account the Sequence of language development at preschool, kindergarten and elementary level. The unit concludes by suggesting some physical activities geared to the level of pre-school, kindergarten and elementary school children.

7.3 WHAT IS LANGUAGE?
We all communicate with one another. We share information, convictions, opinions, wishes, dangers, thanks, promises, guarantees, feelings and emotions. We can laugh at to express entertainment, joy, we smile to convey our entertainment, delight, support or zealous sentiments, we shout to communicate our anger, energy or nervousness, we
raise our eyebrows to convey sentiments of shock or opposition, however the system of communication before everything else is language.

We use the language as the system of communication that relies upon words and composition of words to form sentences. Language is a method that is mainly used for communication. It is called linguistic communication. Chuckling, grinning, and screaming are ways that are named as non linguistic communication. Generally all non human creatures exchange information. However they are not familiar to such a system of communication which is as complex as the language. They correspond by non linguistic means taking after our grinning, snickering, shouting, gripping of tighten hands, and rising of eyebrows.

It is language that differentiates humans from non human creatures. As humans utilize the language capacity consistently to grip thoughts, share the emotions, comment on the world, and see one another's personalities. Language can be narrated as an organized arrangement of uniform signals and rule governed structures that are utilized as means for communication. Language occurs through reading, writing, listening and speaking. In order to become fully functioning members of school as well as the society, we must learn the components, the principles, the structure, and the traditions of language system.

Dear student: As discussed above, we can summarize the language as:

- We communicate our different emotions with others
- Language is a system of communication
- Language differentiates humans from non humans

7.4 WHAT IS LANGUAGE DEVELOPMENT?

Language development is the process by which children come to understand and communicate language. From birth up to the age of five, children develop language at a quick pace. The phases of language development are wide-ranging among people. On the other hand, the age and the pace of language development vary from child to child at which they achieve every landmark. As far as the language development in children is concerned, it should be compared to the standards and not with their fellow children. Usually the rate of language in girls is speedier as compared to the boys. As compared to some other aspects of development, it mirrors the growth and development of mind. After the age of five it generally turns out to be much difficult for the children to learn it. Receptive language develops quickly than expressive language development. Two unique styles of language development are as under.

7.4.1 Referential language development: Children at first express only words and afterward join them together, at first into sentences comprising of two-word and later into sentences comprising of three-word. It is a style of right time learning of language.
in which children use language for the most part to label objects. This style is useful to young children because this way extends their understanding of vocabulary.

7.4.2 Expressive language development: Kids first utter sounds like babbles that copy the rhythm and beat speech. Most kids utilize a blend of these styles. Another commonly known style involved in language learning is expressive style. In this style little children apply language to discuss their specific emotions and requirements.

Dear student: As discussed above, we can summarize the language development as:
- Language development is the process to understand and communicate language.
- Referential language development is denoted as labeling different objects.
- In expressive language development children discuss their emotions and needs.

<table>
<thead>
<tr>
<th>Self-Assessment–1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Differentiates humans from non-humans</td>
</tr>
<tr>
<td>a. Culture</td>
</tr>
<tr>
<td>b. Civilization</td>
</tr>
<tr>
<td>c. Language</td>
</tr>
<tr>
<td>d. Communication</td>
</tr>
<tr>
<td>2. Referential language development id useful for</td>
</tr>
<tr>
<td>a. Babies</td>
</tr>
<tr>
<td>b. Children</td>
</tr>
<tr>
<td>c. Young learner</td>
</tr>
<tr>
<td>d. Adults</td>
</tr>
<tr>
<td>3. Children first utter</td>
</tr>
<tr>
<td>a. Sounds</td>
</tr>
<tr>
<td>b. Words</td>
</tr>
<tr>
<td>c. Phrases</td>
</tr>
<tr>
<td>d. Sentences</td>
</tr>
<tr>
<td>4. Styles of language development are</td>
</tr>
<tr>
<td>a. One</td>
</tr>
<tr>
<td>b. Two</td>
</tr>
<tr>
<td>c. Three</td>
</tr>
<tr>
<td>d. Four</td>
</tr>
</tbody>
</table>

7.4.3 Transitions in language development
There are several transitions that help to explain kid’s acquisition regarding language development.

First transition occurs when first year ends and it proceeds in the school year with the emergence of words into essential vocabulary.
**Second transition** happens when children change from saying one word at once to joining words into expressions and basic sentence about the end of school year.

**Third transition** happens when kids move afar utilizing simple sentences to express one thought to complex sentences communicating different thoughts and the relationship between them.
7.4.4 Key signs of language development

Children everywhere throughout the world pursue alike model of language development. Several milestones of which are as follows

**Babbling and gestures:** Children dynamically make sounds from birth to onward years to attract attention. These continue till the mid of the first year.

- **Crying:** Infants even cry during childbirth which can indicates trouble but these sounds indicate many other things also.
- **Cooing:** Children first utter murmuring sounds which are pronounced from backside of the throat and generally convey delight on interaction with the care giving persons.
- **Babbling:** Amid center of the first year children babble, that is they deliver series of consonants.
- **Gestures:** Newborn children begin utilizing motions. They may wave bye-bye, nod their head to signify "yes".

---

**Self Assessment–2**

1. First transition proceeds in ____ years.
   a. School  
   b. High school  
   c. Higher secondary school  
   d. College

2. Second transition ends on...
   a. School  
   b. High school  
   c. Higher secondary school  
   d. College

3. Children make sounds to
   a. Have food  
   b. Have shelter  
   c. Attract attention  
   d. To have milk

4. Children babble amid center of the year
   a. Fourth year  
   b. Third year  
   c. Second year  
   d. First year  
   e. 
Recognizing language sounds: From birth up to six months of age newborn children perceive sounds when they change, despite what language they originate. All through the following six months, newborn children show signs of language development at seeing the conformities in sounds from their language, the one their elders speak and bit by bit lose the ability to differentiate that are not noteworthy in their own particular language.

First words: Between 8-12 months of age, babies frequently show their first conception of words. Children say their first words when they have been gesturing to correspond with their parents regularly and utilizing their own particular sounds. The presence of first word is continuation of this communication process.

A Child first word may be the name of individuals, well known animals, toys, body parts, garments and family things. Kids regularly express different goals with their one single word. The baby's spoken vocabulary quickly increases after the first word is pronounced. One and a half year old baby can talk around fifty words. On the other hand near the age of almost two years they can have words around 200.

Two words utterances: Children during the age of 18-24 months speak two word expressions. To go on expression with just two words, the kids depend very much on motion, manner and the background.

Dear student: As discussed above, we can summarize transitions and the key signs of language development as:
- Children go through the different transitions in language development.
- These transitions help him in acquisition of language.
- Children follow different patterns in language development like babbling, recognizing sounds, uttering one then two and then many words.

7.5 THEORIES OF LANGUAGE DEVELOPMENT

7.5.1 The Learning Perspective
This point of view contends that children copy what they see and hear. Kids learn from punishment and reinforcement. The main scholar associated with this learning viewpoint is B.F. Skinner.

7.5.2 The Nativist Perspective
The nativist point of view narrates that people are naturally made to learn knowledge. Noam Chomsky is the main scholar connected with this point of view. He recommended that the people contain a language acquisition device (LAD). It is comprised of grammatical rules which permit the children to understand the principles of language which they generally listen.
7.5.3 Inter-actionist Perspective
Inter-actionists argue that language development is both biological and social. They contend that language learning is affected by the desire of children to communicate with others. Children conceive language with the brain that develops gradually and makes them to obtain new understandings which they are convinced to report to others. The main scholar connected with this theory is Vygotsky. This model concentrates on Vygotsky's model of collaborative learning. Collaborative learning is the way to go through discussions with more developed individuals and it can help children both psychologically and phonetically in language development.

Dear student: As discussed above, we can summarize the theories of language development as:
- According to learning perspective, we learn by reinforcement and punishment.
- Nativist perspective views that people are naturally inclined to learn language.
- Integrationists are of the view that we learn language through our interaction with others and it views language development in social context.

7.6 COMPONENTS OF LANGUAGE

7.6.1 Phoneme
A phoneme is a basic unit of phonology. It is the smallest unit of sound that may cause a change of meaning within a language. It doesn't have meaning by itself. Phonemes match up to the sounds of the alphabet, although there is not always a one-to-one connection between a letter and a phoneme.
For example, the word “hat” has three phonemes:
1- /h/
2- /a/
3- /t/

However, the word "shape," has five letters but only three phonemes:
1- /sh/
2- /long-a/
3- /p/

English language has around 45 different phonemes, which are associated to letters or combinations of letters. A phoneme can have a specific pronunciation in one word and a different pronunciation in another word.

7.6.2 Phonology
Phonology is the branch of language, which is concerned, with the orderly organization of sounds in language. Generally it has focus on the study of system of phonemes in language. It covers linguistic analysis either at the level of word or at the levels of language where sound is assumed to be structure for conveying linguistic meaning. Phonology includes the study of equivalent organizational systems of signs in language. The study of verbal communication structure within the language is known as the phonology. The smallest unit of sound to formulate the language is called the phoneme.

For example,

Word “CAT” contains three phonemes.

Word “HAT” contains three phonemes.
Word “BAT” contains three phonemes.

Source: Google images

The word phonology also refers to the phonological system (system of sounds) of the language. This is the fundamental systems which a language is comprised of. Phonology is very often distinguished from phonetics. Phonetics concerns with the physical production, audio communication and understanding of the sounds. Phonology describes the way sounds function within a language to encode the meaning. Phonetics belongs to descriptive linguistics and phonology to theoretical linguistics.

7.6.3 Morphology
The term morphology is Greek and is a makeup of

Morph    Means shape, form.
-ology    Means the study of something.

The term is also used in
1. Biology as the scientific study of structure of animals and plants
2. Geology as the study of formation and evolution of rocks and land forms.

Morphemes include base words, like.

“Cat”

“Cow”
And affixes like

- **Un-** planned, **Un-** seen, **Un-** pleasant
- **Re-** play, **Re-** tell, **Re-** call

Knowledge of the morphology is related to vocabulary development and reflects the smallest building blocks for comprehension. Morphemes, the basic unit of morphology, are the smallest meaningful unit of language. So, a morpheme is a series of phonemes that has a special meaning. Some morphemes are individual words (such as "eat" or "water"). These are known as free morphemes because they can exist on their own. Other morphemes are prefixes, suffixes, or other linguistic pieces that aren’t full words on their own but do affect meaning such as the "-s" at the end of "cats" or the "re-" at the beginning of "re-play".

### 7.6.4 Syntax

**Syntax** is related to the structure of sentences and it determines which words to go where. Studying of syntax allows us to understand the rules about how language works. It is believed that there are certain rules that apply to all languages. Syntax is a set of rules for constructing full sentences out of words and phrases. Every language has a different set of syntactic rules. In English, the smallest form of a sentence is a noun and a verb phrase. Adjectives and adverbs can be added to the sentence to provide further meaning. Word order matters in language. For example, the English sentences the Ahmad ate the apple and the apple ate the Ahmad do not mean the same meaning, even though they contain the exact same words.

### 7.6.5 Semantics

**Semantics** is the study of meaning. What is meaning? How is meaning created in language? How do people understand language and why do we understand it like we do? One of the main reasons we use language is to pass meaning from one person to
another, and semantics deals with it. Grammatical structure of the language helps us understand the language. *Semantics* refers to the ways in which a language conveys meaning. Semantics moves beyond the literal meaning of words in language and is culture dependent.

### 7.6.6 Pragmatics

It is the study of human actions, thoughts and linguistic signs, (words and sentences) in real situations. Pragmatics refers to the ways the members of a community use the language. The way they speak to their parents is not the same way we speak with our fellow children. The language used in a formal conversation may have less resemblance to what we could hear at a lunch with our fellow children. The conversational style that we use in our day to day conversation is much more different from that of the language we use when we are reading a storybook for a kid. Pragmatics deals with knowing the difference between the two styles and when to use which style.

Dear student: As discussed above, we can summarize components of language as
- Phoneme is the basic unit of language and is concerned with the sounds of alphabets.
- Phonology deals with the sounds in a language.
- Morphology is related to the vocabulary building.
- Syntax deals with the structure of sentence and the sequence of words in it.
- Semantics studies meanings in a language.
- Pragmatics studies human actions and their explanation by signs in language.

<table>
<thead>
<tr>
<th>Self-Assessment–3</th>
<th></th>
</tr>
</thead>
</table>
1. Is a basic unit of phonology?
   a. Syntax
   b. Morphemes
   c. Pragmatics
   d. Phoneme

2. Branch of language which is concerned with the orderly organization of sounds
   a. Morphology
   b. Phonology
   c. Pragmatics
   d. Syntax

3. Morphology is a term
   a. British
   b. French
   c. Greek
   d. Latin

4. Syntax is related to the structure of
   a. Alphabet
   b. Word
   c. Phrase
   d. Sentence

7.7 ENVIRONMENTAL INFLUENCES ON LANGUAGE

Language development is never a static procedure; it is fairly a procedure that is always advancing. One can contrast this with the physical environment of children. The rate of these developments is affected by the environment which plays an essential part in the Language development of a kid. Some language researchers see the similar attitude in teenager’s language acquisition everywhere throughout the world. However, other language specialists contend that context in which learning happens clearly, impacts language acquisition.

One perspective clarifies the effect of environment on language development. It named the behaviorist theory. Main advocate of this theory is B.F. Skinner. He recommended that language is gained in the same manner as other behavior, through operant conditioning. In operant conditioning, learning is characterized as changes in behavior as a result of interaction that happens after a response. Skinner said that operant conditioning happens in language development when sounds are made by a youngster and afterward reinforced by their guardian's responses. Result of this reinforcement
may be an energized smile. This makes the kid more prone to repeat the word and associate it with an object or occasion. This operant conditioning consolidates with imitation to permit quick language development to happen.

There is another perspective that explains the collaborations between inherent ability and environmental impacts. Two fundamental sub-groups exist inside of this point of view:

7.7.1 Information-processing perspective of language development
Some information processing scholars expect that kids comprehend complex language through intuitive intellectual abilities consolidated with their environmental experiences. They concur with the biological theories that newborn children are conceived with a surprising capacity to examine language. They additionally contend that these capacities are likely not adequate to account for the greater part of their language development.

7.7.2 Social interaction perspective of language development.
Proponents of social interaction theories stress that social aptitudes and language experiences are necessary to language development. An active child keeps the capacity to develop language will try to convey what he wants to say. At the point when the child makes these efforts at language development, parents provide the experiences that help him in this process.

Dear student: As discussed above, we can summarize influence of environment on language.
- Language development is an ever changing process.
- Different perspectives exist that explain the effects of environment on language development.
- Skinner believes that language is gained in the same manner as behavior.
- Another perspective sees inheritance as vital in influencing language development.
- Some view that children learn language through cognitive skills but some others attach social context to it.

7.8 LANGUAGE DEVELOPMENT AT PRESCHOOL AND KINDERGARTEN LEVEL

<table>
<thead>
<tr>
<th>From birth</th>
<th>Receptive Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language learning begins since childbirth. Children at this stage are conscious of the sounds in the surroundings. They pay attention to the verbal communication of those close to them. They cry if there is an unforeseen commotion. They wake up by loud noise and feel still due to the noise.</td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td>Domain</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>0-3 months of age</td>
<td>Expressive Language</td>
</tr>
<tr>
<td></td>
<td>Receptive Language</td>
</tr>
<tr>
<td>4-6 months</td>
<td>Expressive Language</td>
</tr>
<tr>
<td></td>
<td>Receptive Language</td>
</tr>
<tr>
<td>7-12 months</td>
<td>Expressive Language</td>
</tr>
<tr>
<td></td>
<td>Receptive Language</td>
</tr>
</tbody>
</table>
|                   | Expressive Language     | Sound of child's babbling changes. This is on the grounds that it now incorporates more
consonants, and additionally long and short vowels. The child utilizes speech or different sounds keeping in mind the end goal to stand out enough to be noticed. Also, child's first words (most likely not talked unmistakably) have appeared! ("Baba", "Cato", "Bye Bye", "Ta Ta")

<table>
<thead>
<tr>
<th>1-2 years</th>
<th>Receptive Language</th>
<th>Children focal point is pictures in the book when we call their names, and they can indicate body parts when they are asked (ear, neck, hand). They can understand commands (&quot;Pull the door!&quot;, &quot;Don't go there&quot;). They can understand basic questions (&quot;What's in your name?&quot;). They like to listen stories. They can sing melodies. They can say rhymes.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expressive Language</td>
<td>The child is builds up new words as time goes on. They can ask two-word questions like &quot;Whose papa?&quot; &quot;What's cat?&quot; They can combine two words in different ways to form Sentence like &quot;No catto&quot;, &quot;More water&quot;).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2-3 years</th>
<th>Receptive Language</th>
<th>At this point little child will comprehend two stage summons (&quot;Get your socks and place them in the crate&quot;) and comprehend differentiating ideas or implications like hot/cool, stop/go, in/on and decent. He or she notifies sounds like the phone or doorbell ringing and may point or get to be energized.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expressive Language</td>
<td>He or she appears to have a word for nearly everything. Articulations are typically one; a few words in length and relatives can more often than not comprehend them. The baby may inquire, or attract the attention for something by identification it (&quot;Apple&quot;) or by its traits (&quot;Red!&quot;).</td>
</tr>
<tr>
<td></td>
<td>Receptive Language</td>
<td>Expressive Language</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3-4 years</td>
<td>The child understands simple questions like &quot;Whose?&quot;, &quot;When?&quot; and &quot;Why?&quot; They can listen to us when we call them and even from out of room.</td>
<td>Sentences are turning out to be longer as the youngster can consolidate four or more words. The child discusses happenings, campaigns and interesting encounters around him with his friends and mates.</td>
</tr>
<tr>
<td>4-5 years</td>
<td>At this stage, children are being able to value different stories. They can answer crucial questions related to them. They are now being able to observe nearly everything that is said before them anywhere they are present. Their capacity to perceive sound legitimately all the time ought not to be in uncertainty.</td>
<td>Children talk easily in a quite easy to listen manner. They can develop long and clear-cut sentences (&quot;We went to the hotel and ate fish which was delicious; it was a great fun for all of us&quot;). They can narrate a lengthy story based upon their imagination. They are now able to pronounce sounds more accurately. The children can tell wonderful, exciting, artistic stories.</td>
</tr>
</tbody>
</table>

Dear student: As discussed above, we can summarize language development language development at pre-school and Kindergarten level as:

- Language development starts from birth when baby produces sounds to realize its existence to others.
- During 0-3 months of age children reflects his emotions by listening the different sounds and smiles at viewing different personalities.
- During 4-6 months children show their reactions by yes or no and produce babbling sounds.
- 7-12 months is the age of fun and the babbling of children changes.
- Between 1-2 years of age, the children focus on pictures, they can indicate body parts and there is increase in learning of words.
- During 2-3 years of age, comprehension of compound words develop, the child can differentiate different ideas and develops the capacity to have words for nearly everything.
- During 3-4 years of age, the children listen more clearly when we call and his structure of uttering sentences extends.
During 4-5 years of age, the child can answer questions and can appreciate stories and can talk more clearly and more easily.

**Activities**
- The teacher will ask the children to read story books and discuss the stories in it with the class fellows.
- The teacher will pronounce clearly and slowly the sounds of different rhyming words and ask the children to concentrate on these sounds.
- The teacher will ask the children to retell stories and discuss any such occasion happened with the students.
- The teacher will talk with the children about their day by day routines.
- The teacher will present different objects and actions before the students and will ask the children to label them.
- The teacher will talk about similarities and diversities in different things.
- The children will sing a poem before the children and will help the children to make them understand the poem.

**7.9 LANGUAGE DEVELOPMENT AT ELEMENTARY LEVEL**

As children go through elementary school years, they expand skills which make it workable for them to read and write.

**7.9.1 Vocabulary and grammar**

They turn out to be conscious of the procedures and perceptions connected with words and they turn out to be more logical in their way to deal with words. This logical methodology is clear if youngsters are requested the first thing that rings a bell when they heard a word. Amid the primary school years, youngsters turn out to be progressively ready to comprehend and utilize complex syntax. They figure out how to utilize language in a more associated manner. Presently they can deliver relating sentences to each other and creating portrayals, characterizing stories that hang together and bode well. Youngsters must have the capacity to depict things orally before they can be relied upon to destroy those composed assignments.

**7.9.2 Meta-linguistic awareness**

It eludes to the capacity to objectify **language** as a procedure and in addition an artifact. The idea of meta-linguistic awareness is useful to clarifying the execution and exchange of **linguistic knowledge** across languages (e.g. code exchanging and also interpretation among bilinguals). It can be narrated as the capacity to deliberately reflect on nature of the language, by means of the subsequent skills:

1. Awareness that language has the potential more prominent than that of straightforward images.
2. Awareness that words are distinct from their referents (meaning lie in our mind and not in the names, i.e. Mishell is Mishell and Danyal is Danyal.
3. Awareness that language has a structure that can be controlled (understanding that language is impressionable: you can change and compose things in a wide range of courses (for instance, if something is composed in a linguistically erroneous manner, you can transform it).

Meta-linguistic awareness is also called "meta-linguistic capacity", which can be characterized likewise as metacognition ("thinking about knowing"). Meta-linguistic awareness can likewise be characterized as the capacity to think about the utilization of language. As Meta-linguistic awareness develops, kids start to perceive that announcements may have a literal meaning. They start to make more continuous and modern utilization of illustrations, for example, the likeness, "We stuffed the room like sardines". Between the ages of 6 and 8 most kids start to develop their meta-linguistic awareness and begin to perceive incongruity and mockery. These ideas require the kid to comprehend the subtleties of an expression's social and cultural connection.

Dear student: As discussed above, we can summarize language development at elementary level as

- At this stage the children can progressively comprehend and utilize complex syntax.
- The child is able to use language in a more concise way.

**Activities**

- The teacher will let the students to read different books and will discover reading material that is of interest for the children.
- The teacher will encourage the students to form associations about what they have read.
- The teacher will help the students to make associations between what they observe at school, at home and in other day by day life routine.
- The teacher will talk distinctly with the students and will help them comprehend the conversation and will discuss issues they experience during comprehension of the conversation.
- The teacher will help the students in recognizing spelling examples, for example, the beginnings and endings of different words which he will pronounce before them.
- The teacher will encourage the students to compose different words with the help of the word he will pronounce before them like hat, cat, bat etc.
7.10 EXERCISE

1. Why language is important in our life?
2. How language develops?
3. What are different signs of language development?
4. Compare different theories of language development?
5. Identify and explain different components of language with examples?
6. How environment influences language development?
7. How language develops in pre-school and kindergarten children?
8. Elaborate the development of language in elementary school years?

Answers to Self-Assessment Exercises
Self-Assessment 1
1. C
2. C
3. A
4. B

Self-Assessment 2
1. A
2. A
3. C
4. D

Self-Assessment 3
1. D
2. B
3. C
4. D
7.11 BIBLIOGRAPHY


Clark, John; Yallop, Colin; Fletcher, Janet. (2007). An Introduction to Phonetics and Phonology (3rd ed.). Massachusetts, USA; Oxford, UK; Victoria, Australia: Blackwell Publishing.


Mora, Jill Kerper.(2009). Metalinguistic awareness as defined through research. San Diego State University.


Unit-8

HUMAN LEARNING & CLASSROOM TEACHING

8.1 OBJECTIVES
After completion of this unit, the student will be able to:
1. Describe experiments that led to the theories of Associative Learning and cognitive learning.
2. Differentiate between the associative and the cognitive learning theories.
3. Describe how teachers can use learning theories to help students learn complex skills.
4. Relate the importance of conditioning in learning.

8.2 OVERVIEW
Learning takes place in many ways. Sometimes it is international, as when students acquire information presented in a classroom or when they look something up in the encyclopedia. Sometimes it is unintentional, as in the case of the child’s reaction to the needle. All sorts of learning are going on all the time. As you (the reader) are reading this chapter, you are learning something about learning. However, you are also learning that educational psychology is interesting or dull, useful or useless. Without knowing it, you are probably learning about where on the page certain pieces of information are to be found. You may be learning to associate the content of this chapter with unimportant aspects of your surroundings as you read it, such as the musty smell of books in a library or the temperature of the room you are reading in. The content of this chapter, the placement of words on the page, and the smells, sounds, and temperature of your surroundings are all stimuli. Your senses are usually wide open to all sorts of stimuli, but you are consciously aware of only a fraction of them at any one time.

The problem faced by educators is not how to get students to learn; students are already engaged in learning every waking moment. Rather, it is to help them learn particular information, skill, and concepts that will be useful in adult life. How do we present students with the right stimuli on which to focus their attention and mental efforts so that they will acquire important skills? That is the central problem of instruction.

For this we will present some learning theories in this unit, which will be helpful for the teachers and students to overcome these problems.

8.3 MEANING AND NATURE OF LEARNING
Learning means to bring changes in the behaviour of the organism. It is very difficult to give universally acceptable definition of learning because various theories developed by psychologists attempt to define the term from different angle. Learning in psychology has the status of a construct. Construct means an idea or image that cannot be directly observed like electrons or genes but which is inferred from the behaviour of the organism. Melvin H. Marx says; “learning is a relatively enduring change in behaviour which is a function of prior behaviour” (usually called practice).

The words given above emphasize four attributes of learning as a process the first is that learning is a permanent change in behavior. It does not include change due to illness, fatigue, maturation and use of intoxicants. The second is that learning is not directly observable but manifests in the activities of the individual. The third attribute of learning is that it results in some change of enduring nature. The fourth and the last is that learning depends on practice and experience. Hilgard defined learning as, a change in a subject’s behaviour to a given situation brought about this repeated experience in that situation, provided that the behaviour change repeated experiences in that situation, provided that the behaviour change cannot be explained on the basis of native response tendencies, maturation, or temporary states of the subject (e.g. fatigue, drugs, etc).

**An Earlier View of Learning:** An earlier view of learning regarded the teacher as a dispenser of information and the children as the passive absorbers. It was believed that the central nervous system could be developed through experience in much the same way as the muscular system reading and other communicable languages skills were taught principally by isolated drill in both phonics and phonetics. All this rendered learning somewhat distasteful task for the learner.

**A Later View of Learning:** A later view regarded learning “as a special form of activity in which children responded specifically to particular stimuli in certain prescribed situations.” According to this view, commonly referred to as stimulus-response psychology, learning occurs as a result of modification of the synaptic connections of then neurons or as a synthetic process of forms of reflex behavior. Accordingly, the subject matter and the skills to be learnt should be organized specifically for instructional purposes. The stimulus-response theory, developed by E.L. Thorndike made use of certain laws of learning, namely, readiness, exercise, and effect. Motivation is primarily extrinsic and frequently places emphasis on rewards and penalties instead of the activity itself or its purpose.

**A Recent View of Learning:** One of the recently developed views of learning is based on the biological concept. Accordingly, the living organism develops by the process of individuation from the central (central nervous system) to the peripheral areas (arms, legs, hands, and feet). This view of learning is popularly known as the organismic, purposive theory. It is also referred to as one of the field theories of learning.
This leads us to define learning in the words of some of the experts on the subjects.

8.3.1 Learning Defined
Learning has been explained and defined in a number of ways. A few of the views regarding the nature of learning are given below.

(1) **Munn’s Views:** According to Munn, “Learning is more or less permanent incremental modification of behaviour which results from activity, special, training or observation.”

(2) **Skinner’s View:** According to Skinner, “Learning is both acquisition and retention.”

(3) **View of Gates:** According to Gates, “Learning is medication of behaviour through experience.”

(4) **View of Daniel Bell:** In the words of Daniel Bell, “Learning is modification due to energies of organism and the environment impinging on the organism itself.”

(5) **View of Thorpe:** Thorpe says, “We can define learning as that process which manifests itself by adaptive changes in the individual’s behaviour as a result of experience.”

(6) **Kimble’s View:** G.A Kimble opines, “Learning refers to more or less permanent change in behaviour, which occurs as a result or practice.

(7) **View of Kingsley and Garrey:** Kingsley and Garrey emphasize that the act of adjustment of environment is the process of learning. According to them, learning is a “a process by which an organism, in satisfying his motivation, adopts or adjusts to a situation in which it must modify its behaviour in order to overcome obstacles or barriers.

Thus, the process of learning includes the following:

a. Acquisition of new experiences.

b. Retention of old experiences in the form of impressions, engrams or skills.

c. Development and modification of experience,

d. Synthesis and organization of the old and the new experiences, resulting in novel pattern called learning.

(8) **A very comprehensive definition is given by Crow and Crow as under:** “Learning is the acquisition of knowledge, habits and attitudes. It involves new ways of doing things, and it operates in an individuals’ attempt to overcome obstacles or to adjust to new situations.”

The following points will help us to understand the nature of learning as modification behaviour.

(i) **Learning versus Maturation:** All learning is change in behaviour but all change in behaviour is not learning. Certain changes in behaviour occur due to maturation, drug and fatigue, for example, after long hours of continuous work, individual shows deterioration in his performance. This change in the individual’s
performance is not due to learning but due to fatigue. When a man drinks alcohol or bhang, or takes some intoxicating drug, his behaviour is changed. This change in behaviour is not due to learning but due to the effect of drug or alcohol. Similarly when a housewife is angry or depressed she performs very poorly in her homework. This change in the performance of the housewife is due to her temporary, mental state.

Besides fatigue, drug or temporary.” Mental state, maturation also palsy an important role in bringing out change in behavior. For example the first time the child walks or talks, is an indication that maturation is at work. The swimming of tadpoles and the flying of birds also demonstrate the effect of maturation on behaviour.

Whatever training you may provide to an infant of 6 months old, he will not speak the language. The infant will speak the language only when a vocal organ is mature. The child first creeps, then crawls, and then walks. But the first behaviour creeping occurs only when the infant is mature to do. All these examples make it clear that changes in behaviour also occur due to maturation. Maturation, in this sense, means development of anatomical and physiological structures of the body. Learning refers to those changes in behaviour, which occur due to training, practice observation and experience but not due to maturation, drug, fatigue or temporary mental states of the individual. Moore, Manning and Smith (1978) have very rightly said, “Learning is limited to those changes in behaviour which are a result of training or experience, and not a result of maturation or temporary physiological or psychological states of organism.”

Certain changes in behaviour occur due to both maturation and learning. For example, a child cannot walk until his legs are strong enough to support his weight and until the development of proper neural structures takes place, but children do not walk in the same manner. The manner of walking is learned; similarly, a child cannot speak before the vocal organs develop. But children do not speak the same language. Those who speak the same language, speak in different ways. Speech is also a learned behaviour.

Maturation helps in the learning process. We cannot learn anything without our bodies taking part. The things we learn, the speed with which we learn them and our ability to retain them all depend on the interaction between our maturation process and our learning experiences. There are different ages or stages of maturation and each stage certain “kinds of learning take place. Just as healthy maturation contributes to learning, immature physical systems also contribute to deficit in learning. For example, the muscles and other structures of the newborn baby are not sufficiently mature to permit walking. Since he cannot walk and get
around in the world, he can obviously know very little about it. Thus maturation determines learning.

(ii) **Permanence of Learning:** Changes in behaviour may be temporary or permanent. But any real learning leads to permanent changes in behaviour. Learning to speak a language or to write in the language is an instance of permanent change in behaviour. But most classrooms learning situations do not support the idea that learning is permanent. Students learn a subject or a chapter; and after the examination they forget most of what they were taught. This happens so, because what is learned does not become a part of their daily life. By learning they mean ‘memorization’ or ‘being able to pass an examination on the subject’ it does not matter whether they remember the facts permanently or forget it after the examination.

(iii) Changes in behaviour may take place in the desirable direction or in the undesirable direction. For example, children learn good habits as well as bad habits, desirable attitudes as well as undesirable attitudes. Education must aim at teaching children certain desirable behaviours, habits or attitudes and modifying their undesirable habits, attitudes or bahaviour.

(iv) Learning can be both incidental and intentional, the school curriculum, teaching methods and learning systems must be oriented to both intentional and incidental learning.

(v) Learning involves both overt acts and covert processes. Children learn attitudes and values, which are covert processes. When we define learning as change in behaviour, it includes both overt acts and covert processes.

(vi) Learning results from reinforced practice. Practice makes a man perfect. Practice, training or experience leads to improvement in present learning. But practice alone does not cause improvement. Children will learn to do those things for which they are rewarded (praised, honored, recognized) and will learn to avoid doing those things for which they are punished (blamed, or getting disproval). Some type of reinforcement should therefore, follow practice. Learning should always be associated with reinforcement.

(vii) Learning is both a process and a product. Learning as a process includes such things as how the child is learning (discovery learning, meaningful learning, rote learning, trial and error learning, conditioning, insightful learning etc), the nature of interaction between the child and the teachers, and many other factors such as coding and rehearsal which operate at the time of learning. Learning as a product includes the results or outcomes of learning. The outcomes of learning may be cognitive (learning a concept, a rule or principle, language, etc) affective (learning attitudes, emotions
values etc.), or motor learning (learning skills such as typing, playing basketball, etc.
Outcomes of learning, not only include the types of achievement but also the level of
achievement such as mastery over the task, or learning just the essentials. In short,
learning as a product includes the level and type of competencies attained by the
child in relation to the learning task.

8.3.2 General Characteristics of Learning
The following are the general characteristics of learning:

(1) **Learning is Adjustment**: Learning involves adjustment of the individual to his
environment. The individual must learn to adjust himself to the changes that take
place around him.

(2) **Learning is Growth**: Learning must result in the growth of the child. An immature
child is developed into a mature person through the process of learning.

(3) **Learning is Organizing Experience**: Learning is not like adding one experience to
the other it is rather, organizing the new experience with the old ones, thus giving
rise to a new form of behaviour. Thus, learning involves the proper organizing of
experiences in manner.

(4) **Learning is Purposeful**: The more intense the purpose of the individual, the more
rapid the learning. Lack of purpose in learning will hamper learning. Thus,
purposeful learning is always more rapid and permanent.

(5) **Learning is Active**: Better learning will take place only if the learner is actively
engaged in the learning process. Thus, active participation of the pupils is
essential in the learning process.

(6) **Learning is intelligent and Creative**: Learning involves an intelligent interpretation
of the situation, and some selectivity in the response. This necessarily involves
intelligent and creative thinking.

(7) **Learning Affects the Conduct of Learners**: Learning affects individuals to adjust
himself to the environment. This is brought about through some sort of change
and modification of one’s behavior. Thus the behaviour or conduct of the
individual undergoes change on account of learning.

(8) **Learning is the Product of the Environment**: Learning is essentially an adaptation
and adjustment to the environment.

Thus, environment has a great influence upon learning; learning cannot be divorced
from the environment.

8.3.3 Laws of Learning

cxix
Learning is a fundamental ingredient in the education of a child. Therefore, a teacher must understand fully, how learning takes place in the best possible manner, in this connection, it is imperative that the teacher should know what are called ‘Laws of Learning’ as given by Thorndike and others. They must be accepted and fundamental laws of learning are:

(i) Law of Readiness
(ii) Law of Exercise
(iii) Law of Effect

In addition to these, certain other laws of learning will also be mentioned briefly.

(i) **Law of Readiness**: This law emphasizes the importance of readiness to learn. “When a person feels ready to learn or to act, he learns or acts, more effectively and with greater satisfaction than when not ready”. This implies that the learner must be mentally prepared to learn. This emphasizes the importance of motivation in learning. The learner must be brought in the proper frame of mind, and his curiosity must be increased for bringing about effective learning.

## Educational Implications

1. Arouse child’s readiness to learn, Herbart, the giver of Herbartian Steps, emphasized that the appreciative masses must be brought to the forefront before any learning takes place.
2. The law calls upon the teacher to motivate the child before he undertakes any teaching work.
3. The curricular activities should be according to the child’s mental level of maturity. This will ensure readiness as well as arouse curiosity for new things to be learnt.

(ii) **Law of Exercise**: Broadly speaking, this law implies that learning takes place by exercising, i.e. by doing or by actively participating in the performance. We learn what we do, and we do not learn what we do not do. That is why this law is also called ‘Law of Use’ and ‘Law of Disuse.

   (i) **Law of Use**, ‘When a modifiable connection is made between a situation and a response, that connection’s strength is decreased, this emphasizes the need and importance of practice. In other words ‘Practice makes perfect’.

   (ii) **Law of Disuse**. ‘When a modifiable connection is not made between a situation and a response over a length of time, that connection’s strength is decreased, this law implies the negative value of lack of practice.

The educational implications of the laws of exercise are great. This emphasizes the value of repetition, drill and practice for memorizing and mastering of something. This also emphasizes that much time should not elapse between one practice and the subsequent one, because long disuse may cause forgetfulness.
Educational Implications
1. If learnable acts are repeated, they become habit.
2. Bad habits can be eradicated. It is believed that if the children are made to practice consciously their bad habits, they automatically tend to leave them.
3. Forgetting can be delayed or diluted.
4. Skills like typing, shorthand, athletics and so on can be developed to the maximum.
5. The teacher must ensure that the act of repetition is carried out with a pleasant effect. An act of repetition, which is accompanied by a satisfying state, strengthens a connection.

(iii) Law of Effect: This law implies that if our efforts are accompanied by a feeling of achievement or satisfaction, we are further inspired to learn, and therefore, effective learning takes place, if our efforts are not accompanied by a feeling of satisfaction, not much of real learning will take place. In other words we may say that a response, which gives achievement of the goal and thus provides satisfaction, will be stamped in, while those, which are accompanied by dissatisfaction, will be stamped out.

Thorndike defines it as follows:
“When a modified connection between a situation and response is made, and is accompanied or followed by a satisfying state of affairs, that connection’s strength is increased, but when made and accompanied by an annoying ‘state of affairs, its strength is decreased’.

Thus, the learners, feeling or emotional state affects learning. In other words success and failure condition the learning to a great extent.

Education Implications
1. Children get to form good habit and attitude by associating with reward, satisfaction and praise.
2. Undesirable attitudes or acts of behaviour can be removed by associating them with unsatisfying desirable condition.
3. The acts of rewarding and punishing take this law into consideration.
4. Behaviour problems can be improved by associating them with annoying state of affairs.
5. Interest is directly related to this law. Children get interested in things which bring pleasant results.

Law of Recency
Recency occurrences are most vivid in our mind. The process of forgetfulness sets in as more and more time is elapsed. We remember these things better, which are comparatively recent.

cxxi
This emphasizes the importance of revision. The students should revise occasionally so that the things are again refreshed in their mind. Revision should be done after short intervals and also just before the examination. Without revision a student is apt to forget even the best assimilated matter.

**Law of Intensity of Stimulus**

The stronger the stimulus, the greater the learning. Thus, if stimulus is strong, the response will be strong. A student, who is more serious and enthusiastic about his studies, will make greater progress and achievement. The more serious and enthusiastic a student, the greater this achievement.

Thus, the function of the educator is to provide greater stimulus to the students. Setting high and lofty objectives before the students proves to be great stimulant. Genuine praise and appreciation also act as great stimulants. Periodic tests and examinations also serve the same purpose. Thus, we may say ‘that the success or the achievement of an individual is directly, proportional to stimulus or the interest that he takes in his work.

8.3.4 Learning as Modification of Behaviour

Learning is a very comprehensive term. Learning does not mean only the acquisition of knowledge or skill; it means much more than that. Thus, it includes acquiring of attitudes, values, likes dislikes, and a many other habits. A number of psychologists have defined learning as ‘change or modification of behavior. Thus, learning is the process by which an organism, as a result of its interaction with a situation, acquires a new mode of behavior, which tends to persist and affect the general behavioral pattern of the organism to some degree.

According to G.A Kimble, “Learning refers to a more or less permanent change in behaviour which occurs as a result of practice.”

Munn says. “Learning is more of less permanent, incremental modification of behaviour which results from activity, special training or observation.”

Thorpe defines learning as that “process which manifests itself by adoptive changes in individual’s behaviour as a result of experience”.

The above cited definitions emphasize that learning results in change or modification of behavior. But a pertinent question in tiffs connection is: Do all changes in behaviour occur due to learning? The answer is definitely ‘No’ there are so many other causes of change in behaviour e.g. fatigue, drugs, anxiety, emotion and so on. An individuals, after long hours of continuous work shows marked deterioration in his efficiency and performance. Radical changes in behaviour are noticed under the influence of
intoxicants; a child in a state of fear and anxiety shows poor performance, and so on. In addition to these, there are other factors, which result in the change of behaviour e.g. the natural process of maturation.

Thus, all learning is modification of behavior, but all modification of behaviour is not learning. We may conclude by saying that learning is limited to those changes in behavior, which are a result of training or experiences, and not a result of maturing or temporary physiological or psychological states of the organism.

It must be noted that learning stands for relatively permanent change or modification of behavior. The temporary, changes and behaviour does not constitute learning.

Moreover, modification of behaviour may take place in the desirable direction or in the undesirable direction. For example, children learn good habits as well as bad habits. Of course, teachers and parents must always encourage children to learn desirable behaviour patterns.

It is not practice, alone which causes learning. In fact, learning occurs under conditions of reinforcement. Thus, learning is a relatively permanent change in behaviour and is the result of reinforced practice.

**Basis of Behaviour**

Human behaviour results from two basic forces: Forces ‘inside’ the individual, and forces ‘outside’ the individual. The ‘inside’ forces mean man’s physical hungers, and his psychological urges the ‘outside’ forces are one’s aims and objectives, expectation of rewards, and other requirements of the society. An individual tries to modify his behaviour to meet his internal and external needs. Needs and requirements therefore are the basic causes of learning. These needs can also be classified in the following way:

1. Basic needs food, shelter, sex, etc.
2. Psychological needs satisfaction of urges and desires, pleasures and happiness.
3. Normative needs, attainment of aims and objectives, observing norms and values, acting according to the standards set by adults and society.

Behaviour, therefore, is prone to modification due to need-oriented learning, and is both, complex and purposeful. Therefore, the modification of behaviour through learning towards the fulfillment of the individual’s needs and socially approved way is the main concern of a teacher.

**8.3.5 Conditions of Learning**

Now, learning depends upon a number of factors or conditions. The more important one’s discussed below:

1. Motivation
Motivation is one of the basic conditions of learning. Motivation, in simple language, means interest. Learning is directly proportional to our interest in learning. Therefore, the fast and foremost action of a teacher is to create interest of the students in learning. The students must be brought in the proper frame of mind before they can learn anything effectively and successfully. The teacher to motivate the students for acquiring the new knowledge can use a number of devices. This includes questioning and the use of audio-visual aids. Successful motivation means successful learning.

i. **Clarity of Presentation**
The subject matter must be presented clearly before the students, so that they understand it properly. This is a very important condition of learning. Let us analyze the teaching-learning process. The teacher has a mental image of the subject matter that he likes to teach to the students. He uses the media of verbal explanations aided by various types of devices of teaching and audio-visual aids to get this mental image of knowledge conveyed to the minds of the pupils. The success of teaching as well as learning will depend upon the clarity of this mental image. If a clear image is formed in the minds of the students, the impression on their mind will clear and lasting, which means better learning. Therefore, the presentation of the subject matter should be as clear as possible to make learning effective and successful.

ii. **Providing Direct Experiences**
Nothing teachers like an experience and personal observation. Therefore, wherever possible, the students should be taught by the method of personal observation and experience. For example, no amount of verbal explanation will give us a clear picture of the Tarbela Dam; the best way to know and appreciate it is, to see it personally. Let the students observe and experience; and rest assure, true and effective learning will automatically take place.

iii. **Level of Intelligence**
Learning, to a considerable extent, depends upon the level of intelligence of the learners. Though the teacher cannot do much in this regard because the level of one’s intelligence is determined by heredity, the knowledge of the level of intelligence is determined by heredity, the knowledge of the level of intelligence of the learner can greatly help the teacher to devise methods of teaching suited to the learner’s level of intelligence. For example, a student with high IQ can easily learn through verbal explanations of the teacher; but a student with comparatively low, IQ needs the help of audio-visual aids and other devices of teaching in learning. The methods of teaching, therefore, have to be adapted to the level of intelligence of the learners.

iv. **Academic Atmosphere**
A very important and significant condition of learning is the provision of academic and intellectual type of atmosphere for the learners. The academic type of atmosphere prevailing at home and the school is a perpetual inspiration for the children to learn.
more and more. The reason is that the children imbibe an intellectual type of frame of mind from the academic atmosphere and that type of atmosphere can be created by providing a separate room for a study, providing books and journals and having intellectual talks and discussions. A good school library and a reading room can go a long way in creating academic type of atmosphere in the school.

v. **Effective Methods of Teaching**
Better and effective methods of teaching are essential for learning. Mostly, poor learning is the result of faulty methods of teaching. Instead of the old and traditional methods of teaching, modern and psychological methods of teaching should be used. A good method of teaching is that which makes the subject-matter is not clear to students on account of employing faculty’ methods of teaching. Best methods of learning will result in best type of learning.

vi. **Reinforcement**
Reinforcement is a procedure of associating pleasant or unpleasant experiences objects or events with the responses, made by the learner. The basic idea of reinforcing a response is either to strengthen a response or to weaken it. Appreciation and rewards help in the strengthening of certain behaviour in the child punishment and reproof help in the elimination of undesirable behaviours in children. Thus, reinforcement can be positive such as appreciation and rewards, and negative such as reproof and punishment. The idea of providing reinforcement in learning was first popularized by Edward Thondike and later by B.F. Skinner. Reinforcement plays a significant part in learning and therefore, the teacher should make use of this technique in the learning process.

vii. **Practice**
There is a great truth in the dictum that ‘Practice makes a man perfect’. We learn things by doing them over and over again. A long experience makes a person skilled and proficient, practice therefore, is one of the most important conditions of learning.

The importance of practice is rightly emphasized in learning. Practice implies repetition of a particular response in the presence of the stimulus. It is not possible for the child to learn the response correctly just performing the activity only once. He has to repeat the performance over and over again to fix and learn it properly and completely. This is also essential for longer retention. The learner will be able to perform the activity easily, properly, correctly and gracefully only through long and constant practice.

These are some of the most important conditions for promoting learning.

**8.3.6 Imitation in Learning**
The most common general innate tendency of the child is imitation. It involves copying others, it implies “doing as others do’. Imitation is cognitive in nature. Suggestion two has been described as unconscious imitation, but the important thing in imitation is that it is
action oriented. All actions are borrowed. We generally imitate those who are elder to us or whom we held in esteem this is particularly true of children. They like to copy their teachers and parents. It is manifested in their dress and talk. There is no logically conceived ground in imitation. It is an unconscious process but can be easily, noticed by others.

**Type of Imitation**

Drever has mentioned two types of imitation i.e. deliberate imitation and unconscious imitation. In the deliberate imitation, a person imitates deliberately. We put on hair-styles of famous film stars; imitate their modes of action deliberately. In the unconscious imitation one imitates others unconsciously. Children generally imitate others unconsciously.

McDougall has given to main types of imitation-primary imitation and secondary imitation. Primary imitation includes three types:

(i) **Sympathetic Imitation**

   When one feels as others feel (Quite Unconsciously), we have sympathetic imitation. A child cries when he sees others crying.

(ii) **Ideo-Motor Imitation**

   In the Ideo-Motor type of imitation, one imitates the actions of others, when in a match one person raises his hockey stick, spectators raise their arms.

(iii) **Deliberate Imitation**

   Deliberate imitation has been explained earlier.

In the secondary imitation McDougall includes two types’ i.e. meaningless imitation, and unconscious imitation. In the meaningless imitation, one imitates others without being able to understand the significance of copying. This is mainly, see in children. Unconscious imitation has been explained earlier.

**Laws of Limitation**

Imitation the following laws:

1. Imitation grows from higher to lower, urban to rural, rich to poor
2. All the aspects of imitation are borrowed
3. Imitation is more action than thinking
4. It goes one from internal to external
5. Imitation grows rapidly

**Imitation of Learning**

It is only recently that we have recognized the worth of imitation in the sphere of education. Formerly, it was thought that imitation kills originality and initiative of the child, ready-made learning is no learning. It is a low method of learning and the child only picks up second hand knowledge. It leads to stagnation. But now-a-days, we feel that imitation is of great utility in learning. It is economical and saves time. It is a great socializing agent. The following points will highlight its use:

1. **The Teacher**

   The behaviour of the teacher be worthy of imitation. He must be expert in his subject. He should be jack of all trades and master of one. He must have noble sentiments and character. His habits should be commendable. One thing is
particularly desired in language teachers. i.e. their good handwriting so that children imitate this.

(2) **Method of Teaching**
Although imitation is unconscious process but sometimes we have to teach some skills deliberately. This should make the purpose of the lesson clear. Teacher should explain all steps so that the students are able to imitate quickly. It will and to their efficiency.

(3) **Weak Students**
Imitation can help dull and weak student if they copy the brighter ones. Teacher should encourage such case. Let them adopt those study habits. Healthy competition can be encouraged in the class, prizes can be instituted.

(4) **Perfection**
It should be noted that there could not be cent percent imitation. The teacher should not insist on ideal and perfect imitation. He will kill initiative of the children. He will create problem for children this way.

(5) **School**
The school should provide models for children to copy. It must recruit best teachers having correct pronunciation and good handwriting. Model lectures should be arranged. To company of the child in the school must be good, for imitation is a great socializing force, if a child has bad friends he will very soon become a delinquent. There must be number of hobbies in the school. Drawings be hung on the walls and let the child copy those.

(6) **Good Books**
Encourage the students to read good books particularly biographies, and incorporate those ideas in themselves.

**8.3.7 Summary**
1. After describing the interpretations of learning, we explained a definition of learning as a change in behaviour that results from experience.
2. Certain changes in behaviour occur due to both maturation and learning.
3. The real learning leads to permanent changes in behavior.
4. The following are the general characteristics of learning:
   (i) Learning is adjustment
   (ii) Learning is growth
   (iii) Learning is organizing experience
   (iv) Learning is purposeful
   (v) Learning is active
   (vi) Learning is intelligent, etc.
5. Learning depends upon a number of factors, such as:
   (i) Motivation
   (ii) Clarity of presentation
   (iii) Direct experiences
   (iv) Intelligence
   (v) Atmosphere
   (vi) Methods of teaching, etc.

6. The most common general innate tendency of the child is imitation. It involves copying others. It implies “doing as others do”.

8.4 ASSOCIATIVE THEORIES OF LEARNING

Psychologists have developed two principle types of learning theories to explain how individual learn: behavioural or associative and cognitive.

Behaviour learning theories tend to emphasize observable behaviour, such as classroom behaviour or new skills or knowledge that can be demonstrated. Behavioural learning theorist is particularly interested in the way pleasurable or painful consequences of behaviour change the individual’s behaviour over time.

A major goal of the behaviourist is to determine the laws governing learning. The concern about the nature of learning has dominated academic psychology for most of this century. A number of ideas contributed to the behavioral view. The Greek philosopher Aristotle’s concept of the association of ideas is one important origin of behaviourism.

8.4.1 Associationism

Suppose when Bomb-Blasts you remember the event of Ojri-Camp. The whole thought process reflects the concepts of association of ideas. Two events can become associated with each other; thus when you think of one event, you automatically recall the other. Aristotle proposed that in order for an association to develop, the two events must be contiguous (Temporally Paired) and either similar to or opposite to each other.

As Aristotle said that learning is the result of association of two components, the “Conditioning” become synonymous with association.

8.4.2 Conditioning

Conditioning is considered by many psychologists to be the fundamental form of learning underlying the development of some of the earliest response patterns in newborn infants. Conditioning has been demonstrated to occur even before birth. Through conditioning the organism’s responses to a great variety of stimulus situations are changed.
8.4.3 Classical Conditioning

Classical conditioning may be defined as the formation (or strengthening) of an association between a conditional stimulus and a response through the repeated presentation of the conditional stimulus in a controlled relationship with an unconditioned stimulus that originally elicits that response.

The best known experiment in classical conditioning was performed by a Russian physiologist and Nobel prize winner, Ivan Pavlov, who accidentally discovered the conditioned response while performing a series of routine physiological experiments (Pavlov, 1927). Pavlov was studying digestion and salivation in dogs, using an apparatus which collected and measured the secretions of live animals by means of tubes implanted in the stomach or cheek. In these experiments, meat powder was placed in a dog’s mouth and his salivary response to the food was observed. Pavlov’s assistants reported that after a number of trials with any particular dog, the animal would begin to salivate when he saw the food, before it was actually placed in his mouth. Soon he would salivate at the sight of the food dish, and finally even at the sound of the assistant’s approaching footsteps. Pavlov, realizing that his phenomenon was of great significance, changed the course of his investigations.

In this series of experiments which followed his chance discovery, Pavlov established the terminology that is still used to describe this type of learning. He applied the term unconditioned stimulus (UCS) to the food in the mouth, which elicited the inborn unconditioned response (UCR), salivation. He demonstrated that after repeated occasions on which a bell was sounded immediately before the food was placed in the dog’s mouth. The bell alone came to produce the increased flow of saliva. Pavlov called this change in the animal’s behaviour a conditioned reflex or conditioned response (CR); the previously “neutral” stimulus, the bell, had become a conditioned stimulus (CS) by virtue, of having been presented with the food. A neutral stimulus is one that before conditioning does not produce the response that the investigator is seeking. It may, of course, produce other presences, such as pricking up the ears or turning the head.

Any stimulus that elicits an inborn response may be used as an unconditioned stimulus in a classical conditioning procedure. In the case of the meat powder, the stimulus is a pleasant one, but an aversive stimulus is a pleasant one, an aversive stimulus may be used instead. For example, if the bell is followed by an electric shock to the paw, the unconditioned response to the stimulus a flexion of the paw soon comes to be elicited by the bell alone.

Pavlov’s studies have had a widespread influence on the development of psychological thought. The process of conditioning has since been demonstrated experimentally in
countless experiments with both animal and human subjects, and the conditioned response has become a fundamental concept in modern psychology.

8.4.4 Extinction and Recovery
Two other important phenomena discovered in Pavlov's investigations were experimental extinction and spontaneous recovery. As long as the dog was given food after the sound of the bell, his salivary response to the bell continued. But repeated soundings of the bell without reinforcement (the presentation of food) resulted in the gradual disappearance of the contained response, a phenomenon known as experimental extinction. When the dog was allowed to rest for a day after intense extinction training, however, salivation again occurred at the sounding of the bell. The conditioned response was recovered “spontaneously”. But on this second day, with continued lack of reinforcement, the point of zero salivation was reached in fewer trials; and within a few more days. The unrewarded trials resulted in permanent extinction of the conditioned response. Without such extinction training, a dog might retain the conditioned response for three or four months with little decrease in its strength.

8.4.5 Conditioning Paradigms
Five different paradigms have been used in conditioning studies. These procedures, representing the varied ways in which a CS can be paired with the UCS, are not equally effective. The delayed conditioning paradigm usually is the most effective; the backward conditioning, the least effective.

(a) Delayed Conditioning
In delayed conditioning, CS on-set precedes UCS on-set. The termination of the CS occurs either with UCS onset or during UCS presentation. If, for instance, a darkening sky precedes a severe storm, this situation is an example of delayed conditioning. The darkening sky is the CS; its occurrence precedes the storm and it remains present until the storm occurs. Having experienced this type of conditioning, a person will be quite frightened whenever he or she sees a darkened sky.

(b) Trace Conditioning
With this conditioning paradigm, the CS is presented and terminated prior to UCS onset. A parent, who calls a child to dinner is using a trace conditioning procedure. In this example the announcement of dinner (CS) terminates prior to the presentation of food (UCS). As we will discover in the next section, hunger developed with this paradigm can be quite weak unless the interval between CS termination and onset is very short.

(c) Simultaneous Conditioning
The CS and UCS are presented together when the simultaneous conditioning paradigm is used. The example may be when you enter and walk into the fast food
restaurant, in this setting, the restaurant (CS) and the food (CS) occur at the same time. And probably it would lead to weak hunger conditioned to the restaurant.

(d) **Backward Conditioning**

In Backward Conditioning paradigm, the UCS is presented and terminated prior to the CS.

(e) **Temporal Conditioning**

There is no distinctive CS in temporal conditioning. Instead the UCS is presented in regular intervals, and over time the CR will be exhibited just prior to the onset of the UCS. To show the conditioning has occurred, the UCS is omitted and the strength of CR Assessed. What mechanism allow for temporal conditioning? In temporal conditioning, a biological state provides the CS. When the same internal state precedes each UCS exposure, that state will be conditioned to elicit the CR.

Consider the following example for temporal conditioning procedure. You set your alarm to awaken you at 7.00 am for an 8.00 am class. After several months you will find that you awaken prior to the sound of alarm. Your internal state present every day just before the alarm rings (CS) become condition to produce arousal; this arousal (CR) awakens you prior to the alarm’s sounding.

8.4.6 **Connectionism Theory by E.L. Thorndike**

Thorndike viewed learning as a series of stimulus-response (S-R) connection, or bonds. His theories of learning describe the ways in which these (S-R) connections could be strengthened or weakened. He felt that learning was basically a trial-and-error enterprise, and he paid little attention to the possibility of concept formation or thinking.

**Thorndike’s Puzzle-Box Studies:** Around 1900, Edward L. Thorndike conducted a series of studies on animal intelligence, a number of them involving cats in puzzle boxes. The general features of the research situation were as follows.

A hungry cat was placed in a cage with food placed outside the cage, which was so constructed that the door to the cage could be opened by pulling a string somewhere in the cage. Typically, the cat would make a direct and futile attempt to get the food by typing to squeeze through the bars, clawing at the string, and generally engaging in a fair amount of clawing and striking all over the cage. Given enough of such activity, the cat would eventually claw the string, thus opening the door and enabling the cat to get the food. When placed in the cage again after a time, the cat would behave quite similarly to its behaviour on the first occasion, clawing and striking about and eventually getting the door open. Over repeated trials in the puzzle box, the cat would gradually restrict its activity to the area containing the string and, only after a considerable number of trails, would eventually go directly to the string when placed in the cage.
observations and open the door. These observations led Thorndike to propose that problem solving is a matter of trial and error, with successful response gradually “stamped-in” and unsuccessful responses “stamped-out”. There seemed to be no reason to attribute to the animal any insight, reasoning, or understanding of the situation, rather it appeared that the psychologist’s task was to identify the principles underlying the strengthening and weakening of various responses to a stimulus situation.

**Three Major Laws**

Thorndike postulated three major laws of learning:

1. **The Law of Readiness**
   When an organism is in a state in which the conduction units (S-R connections) are ready to conduct, then the conduction is satisfying. If the conduction unit is not ready to conduct, then conduction is annoying. Thorndike was referring to a more momentary phenomenon, a kind of neurologically teachable moment.

2. **The Law of Effect**
   This was by far Thorndike’s most important law. It states that an S-R connection followed by satisfaction (reward) is strengthened. Also a connection followed by annoyance (punishment) is weakened. He came to feel that reward strengthened learning far more than punishment weakened it. His evidence for changing his position on this issue was, to say the least, rather flimsy. It was based on a study of symbolic reward and punishment, where the reward consisted of saying “Right” and the punishment consisted of saying “wrong” to the students. The results might have been quite different if the reward had been a candy bar and the punishment a mild electric shock.

3. **Edwin Guthrie: Behaviourist Associationist**
   The last of the early associationists was Edwin Guthrie. Guthrie was the behaviourist-associationist par excellence. Following directly in Waston’s footsteps, he rejected any psychological concept that might have “mentalistic” overtones. He postulated one law of learning: learning by association or, as he called it, contiguity. According to Guthrie, if a certain stimulus (or pattern of stimuli) is followed by a response, then the next time that stimulus appears, the same response will follow. That’s all there is to it stimuli and responses in sequence. There is no need to call on reward, reinforcement, or “effect” in order to explain how learning occurs. He also believed that learning occurs the first time the stimulus and response become associated.

To create conditions that will promote learning, Guthrie believed that the teacher should provide the stimulus and the student should respond. For example, the teacher might point to a map and the students would then reply with the name of the city. The important thing was for the appropriate stimulus to be presented before the desired response occurred.

A frenzied mother once brought her child to Guthrie. The child had been in the habit, on coming home from school, opening the door of his home, taking off his coat, and
throwing it on the floor. The mother told Guthrie that no matter how many times she told her child to pick up coat and hang it in the closet, the child continued this behaviour. Guthrie did not reach for any deep psychological explanation, like finding out what throwing the coat on the floor symbolized, what it “meant” to the child. He simply told the mother to rearrange the stimulus response sequence. When the child throws his coat on the floor, he should not be told to hang it up. He should instead be told to put the coat on, go back outside, come through the door and, only then, hang up the coat. Thus hanging up the coat could become a response to the stimulus of entering the house, rather than to the stimulus of the mother’s command. “Take your coat off the floor and hang it up”.

The advice apparently worked, for then on the child hung up his coat correctly. Fortunately for Guthrie, and especially for the child, longer sequence of S-R associations did not form that is according to Guthrie’s system, the child might have forever learned to come home, open the door, throw the coat on the floor, pick it up, put it on, go back outside, come back in, their hang up the coat!

8.5 COGNITIVE THEORIES OF LEARNING
Include one’s ideas, beliefs, thoughts and images. When we know, understand or remember something, we use cognition to do so. Cognitive processes are mental activities that involve forming, manipulating and using cognition or cognition is a term used to describe all of our mental processes such as perceptions, memory and judgment.

Cognitive approaches to learning emphasize changes that occur within an organism’s system of cognition. Its mental representation of itself and the world cognitive learning involves the acquisition of knowledge or understanding and need not be directly reflected in behaviour. As the most important mental process is thinking and cognitivists focus most of their attention on studying how people think. In cognitive theories, however thinking plays the central role.

8.5.1 Max Wertheimer: Gestalt Psychology
Max Wertheimer, founded the school of psychology called Gestalism, or Configuration. Wertheimer insisted that it was useless to study small parts of psychological concepts, like perception or learning. Studying parts in isolation was unjustified, because changing any singly part necessarily changes the whole. Similarly, the whole may remain, even when all the parts have changed. For example, if we play a tune in two different keys, even though the individual notes are different each time, the tune retains its integrity. Wertheimer was concerned with the way children learn, particularly in school. He was against the use of rote memorization, especially when it so often seemed to be an end in itself. Above all else, he wanted children to achieve understanding, to have insight into the nature of the problem.
8.5.2 Wolfgang Kohler: Learning by Insight

Wolfgang Kohler, who had worked with Wertheimer at the University of Frankfurt, spent a few years during World War I on the island of Tenerife, off the coast of Africa. There he performed Gestalt psychology's most famous animal studies. Kohler arranged an ape's cage so that there were bananas hanging from the top a couple of boxes on the floor. In order to reach the bananas, the ape had to stack one box on top of another and then climb to the top. The ape's solution to the problem appeared to Kohler not to be one of blind trial and error. Instead, the ape seemed to size up the situation and almost in a flash, it understood the problem and "saw" the solution. The ape displayed what Kohler called insight, and Kohler felt that this was more typical of learning especially human learning, than Thorndike's concept of blind trial and error.

In another experiment, Kohler put food outside the cage, beyond even an ape's long reach. Inside the cage, however, there were some sticks. At first the apes would throw the sticks at banana. Then they "realized" that by using the stick as a kind of tool they could reach out and rake the banana in one, especially intelligent ape, named Sultan, were even able to join two short sticks together to rake the food in.

Kohler explanation was that the apes were able to see problem as unified whole. In the box stacking problem, the ape did not see the boxes and bananas as separate elements but came to realize that they belonged together as part of a whole. Similarly the sticks and bananas were perceived as belonging together, and it was only after this reorganization of perceptions that insight into the solution to the problem occurred.

Insight has been called the "a-ha" phenomenon. Kohler made much of the concept of insight, perhaps too much. He felt that insight learning did not depend on past experience, that it was not just a special case of transfer.

8.5.3 Summary

Association Learning and Cognitive Learning

Now that the dust has settled on some of the great theoretical debates of the past, two main schools of thought on learning have emerged, though many variations still exist. These two main schools of thought are association learning and cognitive learning.

Association theorists, on the one band, see learning as the result of connection (Associations) between stimuli (Sense impression) and responses, Dogs salivating When they hear the can opener opening their food, babies waving "bye-bye" on cue from their mothers, or fifth graders saying "seventy-two" to the stimulus "nine times eight" are all examples of association learning. A bond has been formed between two elements, a stimulus and a response.

Cognitive theorists, on the other hands, view learning as a recognition of a number of perception. This reorganization allows the learner to perceive new relationship, solve
new problems and gain a basic understanding of a subject area. A fifth grade suddenly realizing that multiplication is successive addition; an ape suddenly understanding that by putting two short sticks together, a banana that was out of reach is now obtainable; or an eighth grader discovering a way to calculate the area of a parallelogram, these are all examples of cognitive learning.

These two views of learning parallel the two sides of another controversy that has historically split the field of psychology. The behaviorists have typically been associationists, whereas the gestaltists have been cognitive theorists.
8.5.4 Activities

1. Define Associationism:

2. How extinction takes place in classical conditioning

3. Enlist laws of learning:
   (i) __________________________________________________________
   (ii) _________________________________________________________
   (iii) _________________________________________________________

4. Why S-R is important for learning:

5. Define cognitive process:

6. Gestalt psychology is a combination of:
   (i) _________________________________________________________
   (ii) _________________________________________________________
   (iii) _________________________________________________________

7. Differentiate between associative and cognitive learning:


cxxxvi
8.6 SELF-ASSESSMENT QUESTIONS

1. Define Conditioning. Explain the conditioning process explained by Ivan Pavlov.

2. What do you understand by S-R. Theory and how it can help in classroom teaching?

3. What is cognition, explain the theories of cognition?

4. Differentiate between the associative learning theories and cognitive learning theories?

5. Explain the role of associative and cognitive learning theories in teaching?

6. Gestalt Psychology is important for learning. Discuss?

7. Cognitive learning theories are important for intelligence. Justify your answer with arguments.

8.6 BIBLIOGRAPHY


Unit–9

INDIVIDUAL DIFFERENCES

9.1 OBJECTIVES
When you have gone through this unit, you should be able to:-
1. Elaborate the meaning and nature of individual differences.
2. Bifurcate the areas of individual differences.
3. Identify the causes of individual differences.
4. Provide remedial measures for individual differences through general educational provisions and special educational provisions.
5. Take care of slow learners and finally be able to measure individual difference through various evaluation tests and techniques.

9.2 OVERVIEW
As you look within yourself and or the people around you, you realize that you are a very special and unique being. Nobody else in the world is quite like you. Nobody else in the world has the same physiological equipment, the same genetic code (unless of course you are an identical twin) or has experienced the same sequence of life situations. Nobody else use the identical blend defense mechanisms that you use when encountering stress and nobody else is guided by the exact mixture of motives, attitudes, and feelings. Thus one of the basic themes of physiological is that of individual differences. No one is exactly like anyone else. Except in terms of the needs of the human species, that you eat, drink, breathe, sleep, exercise and require same physiological needs. The difference that occurs amongst children of the same age is in their maturational and learning processes. The task of the school is to provide for the common needs of the students with taking into account the unique characteristics of each individual. No easy situation to the task has yet been found, however, knowledge about the kind of difference is becoming more complete.

In this unit we shall examine the following aspects of individual differences.
(a) Meaning and Nature of Individual Differences.
(b) Cause of Individual Differences.
(c) Educational Provisions.
(d) Measurement of Individual Difference.

9.3 MEANING AND NATURE OF INDIVIDUAL DIFFERENCES
Experimental psychology has thrown adequate light on the nature and extent of individual difference; the findings of modern psychological tests and measurements have amply demonstrated that individual cannot fall into distinct categories in respect
of any physical or mental trait. On the other hands all measures of individual, whether they be physical, mental, emotional or some other show that they tend to distribute themselves according to the law of the normal probability curve.

The normal curve is bell shaped and bilaterally symmetrical on each side of its central tendency the mean. Just as many persons are above the average as are below it, starting with the lowest score there is a gradually increasing number of persons making each next higher score gradually decreases until the highest score is reached. For example, the following table indicates the distribution of intelligence according to the normal probability curve.

<table>
<thead>
<tr>
<th>S. #</th>
<th>Intelligence Quotient (IQ)</th>
<th>Percentage of Cases Occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>150+</td>
<td>0.2</td>
</tr>
<tr>
<td>2.</td>
<td>140-149</td>
<td>1.1</td>
</tr>
<tr>
<td>3.</td>
<td>130-139</td>
<td>3.1</td>
</tr>
<tr>
<td>4.</td>
<td>120-129</td>
<td>8.2</td>
</tr>
<tr>
<td>5.</td>
<td>110-119</td>
<td>18.1</td>
</tr>
<tr>
<td>6.</td>
<td>100-109</td>
<td>23.5</td>
</tr>
<tr>
<td>7.</td>
<td>90-99</td>
<td>23.0</td>
</tr>
<tr>
<td>8.</td>
<td>80-99</td>
<td>14.5</td>
</tr>
<tr>
<td>9.</td>
<td>70-79</td>
<td>5.6</td>
</tr>
<tr>
<td>10.</td>
<td>60-69</td>
<td>2.0</td>
</tr>
<tr>
<td>11.</td>
<td>50-59</td>
<td>0.4</td>
</tr>
<tr>
<td>12.</td>
<td>Below 50</td>
<td>0.2</td>
</tr>
</tbody>
</table>

 Individuals not only differ among themselves with respect to a specific trait but differences may also be noticed within the same individual when he is studied in respect of various traits. Difference may also be noticed in the same individual with respect to this performance of a particular task at different time. Runners differ in running the same distance say 2km. The same runner may cover the same distance taking different
times on different occasions. Thus there are inter-individual differences and the intra-individual differences, and both must be considered in studying individual differences.

9.3.1 Areas of Individual Differences

Individuals differ almost in every respect. They differ in physical as well as psychological characteristics. Some of the major areas in which they differ and which affect their personality growth to a large extent are age, height weight, sensory and motor powers, intelligence aptitudes or specific abilities, interest attitudes, appreciations and educational attainments. They also differ in their hereditary, family background and environmental influences.

i. **Chronological Age**

One of the general factor of difference that influences school grading is chronological age. A child enters school at a certain age, 6 years, and is supposed to progress regularly in his schooling in terms of age factor. It is assumed moreover, that all children should be able to profit similarly from instructions that is the same or nearly the same in content and method of presentation for all learners on the respective grade levels. Apparent in ability on the part of a learner to master study material is explained in terms of factors such as laziness or stubbornness, that fail to take into consideration the factor that learners differ in their ability to perform in any one or more areas of learning material and at any one stage of development.

Chronological age as it represents the learners level of maturity and hence his possible education, is and should be a factor of difference. No matter how superior mentally or physically a child of three may be, he cannot be expected, because of difference in degree of maturity to engage in learning activities that are suitable for the nine year old. Further, readiness to engage in a particular learning situation may differ from individual to individual on any age level.

ii. **Intellectual Abilities**

Views about the nature of intellectual abilities continue to change. For many decades the idea of a general intellectual ability was very popular. Then, the idea of a few primary mental abilities was added. Next, a structure of some specific abilities was proposed. At present, a major attempt is being made to identify the basic mental processes and learning strategies that underlie intellectual performances. The testing of intelligence began on a widespread basis in 1916 in the United States when Terman (1916) adopted the earlier version of an intelligence test by ‘Binet’ and ‘Siman’.

Terman thought of intelligence as the ability to carry on abstract thinking Thorndike (1926) defined intelligence as the ability to make good responses from the point of view of truth or fact.

Wechsler (1958) developed on intelligence test to measure the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively
with the environment. The Wechsler Scale included performance test as well as typical verbal and mathematical test. Jone Miller and Moodie (1934) conceived of **Intelligence** as in born whereas Hunt (1961) viewed it as almost totally determined by environmental condition. “Terman” regarded **Intelligence** is determined almost solely by heredity. Accordingly, he believed that the rate of intellectual development was fixed by heredity and therefore did not change from birth onwards. Cattel (1971) proposed two kind of general intelligence, fluid and crystallized. **Fluid Intelligence** is genetically determined and sets the upper limit of the individual’s ability. How well the inherited ability is used and what forms it takes depend on cultural factors including learning.

### iii. Crystallized Intelligence

**Crystallized Intelligence** is based on environmental factors, and its observable expression is based on learning. Accordingly, Fluid ability is necessary, but it is not sufficient for the development of Crystallized intelligence. Moreover, Fluid intelligence peaks at about age 25, but Crystallized intelligence continues to rise as long as person continue to learn.

### iv. Primary Mental Abilities

Thurstone (1938) identified seven primary mental abilities, and devised tests to measure them. The seven primary mental abilities are shown in table 2.

Thurstone’s identification of primary mental abilities refutes the idea underlying general intellectual ability that persons are equally able in all academic areas. Instead, most individuals vary markedly in verbal, numerical, spatial and other abilities. For example it is possible for a student to be in the top one-fourth of the students of the same grade in one ability, such as spatial, or mathematical, and to be in the bottom one-fourth of the same students in another ability such as word fluency or perceptual speed. The primary abilities emerge and reach full functional maturity at different rates. For example, perceptual seed approaches full functional maturity corresponding to that of adult status by age 20, Whereas word fluency and verbal comprehension only reach such a level, respectively, of about 60% and 80% of adult status and by 20% our verbal growth continues after we have peaked in perception; speed.

<table>
<thead>
<tr>
<th>S. #</th>
<th>Ability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verbal Comprehension</td>
<td>The ability to understand the meaning of words vocabulary test represent this factor.</td>
</tr>
<tr>
<td>2</td>
<td>Word Fluency</td>
<td>The ability to think of words rapidly, as in staving anagrams or thing of words that rhyme.</td>
</tr>
<tr>
<td>3</td>
<td>Number</td>
<td>The ability to work with numbers and perform computations</td>
</tr>
<tr>
<td>4</td>
<td>Spatial</td>
<td>The ability to visualize space-from relationships, as in recognizing the same figure presented in different</td>
</tr>
</tbody>
</table>
orientations.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Memory</td>
</tr>
<tr>
<td>6</td>
<td>Perceptual Speed</td>
</tr>
<tr>
<td>7</td>
<td>Reasoning</td>
</tr>
</tbody>
</table>

Guildford proposes three types of intelligence, each associated with different contents. **Concrete intelligence** involves figured content of mechanics, operators of machines, architects, artists etc.

(i) **Abstract Intelligence:** Requires the processing of symbolic and semantic content. Learning to recognize words, to spell, to operate with numbers, and to understand verbal and mathematical concepts involves abstract intelligence, the present day tests measure abstract intelligence.

(ii) **Social Intelligence:** Pertains to behaviour content, that is awareness and feelings regarding the behaviour of other and oneself teachers, social workers and political leaders require higher social intelligence than many other professional groups.

(iii) **Special Abilities:** Since learning on the elementary levels is concerned with the mastery of learning tools, the discovery of the extent to which a child may posses a special ability or aptitude is not so important during the early years of his schooling as it will be later. On the junior and senior high school and college levels provision needs to be made for the development of whatever aptitudes the individual learners may possess of music, art, physical education etc.

**Differences in Readiness for Learning**
Children of the same age are not necessarily at the same stage of readiness to learn. Differences are caused not only by variation in state of maturing but also by differences in previous learning background. Six years olds who enter the first grade may differ by one, two, or even three years in degree of readiness to profit from formal education. For example it has been found that the mental ages of the members of an entering first grade class may range between that of a three-years old and that of an eight years old. This means that although the chronological ages of the children may centre around six years, their stage of mental maturity (mental age) varies by five years. Also, pre-school home experiences may be such as to encourage the development of some children more than that of others.
Perhaps in no other field of learning, readiness to a learning is more important than it is in reading. The ability to adequate thought from the printed page is essential to success on all school levels as well as to proficiency in the higher forms of specialized learning. One of the most significant aims of fundamental education is to prepare the child to master the tools of reading during his elementary school training so that he may be prepared to extend his knowledge in the various areas of higher learning on the result of his acquired ability to understand and apply content of written material.

**Differences in Motor Ability**

Persons of any age differ in their ability to perform in activities that are preeminently motor. In general, motor coordination and ability to perform successfully in the more complex motor skills increase with age as maturity brings with it the more complex motor skills increase with age as maturity brings with it the power of sustained attention, muscular coordination, speed of performance, steadiness of control, and resistance to fatigue.

**Psychological (Sex Differences)**

Maccoby (1966) reviewed approximately 1600 studies that provided some information about psychological differences between males – females. Subsequently, Maccoby and Jacklin (1974) arrived at three kinds of conclusions regarding sex differences.

i) Widely confirmed differences

ii) Questionable differences

iii) And unfounded differences

**Differences Confirmed by MacCoby and Jacklin/Block**

Girls are higher than boys in verbal abilities, such as reading, vocabulary comprehension and spelling. Boys are higher than girls in spatial abilities, quantitative abilities and aggressiveness. Girls are higher than boys in tactile sensitivity in expressing fear, in seeking help and assurance, in maintaining closer proximity to friends are more anxious, have lower task confidence and are more compliant with adults of younger age.

Boys are higher than girls in solving problems, are more dominant, have a stinger self-concept, are more active and are more impulsive.

All these conclusions are based on the average of test scores / other performances of different groups of boys and girls used in the various studies. The conclusions give no indication of the amount of the difference between the boys and girls or of the percentage of one sex that was higher than the average of the other sex.

**Social Class Differences**

Social class is indicated by the status given to group of persons in a society by other persons of the same society. Warner, Havighurst, and Loeb (1944) found that person of a large community could be classified in to the following six socio class group: upper, upper-middle, middle-lower, upper-lower, and lower-lower. Social-economic status of the family, as measured by income, occupation of parents, and amount of education of
parents, was found to be an important determinants of social class. These criteria are generally used in determining an individual’s social class today.

Within any group of learners, differences in social background can be found that facilitate or retard achievement regardless of individual potentiality to master material. The learning experiences in which the child engages or has engaged in his home affect his willingness to participate in a present learning situation. Individual interests, attitude toward school and towards particular school subjects (sometimes developed as a result of attitudes at home or in the neighborhood environment), habits of cooperation or non-cooperation, ability or willingness to concentrate on learning material, and acquired study habits—all constitute factors of difference among learners.

The amount and kind of previous experiences and knowledge that the individual brings to a specific learning situation have much to do with his capacity for further study or his attitude towards it. If the learner feels that he already know much of the study contents of a specific course, he may lose interest in it, and fail to gain from further instruction. Hence, poor study habits are developed in learners, which may result in his failure to master the new material of the course.

Home condition, contribute significantly to educational achievement factors in the family (homes which are found to rear cognitive development are less favourable parental attitudes towards school and education lower parental expectations for their children and a less favourable in electoral climate of the home.

Racial and Ethnic Differences
Differences in abilities amongst racial and ethnic groups have not yet been studied sufficiently for the formulation of a general conclusion that will cover all cases. Factors other than individual ability to master learning material may very easily affect the results of studies and measurements, moreover, cross-marriages that have occurred for many generation between persons of different racial and ethnic groups may hamper clear delineation.

9.3.2 Causes of Individual Differences
There are some psychologists who hold the view that the cause of individual differences or psychological differences is inherited. These psychologists are called the HEREDITARIANS or TRADITIONALISTS. On other hand there are some environmentalists or progressivists who are of the opinion that environment is the sole factor in the development of intelligence. As a teacher, one should not accept any one of these two viewpoints without examining their relative importance. If a teacher believes that environment is the complete force and that heredity is little or nothing, then, his efforts will be directed almost equally for all children. In that way he will misdirect much of his energy. There are teachers who believe that “every child is a diamond in raw who needs only polishing in order to reflect the light of intelligence. If a teacher believes that children differ in respect of their potentialities he will feel that his efforts will bring different results with different pupils and he will have different
expectations for different pupils. Such teachers believe that a child will develop in the direction determined by his heredity and that the guidance and learning by parents and teachers matter very little. A teacher with such beliefs will miss many opportunities to develop the extent capacities of his pupils. It is therefore, necessary to examine various causes of individual differences, so as to arrive at a proper understanding of the problem. To prove that intelligence is due to heredity or an environment is not possible and can only be estimated indirectly since the two factors are interactive from the moment of conception. The main indirect lines of evidence have come from the study of family trees. Twin studies and others reared together and apart.

**Galton’s Study**
Sir Francis Galton was the first to study the possible relationship between intelligence and heredity. Galton first demonstrated that there is a great deal of individual variation in intelligence. That all people are not equally bright or capable. They also tried to show that these differences in mental ability were largely inherited, mostly by arguing that eminent men tended to be related to one another. As evidence, he presented the family trees of prominent men in the fields of law, science, art and the military, indicating that greatness ran in certain families.

**Goddard’s Study**
H.H. Godded studied the Kallikak family. A Certain Martin Kallikak (false name) had children by two women; one was feeble-minded, the other was of normal intelligence. The feeble minded mother gave rise to a high proportion of feeble-minded descendants, while the mother with normal intelligence had no feeble-minded children at all.

Since late 1960’s, a large number of studies have been conducted on development of intelligence. Investigators have tried to find out the correlation of IQ’s of identical twins reared together, identical twins reared apart, children and their true parents, foster children and their foster parents, sibling, and unrelated children.

<table>
<thead>
<tr>
<th>S. #</th>
<th>Relationship</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Unrelated Children Reared Apart</td>
<td>0.01</td>
</tr>
<tr>
<td>2.</td>
<td>Unrelated Children Reared Together</td>
<td>0.23</td>
</tr>
<tr>
<td>3.</td>
<td>Foster Parent Child</td>
<td>0.20</td>
</tr>
<tr>
<td>4.</td>
<td>Parent – Child</td>
<td>0.50</td>
</tr>
<tr>
<td>5.</td>
<td>Siblings</td>
<td>0.49</td>
</tr>
<tr>
<td>6.</td>
<td>Fraternal Twins</td>
<td>0.53</td>
</tr>
<tr>
<td>7.</td>
<td>Identical Twins Reared Apart</td>
<td>0.75</td>
</tr>
<tr>
<td>8.</td>
<td>Identical Twins Reared Together</td>
<td>0.87</td>
</tr>
</tbody>
</table>
Kimling and Jarvik’s Study

Erlenmeyer Kimling and Jarvik (1963) studied the IQ correlations for different blood relationships. The findings of their study are presented in table 4.

Interpretations of the Findings

(i) If heredity is an important influence on intelligence, then arbitrarily picked pairs of people who are not related biologically and who do not interact socially will not be similar in IQ at all. The correlation of IQ scores of many such pairs will average about 0. This has been proved by Kimling-Jarvik.

(ii) If environment is an important influence on intelligence then unrelated children reared in the same environment should be similar in IQ to some extent. The findings of Erlenmeyer, etc; indicate that the correlation of IQs of unrelated children reared in the same home is 0.20.

(iii) If heredity is important for the development of intelligence, then children’s IQ will correlate with those of their true parents. This fact comes true when we examine the findings of Erlenmeyer.

(iv) If heredity is important, then the correlation of IQs of children and their true parents should be higher than the correlation of IQs of children and their foster parents. This is also true. (Parent-child = 0.50’ foster – Parent and child = 0.20)

(v) Since foster father and foster children have different heredity, a positive correlation of their IQs indicates the role of environment. A positive correlation of IQs of biological parents and their children (0.50) also indicates the influence of environment on intelligence. For example both parents of a particular child will have very high IQs and that their child’s IQ will also be quite high. On the other hand, another set of parents may both have low IQs and so may have children. In these two cases, the transmission, though biological, may be also social at the same time. The child who has bright parents may have been exposed to a large vocabulary and a highly stimulating environment; he may also have been turned by his parents in basic intellectual skills. These experiences could readily help him achieve a high IQ while the children of dull parents could have been reared in an intellectually impoverished environment, thus leading to a low IQ.

(vi) If heredity is more important, then the IQs of identical twins should be more similar than those of fraternal twins. Identical twins have identical heredity, whereas fraternal twins may be as dissimilar as two siblings born to the same parents at different times. For this purpose the correlations of IQs of identical twins are higher than the correlations of IQs of fraternal twins. This can be seen from the findings of Erlenmeyer.
(vii) If environment is an important influence on intelligence, then identical twins reared together should be more similar in intelligence than identical twins reared apart. Identical twins who are reared together have identical heredity and similar environments. By contrast, identical twins reared apart have identical heredity but different environments. For this purpose, identical twins reared together have very high correlation of their IQs (0.87 Erlenmeyer) than identical twins reared apart 0.75.

(viii) In Conclusion, we can say that both heredity and environment are potent factors which cause individual differences in intelligence. The same is also true for other affective and cognitive characteristics. Intelligence is not the result of inheritance only, nor is it due to environmental influence and experiences. However, heredity does determine the mental ability/abilities of individual to an un-specifiable extent. Arthur Jensen (1969) says that intelligence is 80 percent inherited. Based on studies conducted over the past 50 years, Jensen concludes that genetic elements are for more important than environmental influences in explaining individual differences in IQ. But Jensen’s conclusions were debated and a search is being made about the role of early experiences in the intellectual development of children. We can also not forego environmental conditions that influence intellectual development. Nutrition, health, stimulation, emotional and intellectual climate and early education are important determinants of intelligence. Given two infants with the same genes, the one receiving better nutrition, health care, intellectual stimulation enriched home environments / preschool education will score higher on an IQ test when entering the first grade. Therefore a person’s intelligence / differences are dependent upon the continual interaction of heredity and environment.

9.3.3 Educational Provisions
Whatever may be the causes, children differ in their learning abilities. It is the duty and responsibility of any school system to provide for these differences so that every child is helped to rise to a height quite commensurating with his own abilities. The following are a few of the important steps that a school might take up in this direction.

9.3.4 General Provisions
(1) Every Individual's ability should be assessed as accurately as possible. Since individual possess cognitive and psychomotor abilities ranging from a very low to a very high degree and since they do not fall into distinct types, it becomes difficult to locate the exact standing of a child. Hence it is imperative that the abilities of children should be accurately assessed. The more reliable is the assessment; the better will be the provision. We must remember that ability is the capability to perform tasks, and a style refers to the Learner's preferred mode / desired conditions of learning, such as preferring to acquire information visually rather than orally and requiring quietness when studying, rather than tolerating
sound, such as background music or other persons talking. Cognitive styles refer to how one perceives, or cognizes situations. Dunn and Dunn (1978) identified student’s needs / preferences, or learning styles when studying. They also identified ways to adapt the physical environment of the classroom and instructional approaches to student’s need. There are four major areas of learning needs/preferences or styles. The four areas involve (i) the student’s environment for learning. (ii) the student’s motivation (iii) the sociological aspects of the learning environment (iv) and the student’s physical needs.

A Checklist of learning needs based on Dunn and Dunn is reproduced below. Teacher can mentally check the ones they correspond to the way the student’s preferred.

<table>
<thead>
<tr>
<th>Table-4: Checklist of Learning Preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Conditions of Learner</strong></td>
</tr>
<tr>
<td>1. Needs Quietness or Tolerates Sound</td>
</tr>
<tr>
<td>2. Requires Bright Light or Requires Low Light</td>
</tr>
<tr>
<td>3. Needs Cool Environment or Needs Warm Environment</td>
</tr>
<tr>
<td>4. Requires formal design of furniture such as a Desk/Chair or Requires Informal Design that Permits</td>
</tr>
<tr>
<td><strong>Motivational States of The Individual/Learner</strong></td>
</tr>
<tr>
<td>5. Self-Motivated or Unmotivated</td>
</tr>
<tr>
<td>6. Persistent or Not Persistent</td>
</tr>
<tr>
<td>7. Responsible or Not Very Responsible</td>
</tr>
<tr>
<td>8. Needs Structured Learning Conditions as Specific Assignments and Rules or Need little Structure</td>
</tr>
<tr>
<td><strong>Sociological Preference of Learners</strong></td>
</tr>
<tr>
<td>9. Prefers Learning Alone or Prefers Learning With One Peer.</td>
</tr>
<tr>
<td>Prefers Learning With Two Peers or Several Peers.</td>
</tr>
<tr>
<td>Prefers Learning With Adults or Prefers Learning Through Several Ways.</td>
</tr>
<tr>
<td><strong>Physical Needs</strong></td>
</tr>
<tr>
<td>10. Has Auditory Preference</td>
</tr>
<tr>
<td>Has Visual Preference</td>
</tr>
<tr>
<td>Has Tactile Preference</td>
</tr>
<tr>
<td>Has Kinesthetic Preference</td>
</tr>
</tbody>
</table>

cxlix
Next we come to a very important learning preference / mode called as **Cognitive Style**. Teacher’s current with it will be able to assess the academic and social behaviour of an individual. A cognitive style is a identified learning styles, based upon the review of the literature, into two cognitive styles.
(a) Reflective Versus Impulsive
(b) Field-Dependence Versus Field-Independence

Persons with an **impulsive style** react quickly to situations. They give answer quickly without thinking through the situation first and tend to make errors by responding quickly. Persons with a reflective style react in opposite patterns.

Field-independent and field-dependent styles were identified by Witkin (1949). The basic difference between the field-independent and field style is in perceiving and ordering the stimulus world. The field independent person tends to restructure environmental situations. The field dependent person tends not to restructure situations but to accept them as experienced. The effects of these basic differences are reflected in many ways that are of interest to education.

<table>
<thead>
<tr>
<th>S. #</th>
<th>Field Dependent Persons</th>
<th>Field Independent Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>They are attentive to social cues, accept other people readily, and like to be with people.</td>
<td>They are less attentive to social cues and prefer to work with ideas and abstract principle.</td>
</tr>
<tr>
<td>2.</td>
<td>They get along with other.</td>
<td>They have fewer warm, interpersonal relations.</td>
</tr>
<tr>
<td>3.</td>
<td>They tend to be interested in social studies.</td>
<td>They are more interested in mathematics and science they learn well.</td>
</tr>
<tr>
<td>4.</td>
<td>They learn abstract concepts with difficulty</td>
<td>They learn abstracted concept well.</td>
</tr>
<tr>
<td>5.</td>
<td>They require more externally defined goals and extrinsic rewards.</td>
<td>They set their own goals, find desired consequences of achieving their goals and do not require extend reinforcement?</td>
</tr>
<tr>
<td>6.</td>
<td>Art students with informal art style.</td>
<td>Art students with formal art style.</td>
</tr>
</tbody>
</table>

**A Good environment and proper education are necessary**

Though heredity is important in determining eventual adult, performance and environment also plays a vital role as demonstrated by experiments. Hence a good environment and proper education are necessary for all. Younger children must have
rich opportunities to express themselves and they must have proper guidance for their emerging abilities.

(2) Identification of special talents
We need to spend considerably more efforts than being done at present in identifying abilities stating early in school years with the help of standardized tests. Such identification will be more authentic. The identified talents should be properly nurtured.

(3) Educational provisions must be continuous
In order to provide well for children of the entire range of abilities, educational provisions must be continuous. The continuity must be ensured, especially when children pass from one stage of education to another or from one school system to another.

(4) Adequate facilities and materials are needed
Bright children need some instructional materials more advanced than those for the other children. The slow learners also require reading materials different from the rest of the group. The sensory handicapped and emotionally disturbed children also require special material, equipment and space. In order to provide well for individual differences every school should be properly equipped with such facilities and materials as will be needed for all kinds of children.

(5) Competent school staff is needed
Even the best facilities of education of children cannot be better than the school personnel doing the work. Hence society should recognize the importance of well educated and competent school staff and give necessary financial support to schools. Every school should have competent teacher’s school psychologist, curriculum supervisors and administrators.

(6) Individualization is necessary
The principal means of providing for individual differences is individualization of instruction where every individual is allowed to work independently, Dalton Plan, Winnekta Plan, assignments, directed or supervised study, proper use of the library period conduction individuals experiments in the science laboratory and club activities are some of the methods of encouraging individual work.

(a) The Dalton’s Plan
Initiated by Helen Parkhurst, the Dalton plan stressed the principles of freedom and group interaction. According to the Dalton Plan, the school is to be regarded as a “house”, traditional classrooms become laboratories in which the function of the teacher is that of preserving “an atmosphere of study.” The teacher suggests activities, answers questions, and holds conferences with the learners as these are
desired by them. The learner’s assignments may spread over an entire month. The learner is free to prepare his assignments in his own way with the help of the teachers, who guides him in the budgeting of his time and who, as well as the pupils, keep “graphs of his daily progress”. Opportunity is also provided for group discussion on literary, historical and similar other socializing influences.

(b) The Winnetka Plan
Credit for this plan of individualization type of instruction goes to Carleton Washburne, of Winnetka, Illinois. The educational philosophy underlying this plan is that a learner should be allowed to follow his own rate of learning in each of the subject fields comprise his full curriculum. Basic to carrying out of the plan is the need of discovering the individual’s stage of learning for each subject and of building upon that rather than having him lack step with a group of learners who differ from him in stage of learning readiness. This plan necessitates the administration of examinations before a specific learning unit is undertaken in order to discover what that individual already knows.

The Dalton Plan, which keeps the learner at the same level on all subjects, the Winnetka plan allows the child to proceed at different rates in different areas. He might be a year ahead in arithmetic and six months ahead in reading. Learning units are arranged in the form of tasks/goals. Progress is checked by the learner himself by means of self administered tests. According to this plan there would be no failure since the child is measured against his own progress rather than in terms of the achievement of other learner. There is no skipping for the bright learner, but he does all the work in less time. The slower learner also completes his work but in longer time.

(c) Homogeneous Grouping
In order to effectively deal with children of varying abilities, one of the best methods is to divide them into groups of homogeneous ability and treat them separately by means of differentiated curricula and method of instruction. There are various forms of grouping practiced in American schools. Such as friendship grouping, interest grouping, achievement level grouping etc. but the most common and effective method is differential ability grouping. Recently mixed ability grouping has been introduced in school of UK.

(7) Need of Adult Education
The concept of individual difference has also an implication for adult education. Parents must receive training in sound preparation in regard to psychological needs and nature of children.
9.3.5 Special Provisions

(a) Provisions For the Gifted / Talented Children

Marlance (1971) defined gifted and talented children as those with high demonstrated achievement and / or high potential ability in any one of the following areas.

a. General intellectual ability
b. Specified academic aptitude
c. Creative, productive thinking
d. Leadership
e. Visual and performing arts
f. Psychomotor skills

This definition has been widely used, but required some elaboration. A gifted student is one who is high in general intellectual ability and in achievement in several areas such as mathematics, science, and English. Generally, a child who possesses IQ of 140 or above and is superior in most areas of the school life or promises to be so is called a gifted child, strangely enough the gifted are forgotten students in the class. Because they are able to take care of themselves academically, they get less attention from the teacher. Many gifted children display signs of apathy, boredom, unhappiness and even maladjustment.

The first task that teachers face is identifying the area or areas of giftedness of the students. Identification may be by an individual intelligence test, achievement tests and parental or teacher observation. Aptitude test designed to predict specialized talents in art and music, architecture, mechanics may also be used to identify talented students.

When the identification is done annually, new students not identified in prior years are found to be gifted or talented. Accordingly, it is not uncommon for as many as 25% of the school population to be identified as having a gift or a talent. It is also unwise to identify and label the gifted students; least others feel that they are not gifted. The entire exercise should be done very discreetly. Moreover, nearly every normally developing student has at least one area of high or potentially high performance that should be identified and developed as that of exceptional children.

(b) Educating the Gifted Children

Much can be accomplished with existing resources. A gifted student should have time to pursue topics more deeply than their classmates. Cluster of schools should combine their gifted children regularly for special enrichment programmes. School, should employ community expertise in such fields as art, photography, journalism, drama, and creative writing for their talented youngsters.
The key to educating the gifted children is to formulate individual programmes for them so that they encounter daily challenges. Such education requires teachers who have received special training that enables them to work with gifted students.

Special technique for educating the gifted fall along three lines.
(a) Enrichment
(b) Acceleration
(c) Ability Grouping

(i) Enrichment
Enrichment is defined as experiences that are above and beyond the regular curriculum. Kirk (1972) states that enrichment techniques usually follow one or more of these procedures.
(a) Teachers attempt to challenge gifted pupils by assigning extra reading and assignments and permit them to participate in related extracurricular activities, for example, if parents can arrange time, they could take a scientifically advanced student to special classes at an institution.
(b) Grouping the gifted students of different schools so that they are together occasionally enabling interested teachers to challenge their abilities by group discussion and independent research.
(c) Providing special offerings, such as extra language or advanced science course.
(d) Employing for each school system a special teacher who could move from school to school, identify the gifted, aid regular teacher and actually work with the gifted in seminars or group discussions busy schedule of work. It means providing challenging and meaningful work for the gifted.

The “Renzulli” model focuses on individual and small group investigations of aerial problems as the key enrichment activities for gifted students. Included in it are projects directly related to the school’s curriculum? For example, students may engage in creative writing, drama, dance, and similar expressive areas. In general, any enrichment activity is appropriate that enables students develop an area of their giftedness.

(ii) Acceleration
Acceleration means some modification in the regular school programme that permits the gifted student to complete the programme in less time or at an earlier age than usual (Getzels and Dillon, 1973). Double promotion is also an acceleration type. Acceleration can be of various types: school admission based on mental age rather than chronological age, skipping classes, combining two years work into one eliminating more basic course, early admission to high school/College.
Acceleration is important because curriculum is graded by age and every student is required to spend one school year to complete each class. Not permitting student to learn the subject matter assigned to a higher grade unnecessarily retards the educational development of many students. Stanley (1977) presents strong arguments supporting two or more years of acceleration pair to high school graduation by highly talented students. The concludes that enrichment, without any acceleration, will be injurious to the educational development of the brilliant student.

(iii) Ability Grouping
Ability Grouping has definite possibilities for dealing with the gifted. There are certain objections against grouping children according to mental abilities and segregating the gifted from the rest. It has definite advantages over teaching a class of heterogeneous group. Gifted children must be identified and grouped together in a special class so that the curriculum, instructional materials and teaching techniques can be designed to meet their requirements. But segregation should be done discreetly and without labeling the children.

(iv) Paul Torrance’s Guidelines to encouraging Giftedness
(a) Encourage manipulation and sensitivity to objects and ideas.
(b) Try to be tolerant of new ideas, no matter how far-fetched they may be.
(c) Be flexible in setting up lessons; permit some brainstorming.
(d) Maintain a relaxed classroom, tutoring or therapeutic atmosphere.
(e) Help the child who is creative learn to get along with other children.
(f) Present controversial problems and challenge accepted origins.
(g) Teach the basics of problem solving / creative processes.
(h) Teach them not to underrate their own creativity, dispel the sense of awe of masterpieces.

(c) Provisions for the Slow Learners
The term slow learner’ is commonly used with reference to children with IQs between about 80-90. Those with IQ of 90 or above are considered to be within the normal or above average range. Ordinarily they have the ability to get along fairly well in a regular class-room without much special help. Those with IQ below 75-80 on the other hand are usually classified as retarded or mentally retarded. The child we call slow learner is one who is not necessarily retarded or in need of special education but is likely to need some extra help in a regular class-room. He is capable of learning just about anything that the average child is capable of it just takes him longer. Students who are slow in learning one subject are frequently slow in learning others. But this is not always the case. A child may be slow in reading, but is average or above in learning, say mathematics. Different abilities are required for learning different subjects.
(1) **Identifying the Slow-Learner**

In identifying the slow-leaner the teacher can make use of intelligence test scores. But IQ scores are not always true indicators of slowness in learning. Because, two students having the same IQ score may have two different types of problems. Competency-based tests, an improvement of traditional achievement tests in different school subject may also be used to identify specific backwardness of children. Observation of students’ behaviour, adjustment language difficulties, emotional problems etc by parent and teachers can provide useful information in identifying slow learner.

(2) **Periodic Medical Examination**

Deficiency in ability required for a particular task may cause slow or poor learning in relation to that task. If the physical defect is recognized and corrected, the slow learner becomes a normal learner. Our school systems, must, therefore, provide for periodic medical examination of students, for taking remedial measures.

(d) **Learning Handicaps in exceptional Children**

Exceptional children are those who are considerably above or below the average of their age-group in characteristic or behaviour. Those above the average of their age-group are termed as gifted or creative, and have been discussed earlier. Here we shall talk about these exceptional children who are below the average of their age-group.

An exceptional child with a learning handicap/disability is one who differs from other children so much in one or more characters, for example, in vision or in behaviour that the child cannot profit maximally from the typical pattern of instructions provided to normally developing children. Change must be made in what is taught or how it is taught in order to provide for handicapped exceptional children. A child is classified exceptional on the basis of careful assessment/identification of various types of learning handicaps, so that they may participate in programmes for handicapped children as defined by the state.

There are children who have a good vocabulary, who know what words mean, and who can use words in conversation, but who are unable to learn to read. Such children are said to have “dyslexia” which in itself merely means inability to read”. There are also children who have what is called “hyperlexia” which means who can read at an early age, but who cannot understand what is spoken to them. The word dyslexia has come to be associated with learning disabilities generally, since so many of them related to the problem of reading. Actually, dyslexia is but one type of learning disability, and there are two basic kinds: visual and auditory.

A child who is “visual dyslexic” has difficulty in translating written letter into round such a child may also have difficulty is discriminating between two letters which are similar as “b” and “d” or “n” and “u” when written in text form. This often extends to difficulty in recognizing the difference between such words as “cat” and “cap” or “top” and “tip”
when they are in print. Such children may have other nonbearing difficulties as well, as in the case of a child who insists to play with a ball but who does not enjoy watching others play a ball game because he or she cannot understand what is going on even though can she “see” it.

A child who is an “auditory dyslexic” has difficulty in translating sound into meaning. Sometimes this shows up as difficulty in discriminating between sounds that are somewhat similar: a child with such a difficulty will not discriminate between “bat” and “cat” when they are given orally. He may also fail to recognize the similarity between “milk” and “silk”. A child with auditory dyslexia may also have difficulty remembering things told to him orally.

Another type of difficulty that learner may have is “sequencing”, for example, they are unable to put blocks in the same order as a model or to get the steps right in a long division problem, or to get the letters in the right order in spelling (writing “milk” for milk).

A complete programme of diagnosis will include medical reports and other information. A fairly complete list of things that can be done to identify various types of difficulties is given below:

- Evaluation of intelligence.
- Visual-motor Perceptual Tests.
- Personality Tests
- Linguistic Evaluation
- Reading Tests
- Pinpointing of Behavioural Difficulties
- Medical History Evaluation
- Physical Examination, both General and Neurological Including Visions and Hearing Tests.
- Assessment of Cognitive Development.

(e) Placement with a Teacher

Emotional crises, difficulty in interaction with the teachers and lack of proper environmental setting may also cause slow learning. In order to find measures to prevent failures in learning, each learner should be placed with the teacher with whom he can interact most effectively. The positive effects of such interaction can bring about remarkable changes in a student. In helping the slow learner the teacher should (i) look at the total child (development, maturation, motivation etc) and (ii) examine the educational setting (curriculum content, mode of instruction and the learning environment).
(f) **Avoid Competition**
Competition is especially harmful for slow-learners. This does not do so much good for their self-concept. Competition causes the slow Learner stop trying and to feel even less adequate than he did originally. It is supposed to contribute to frustration, discouragement and feeling of worthlessness in them.

(g) **Remedial Teaching**
Teachers must provide remedial teaching/instructions for the slow learner. They have to repeat their instruction/directions several times and in simple words, they should give practice drill and review exercise lessons. They should introduce new material in small easy steps, relating it to what he already knows. Short range incentives are more productive than intrinsic motivation towards long range goals.

(h) **Non-Promotion**
Some teachers argue in favour of detention or non-promotion of slow learners. But when a youngster is not promoted he perceives himself and is perceived by other as a failure. He thinks that he has been punished. As dissatisfaction increases, he becomes a truant and drop-out. The slow learner is not to be branded as a failure/non-learner, not to be compared with others who are not really his peers. He is to be helped and listened to, and should be encouraged and understood rather than beaten down, at home as well in school. If possible **Special Classes**, especially by trained teachers may be started for slow learners who have a strong need for accomplishments, which might be difficult for them in a regular class. Each small success or accomplishment must be rewarded.

(i) **A Disadvantaged Child**
Is one who is (a) handicapped or disabled because of certain conditions, (b) denied the opportunity to grow normally at his own natural rate (c) has been denied the basic / universal rights of children i.e. a stable home, loving mother, a supportive father, (d) who suffers from a continuing inadequacy of basic necessities of life. Thus the term continuing inadequacy of basic necessities of life. Thus the term disadvantaged refers to an inner condition of a child resulting from an outer deprivation; there are several categories of disadvantaged children, such as:
- Economically disadvantaged, socially, culturally, intellectually, educationally or linguistically disadvantaged.

(j) **Causes of Disadvantaged Conditions**
(a) Economic-poverty, poor occupational status, unemployment, poor housing/diet/health clothing etc. or inadequate medical care, cleanliness, pre-natal and post natal complications.
(b) Home and neighborhood-school inadequacy, crowded home, lack of play space, slum type, homes.
(c) Defective child-rearing and parenting behaviour, lack of cultural stimulation, parental rejection or over-indulgence.
(d) Intellectual, educational, retarded cognitive growth, delayed speech, over stimulation, failure, stagnation, dropout.
(e) Psychiatric problems, behaviour problems and disorders.

(k) Programme for the Disadvantaged
(a) Preventing programme for health, nutrition and care.
(b) Preparatory and pre-school education programmes
(c) Educational reform for adapting curricular, school, teachers teaching methods and textbooks.
(d) Parent education and functional literacy programmes.
(e) Social and welfare programmes for adolescents/Youth/Families and communities.

9.4 MEASUREMENT OF INDIVIDUAL DIFFERENCES
Measurement is the assignment of a number to an object or event according to rule. This may represent something physical, as when you step on the scales and note, with dismay or pleasure the number that indicates your weight. Or it may be more subtle, as when you take a vocational aptitude test and receive your score in medical or engineering aptitude test. In order to draw meaningful comparison, measurement, must be meaningful. In order to have meaning, all measurements must satisfy two basic criteria: they must be reliable and they must be valid.
(a) Reliability is the indication of the consistency of measurement, e.g: If your weight reads 140lbs, one days, 240 pound the next day, and 40 pound the days after, your faith in the precision of the scale would be secretly shaken. The same is true of psychological test. Our measurements must be consistent over repeated tests of measurement. A good test should yields roughly the same scores over repeated measurements, as long as that which is being measured does not change dramatically.
(b) Validity Measurements must also be valid, validity is an indication of the extent to which a test measure what it is supposed to measure.
(c) Correlation In order to give precise statements about reliability and validity, a statistical technique called correlation may be utilized. It allows scientists to make predictions; correlation is a statement about the strength of the association between two (or possibly more) variables. If the correlation between two variables is high, the variables will tend to be very together, that is, wherever one of the traits is found, chances are good that the other trait will also be found. If we observe that people with bland hair usually have blue eye then we would say that there is correlation between the variables hair colour and eye colour. This is not to say that having bland hair causes one to have blue eyes, but it does allow us to predict, whenever we know that certain individuals have bland hair, that
they are also likely to have blue eyes. As discussed earlier, individuals differ in sensitive, affective and psychomotor abilities. They differ almost in every respect—personality, attitude, interest, intelligence and achievement. Individual differences can be identified and measured through finer measurement instruments known as psychological tests. A psychological is a pattern of stimuli, selected and organized to elicit responses which reveal certain psychological characteristics in the person who makes them. The following psychological tests can be used by the teacher or psychologists to measure difference among individuals.

9.4.1 Test of General Intelligence

Sometimes these tests are also referred to as tests of mental ability, tests of general ability or test of scholastic aptitude, these tests measure the psychological traits termed to “intelligence” which provide the best possible single clue to the understanding of children’s academic performances. There are various tests of intelligence like standard-binet intelligence test (revised), Wechsler intelligence scale for children and various culture free and culture fair tests.

9.4.2 Tests of Aptitude

These tests measure the possibilities of success in future performance. One of the most famous batteries, which measure children’s different aptitudes, is “differential aptitude test battery” which measures the following abilities.

(i)  Verbal Reasoning
(ii) Numerical Ability
(iii) Abstract Reasoning
(iv) Space Relations
(v)  Mechanical Reasoning
(vi) Clerical Speed and Accuracy
(vii) Language Usage

9.4.3 Interest Inventories

Strong Vocational Interest Blank, and Kuder’s Preference Record (Vocational) are some of the interest inventories that can be used to measure differences among individuals in their interest.

9.4.4 Test of Personality

The MMPI, Bells Adjustment Inventory, Projective tests like “Rorschach Ink Blot test.” Thematic Apperception test, and other questionnaires can be used to measure personality structure and adjustment, and difficulties of individuals.

9.4.5 Competence-Based Tests
Tests of achievement, mostly teacher-made type, can be used to measure individual differences in academic achievement. Practically, these tests as are prepared by teachers do not measure the competence in learning various subjects. The competence-based tests are an improvement over the traditional tests, and are not difficult to prepare such tests. Once the teacher knows the learning competencies in various school subjects it becomes easy for the teacher to prepare such tests.

It must be noted that scores obtained by a student in any one of the tests may not be a sure measure of his standing in the group. Scores on tests are influenced by a number of factors, internal and external operating at the time of taking the test. For this purpose scores obtained by one test can be supplemented by scores obtained from other similar tests.

9.4.6 Multiple-Choice Tests or Essays
What about multiple-choice tests or, as many poorly prepared students like to call them, “multiple-guess tests?” One of the criticisms of the multiple-choice tests is that it rewards rote memorization rather than true understanding. This can certainly happen if the test is poorly designed, but when thoroughly researched and carefully prepared, the multiple choice test can assess a person’s ability to apply concepts to problem solving situations. Rather than break up the units of knowledge and isolating the pieces, as the critics typically charge, a well-designed multiple choice test, such as SAT, demands that the students be able to understand concepts and bring facts together. Research evidence clearly shows that the SAT verbal score shares much in common with IQ, the correlation between them being an extremely high + 0.80.

What about essay questions? There is the fear that standardized tests based only on essay questions and writing samples may have an adverse effect on learning. Verbally adept but uninformed students may bluff their way through an essay exam. Similarly, the tactics used by some students or memorizing or rotting the topics of subjects also affects learning process. Essay type exams however, illuminate the student’s thought process in more detail, as compared to multiple-choice tests. But for a teacher, with a large class of widely varying abilities, interests and needs may have to rely on the multiple choice tests. It not only ensures reliability of testing but also more importantly it permits free time to work with individual students.

9.4.7 Computer Assisted Testing (CAT)
The computer age has led to a high tech form of testing called CAT. (Computer Assisted Testing) Here, the individual sits at a computer keyboard, and the questions are presented on the screen. The testing becomes personalized since the testing is interactive with the computer, in effect custom designing the test to each student’s skill level. For example, the question may get progressively more difficult until a level is
reached. When a student begins to get the questions wrong, an easier set of questions suddenly appears. This branching of easier and harder questions called going “up the ladder” or “down the chute” continues until the students true level of competence to reach. The educational testing services of USA are currently putting both the SAT and GRE (Graduate Record Exam) on a computer format. Many people believe that CAT is viable, cost-effective and a big improvement over paper and pencil testing.

9.4.8 The Portfolio Approach
Another testing technique, currently gaining in popularity is called the portfolio approach. Just as an aspiring artist or model carries a portfolio of past work to a prospective employer, so too does the student who selects examples of his or her best work over a term or even an entire year of study. It is said that the portfolio approach places more emphasis on a student’s overall accomplishment than on the ability merely to score well on a single battery of tests. Typical portfolios include original poetry, plan, short stories, essay and art projects. Even in math, a student might produce a series of fractions, showing their relationships to decimals, or an arrangement of dice to illustrate probabilities, or even present an essay on the life of the Prophet “Muhammad” (P.B.U.H). At the end of the year, the student hands over the portfolios to the teacher for evaluation. Teachers of the new Millennium should be made aware of this approach and should be given workshop preparation in learning this technique.

The portfolio method can also be used to evaluate teachers, students and the curriculum itself. A portfolio that includes, for example, “samples of student’s teacher developed plans and materials, videotaped teaching episodes, and other teacher’s reflections on his or her own teaching can provide direct evidence of what a teacher knows and can do.

Whether, the portfolio approach proves to be as valuable as it promises is still in question, but there is no doubt that new testing methods will be employed as educational psychology operates in the 21st century. New testing procedures are on the horizon, procedures intended to bridge the gap between cognitive psychology and psychometric methods.

9.4.9 Grade Equivalent Scores
Grade equivalent scores are based on relating a given student’s score on a test to the average scores found for other students in a particular grade, at the same time of years, and of roughly the same age. For example, assume that in September, a large, representative sample of their graders (III class, students) of the morning group, producer an average score of 30 on a certain arithmetic test. If a given student is then tested, and receives a score of 30, that child would be assigned a grade-equivalent score of 3.0 of the child did somewhat better than that and had a score of say 3.4, it would indicate a performance equal to a third grade student in the fourth month (December) of the school year. Grade equivalent scores are typically reported in tenths of a year, so
that a score of 5.9 refers to the ninth month (June) of the fifth grade, and a score of 0.0 to the first day of Kindergarten. Thus, the scores range from 0.0 (or sometimes ko) through 12.9, representing the thirteen years of school from Kindergarten through grade 12. the first of September is given on the score as 0, whereas the end of September as 0.1, the end of October as 0.2 and on until the end of June as 0.9. a note of caution in this system is.

(a) Children do not all grow and develop at the same yearly rate, never mind the same monthly rate, so don’t be overly concerned when a seemingly bright child suddenly under performs the norms of a few months, that same child may quickly catch up and even outperform the norms several months later.

(b) Don’t be too quick to use a precocious child’s high score in same area as a reason to have that child skip a grade or two. A third class (grader) might even get a grade equivalent of 7.0 on a given test. This doesn’t mean that the child is now ready for a fast promotion to class-7th. What it does mean is that the third grader has certainly enquired third-grade material and infect has done as well as a seventh grader when measured on a third-grade test. However, there are many things the 7th grader has learned and is expected to know which are simply not even part of a third-grader’s consciousness and which don’t appear on a third grade test.

9.4.10 Curriculum Testing
Virtually any curriculum that is more than five years old requires a thorough evaluation, this is most obvious in field such as science, but should be done in all areas. This type of testing shown answers the following:

(a) To what degree have the curriculum’s goals been reached?
(b) Is the curriculum content appropriate in view of the mission’s objectives.
(c) Has the instruction been truly based on the curriculum.
(d) Has the assessment measured the taught curriculum or planned.

9.5 SUMMARY
Human beings have many common needs and characteristics, but they are also different in many ways. Students of the same chronological age vary widely in general intellectual abilities, primary mental abilities, motor abilities, and specific intellectual abilities. Differences among students in their learning abilities, interests and motives result in very great differences in their educational achievements. Some normally developing, rapid-learning class 3 children achieve as high as normally developing slow-learning class 12 students. Moreover a student typically does not achieve at the same level in different subjects such as mathematics, science, reading, foreign language and typing. It is also not un-common to find students who are in the upper one-fourth of their grade in one primary mental ability, such as mathematical reasoning, and in the lower one-fourth in another ability, such as word fluency or perceptual speed.

The relative effects of heredity and environment on each individual’s development and on differences between groups have not been established with precision and accuracy.
Some scholars indicate a greater impact of heredity, while others indicate a greater impact of environment. A generally accepted scientific view is that heredity and environment are in continual interaction, and the precise contribution of each cannot be determined.

Children who are considerably above or below the average of their age-group in a characteristic or behaviour are designated exceptional children. However, most special education programmes today are for those who are below average, there is a recent shift from labeling exceptional children as handicapped, disabled, mentally retarded, hyperactive, gifted or in other terms. Instead, the behaviours are being classified, for example, deficits in specified abilities or skills, excessive behaviours in particular areas and acceleration in learning or creativity.

Many teachers of children and youth with high learning and creative capabilities follow provisions for gifted talented students including enrichment, acceleration or a combination of enrichment and acceleration. Sometimes ability grouping is also followed. Bringing handicapped/children with learning handicaps into the mainstream should be the preferred way rather than placing them in special classes and special schools.

Certain forms of learning are fundamental to the adjustment of the individual to the society. The tool skills, common knowledge and attitudes of understanding and cooperation constitute what may be termed the basis of a general education. All individual, whose intelligence level is normal/sub-normal, should be helped to achieve these educational goals.
Measurement is the assigning of a number to an observation according to certain rules. To give meaning to these numbers, all measurements must satisfy two basic criteria. They must be reliable and valid. Reliability indicates the consistency of a measurement, while validity is the extent to which a test measures what is intended to measure.

For measurement of individual differences certain tests of general intelligence, aptitude, interests, personality, etc have been formulated. Nowadays, computer Assisted Tests (CAT) ore also being employed. Multiple choice tests are also being followed, while a new method of portfolio approach is also proving very innovative and useful.

In conclusion, teachers must indicate as per the principles of child psychology, developmental psychology and educational psychology. Besides the theoretical instruction in the class, extracurricular activities for development of social/Islamic values must be emphasized to attain the goals of education.

9.6 SELF-ASSESSMENT QUESTIONS
1. What do you understand by individual differences? How can their knowledge help the teacher in his work?

2. Explain the concept of individual differences and the importance in education.

3. Select one of the classes in which you were a teacher on the elementary school level. Recall two members of the group who were discipline problems. How can you now explain their behaviour?

4. List persons of your acquaintance who seem to show marked differences in their motor skills and capacity for abstract learning.

5. Compare the Dalton and Winnetka plans, which one do you prefer and why.

6. Explain with examples what is meant by readiness for learning.

7. What provisions can be made in the schools to meet the situation of individual differences.

8. Explain the relative importance of heredity and environment on the development of intelligence in children. What are their implications for the teacher?

9. State the role of competence based tests to measure individual differences?

10. Explain the importance of Computerized Assisted Tests.

11. How can you identify gifted children in the class?

12. Explain the role of heredity and environment as causes of individual differences.
9.7 BIBLIOGRAPHY


Educational Psychology and its Classroom Applications. By: M. Daniel Smith Allyn and Bacon INC; 470, Altantic AV Boston, Massachusetts, 02210, USA 1975


Educational Psychology By: Cronbach, Hartcourt Brace Joranvich New York 1954.